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WEATHER BUREAU

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 1, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Upper. 0—10.	Lower. 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mogador, Marocco			29.98	761.6				NW			2		4			0	0	Cloudy	Dr. Ollive.
Nemours			29.75	755.6	65.7	18.7	73	E			2		10			0	0	Fair	Metge.
Algiers			29.74	755.3	56.5	13.6	90	NE			2		10			0.209	5.3	Fair	Nicolas.
La Calle			29.74	755.4	64.6	18.1	82	ENE			4		6			0.197	5.0	Cloudy	Fonfrède.
Tunis			29.74	755.4															Jacques.
Sfax			29.82	757.5															Gau.
Saida			29.77	756.1															Bernard.
Tebessa			29.77	756.1	68.9	20.5	43	SSE			7		4			0.079	2.0	Very cloudy	Watrin.
Geriville					70.7	21.5	44	NW			2		4			0	0	Fair	Brugniaux.
Laghouat			29.71	754.5	74.1	23.4	19	SSE			5		3			0	0	Cloudy	Suart.
Biskra			29.64	752.8	83.8	28.8	42	E			1		4			Inap.	Inap.	Very fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.48	748.7	30.04	762.9	46.2	7.9	92	NE			3		10			0.315	8.0	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.43	747.4	30.20	767.1	51.1	10.6	65	NE	9.8	4.4			4			0	0		Dr. Wierzbicki.
Eperies	29.19	741.3	30.07	763.7	54.0	12.2	89	N			2		4os			0	0		Julius Mikolik.
Gratz	28.82	732.1	30.09	764.2	47.3	8.5	83	ESE			2		10			0.083	2.1		Andreas Rospini.
Hermannstadt	28.54	725.0	29.93	760.2	67.3	19.6	68	SE			2		10			0.408	10.35	Thunder-storm.	Prof. A. Gottschling.
Kremsmünster, Observatory	28.61	726.7	29.95	760.6	54.7	12.6	76	NE			3		6			0	0		The Staff.
Lemberg	29.14	740.2	30.13	765.2	57.7	14.3	81	E			1		1			0	0		Dr. T. Stanecki.
Pola	29.81	757.2	29.93	760.1	63.6	12.0	94	NE			1		10			0.350	8.9		I.R. Hydrographic Office.
Szathmar	29.58	751.4	30.04	763.0	61.2	16.2	55	NW			3		8			0	0		Pet. Pancsics, S. J.
Szegedin	29.92	760.0	30.21	767.3	48.9	9.4	84	NE			1		10			0.106	2.70		Karl Stancel.
Trieste	29.85	758.2	29.95	760.8	54.1	12.3	74	ENE			2		10			0.138	3.5	Raining	P. Busin.
Vienna	29.38	746.2	30.13	765.2	47.8	8.8	81	ESE			2		10			0.028	0.7		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.97	761.2	30.07	763.8	52.4	11.3		SSE	18	8.0			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.10	764.5	30.12	765.0	56	13.3		SW			1		5					Blue sky	G.Carrick.
Armagh, (Observatory)	29.89	759.2	30.12	765.0	58.1	14.5		SW	13	5.8			7					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.17	766.3	56.2	13.4		NW	9	4.0			1					Blue sky	John Hartnup.
Bolton (Sharples)	29.61	752.1	30.12	765.0	58.0	14.4		WSW					0					Blue sky	Thomas Mackereth.
Bradford, Yorkshire	29.72	754.9	30.12	765.0	56.7	13.7	47	NW			4		6			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	80	26.7		NE			2		3					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	30.08	764.0	30.17	766.3	59.0	15.0		E			0–1		1					Blue sky	H. Todd.
Cardington			30.16	766.1	58.4	14 7		SE			0–1		1					Blue sky	John McLaren.
Chatham (School M. E.)	30.10	764.5	30.23	767.8	47.1	8.4		E			1		9					Overcast	Sapper W. Gibson, R. E.
Donaghadee	30.10	764.5	30.14	765.5	54	12.2		S			3		8					D. clouds	J. Mac Gowan.
Dover	30.16	766.1	30.19	766.8	48	8.9		E			3		0					Clear	J. Costello.
Falmouth (Observatory)	29.99	761.7	30.22	767.6	52.6	11.4		SSE			1		2					D. clouds	The Staff.
Fort Napier, Natal	27.87	707.9	30.07	763.8	70.8	21.6		NE			1		4					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.68	753.9	29.91	759.7	85	29.4		SW			1		8					D. clouds	
Galway (Queen's College)			30.07	763.8	53.5	11.9		SW			3		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.73	755.1	29.78	756.4	59.6	15.3		E			3		4					D. clouds	Sgt. W. Allen.
Glasgow, (Observatory)	29.89	759.2	30.10	764.5	54.6	12.6		SW			3	7c						D. clouds	D. G. Maclean.
Great Yarmouth	30.22	767.6	30.22	767.6	48	8.9		E			2		5					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.03	762.7	30.20	767.1	52.9	11.6		ENE					6					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.96	761.0	30.18	766.6	51	10.6		NNE			3		0					Blue sky	Dr.S.E.Hoskins, F.R.S.
Helston	30.35	770 9	30.48	774.2	57	13.9		S			2	c				0	0	Very fine	M. P. Moyle.
Holyhead	30.15	765.8	30.19	766 8	49	9.4		SW			3		0					Blue sky	John Tilston.
Jersey	29.90	759.4	30.20	767.1	53.3	11.8		NNE			3		2					D. clouds	J. Fisher.
Kew (Observatory)	30.16	766.1	30.20	767.1	53.0	11.7		E	12	5.4								Misty	The Met'g'l Office.
Leicester (Museum)	29.85	758.2	30.10	764.5	59.0	15.0		SW			1		0					Blue sky	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.71	754.6	29.78	756.4	65.4	18.6		SE			3		8					Overcast	A. King.
Nairn	29.93	760.2	30.02	762.5	60	15.6		W			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.14	765.5	82.0	27.8		SE			0		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.98	761.5	30.16	766.1	63.2	17.3		SSW			2		0			0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.63	752.6	30.15	765.8	60.0	15.6		S			1		5					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.96	761.0	30.22	767.6	57	15.0		E			1		2					Blue sky	The Staff, for E. J. Stone, Esq
Plymouth	30.14	765.5	30.21	767.3	55.3	12.9		S			2		5					D. clouds	John Merrifield.
*Roche's Point	30.14	765.5	30.24	768.1	59	15.0		SW			3		2					¼ clouded	Wm. Kennedy.
St. Ann's Head	30.04	763 0	30.21	767.3	51	10.6		W			1		0					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.03	762.7	50.4	10.2		WSW	8	3.6			10					Overcast	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.87	758.7	29.93	760.2	57.0	13.9		NNE			3		2					Blue sky	Serg't W. H. Lyne.
Sheffield	29.84	757.9	30.12	765.0	61.5	16.4		S			1		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.10	764.5	30.13	765.3	57.2	14.0	61	NW			2		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.13	765.3	57.2	14.0		WSW	9	4.0			0					Blue sky	Rev. S. J. Perry.
Stratfield Turgiss	29.98	761.5	30.20	767.1	59.3	15.2		NE			2		0					Blue sky	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	30.17	766.3	30.20	767.1	59	15.0		S			4		3					D. clouds	W. Newcombe.
Valencia (Observatory)	30.15	765.8	30.18	766.6	54.4	12.4		S	30	13.4			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.00	762.0	30.04	763.0	80.9	27.3	47	SSW	7.5	3.4		2	8			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.03	762.7	50.0	10.0	87	S			1		4k			0.01	0.3	Starlight	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.11	764.8	56.5	13.6		W			2		4k			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.78	756.4	29.97	761.1	77.5	25.3	63	ENE	9.5	4.2		1	1			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.75	755.6	29.84	757.9	59.1	15.1	72	NNW	14	6.3			8			0.04	1. 0	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.95	760.7	49	9.4		S			6		10			0	0		J. Youngclause.
North Unst, Shetland I's			29.97	761.2				SW			4		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather	Observer
H. M. S. Alert				Capt.J.P Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, East London, Cape Colony			D. clouds	Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 55′, W. 18° 59′			Drizzling	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.31	668.3	30.03	762.7	69.4	20.8	71	NE			2	3c	1d		NE	0	0	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.04	763.0	30.09	764.2	52.2	11.2	61	S			2		1						
Fanöe	30.11	764.8	30.13	765.3	48.2	9.0	77	WNW			6		6						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.80	756.8	29.84	757.9	39.2	4.0	84	SW			2		8					Snowing	
Thorshavn (Faröe)	29.91	759.6	29.94	760.5	48.2	9.0	76	SW			2		5						
Vestervig	30.00	762.1	30.10	764.5	47.5	8.6	78	WNW			4		2						

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.57	751.0	30.12	765.0	57.2	14	53	NNE			3		0			0	0	Clear	Collignon, Director.
Amiens, Normal School	30.02	762.4	30.13	765.2	62.6	17	76	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.55	758.2	30.11	764.7	59.0	15.0	29	ENE			2		1s			0	0	Clear	Klein, Commandant.
Avignon, Normal School	29.83	757.6	29.91	759.6	64.4	18	53	N			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.47	748.5	30.03	762.8	52.3	11.3	49	SE			2		10		E	0	0	Covered	C. Saillard, Director.
Beauvais, Normal School	29.84	757.8	30.10	764.6	55.9	13.3	25	ENE			3		0			0	0	Clear	Frère Eugene Marie.
Besançon, Normal School	29.13	740.0	30.03	762.8	51.4	10.8	65	NE			2		10		NE	0	0	Covered	A. Carré, Director.
Bordeaux	29.76	755.9	29.96	760.9	56.5	13.6	58	ENE			1		10		NE	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.15	740.4	30.07	763.6	54.0	12.2	69	W			1		10kn	N	N	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.49	749.1	30.05	763.3	50.5	10.3	71	NNE			3		8kn		NE	0	0	Very cloudy	M. Gence, Director.
Brest, Naval Observatory	29.91	759.8	30.16	766.0	54.3	12.4	63	NE			2		2k		E	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.97	761.1	30.04	763.0	54.0	12.2	94	NE			1		0			0	0	Very clear	M. Bletrix, Director.
Carcassonne, N. School	29.50	749.4	29.92	759.9	59.4	15.2	73	W			2		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.70	754.4	30.02	762.5	62.6	17.0	57	E			2		0			0	0	Clear	Jadot, Director
Chartres, Normal School	29.47	748.6	30.05	763.2	59.0	15	87	NE			2		4		NW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.61	726.7	29.98	761.6	47.7	8.7	77	N			1		10		N	0	0		Alluard, Director.
Commercy, Normal School	29.17	740.8	30.02	762.6	54.7	12.6	47	E			4		kn	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.79	731.2	29.93	760.2	62.4	16.9	61	SW			2		8		SW	0.024	0.6		L. Kina, Director.
Grenoble, Normal School	29.15	740.3	29.91	759.6	58.3	14.6	63	NW			1		k			0.110	2.8		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.84	758.0	30.06	763.4	57.6	14.2	47	NNE			3		5		SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.78	756.3	30.08	764.1	57.6	14.2	25	ESE			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.0	29.98	761.4	51.6	10.9	82	N			1		10n		NNE			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.99	761.8	30.10	764.6	57.6	14.2	29	NE			4		0			0	0	Clear	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.35	745.6	29.98	761.4	54.9	12.7	63	W			1		8		NW	0	0	Very cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.63	752.5	29.89	759.3	59.7	15.4	81	W			1		10		NE	0.173	4.40	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.99	736.3	30.04	763.1	50.4	10.2	62	E			3		kn		E	0	0		Barbier, Director.
Mont-Louis	24.68	627.0	29.92	760.0	41.7	5.4	78	NW	5.6	2.5			8		NE	0	0		M. Cave, for Dr. Fines.
Nice	29.85	758.1	29.88	759.0	65.1	18.4	62	S			1		1	S	S	0.559	14.2	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.71	754.5	29.91	759.7	63.5	17.5	56	N			1		5		N	0	0	Cloudy	M. Boyer, Director.
Perpignan	29.80	756.8	29.90	759.5	59.4	15.2	47	NE	11.2	5.0			8	N	N	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.35	567.6			32.9	0.5							5		NE	0	0	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.86	733.1	29.92	760.0	57.2	14	57	N			1		2kn	N	N	0	0	Slightly cld'y	M. Tallieu
Puy de Dome (Summit) Obs	25.04	636.0			32.2	0.1	98	NE			3		10			0.039	1.0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.98	761.4	30.05	763.2	59.7	15.4	45	E			2		2	E	E	0	0	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	30.03	762.7	30.11	764.9	61.0	16.1	24	NE			2		1		NE	0	0	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	30.10	764.5	30.13	765.3	57.6	14.2	55	NNE			3		0			0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.90	759.4	30.07	763.6	59.2	15.1	33	NE			3		0f		E	0	0	Partly cld'y	E. Renou, Director.
Tarbes, Normal School	28.92	734.5	29.99	761.8	57.2	14	78	W			1								T. Huguet, Director
Toulouse, Observatory	29.30	744.1	30.02	762.5	54.7	12.6	68	NW			1		10			0	0	Covered	B. Baillaud, Dir.
Tours	29.84	757.8	30.03	762.8	57.2	14.0	47	ENE			2		8	Calm	ENE	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.58	751.2	30.07	763.7	56.8	13.8	29	NE			3		0			0	0	Very clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.33	744.9	30.03	762.8	60.4	15.8	66	NNW			3		10		N	0	0	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.24	768.0	30.26	768.7	77.7	25.4										0.24	6.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.78	756.5			58.3	14.6	29	NE			3		0			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.99	761.8	30.02	762.4	61.2	16.2	53	SE	11.0	4.9			3ks			0	0	Fair	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 9:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,082.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.18	741.1	30.04	763.0	57.9	14.4	28	E			6		2cs	E		0	0		Prof. Dr. Hoh.
Berlin	29.97	761.2	30.14	765.6	59.0	15.0	35	SE			3		1			0	0		Prof. Dr. Arndt
Breslau	29.65	753.1	30.19	766.7	53.2	11.8	35	ENE			3		1	NE		0	0		Royal University Obs'y
Carlsruhe	29.59	751.6	30.02	762.4	56.5	13.6	59	NE			1		9	NE		0	0		Albert Senz.
Cassel	29.50	749.3	30.11	764.8	58.3	14.6	25	ENE			2		0			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.76	755.8	30.13	765.2	61.5	16.4	1	NE			2		0			0.008	0.2		Physical Society.
Friedrichshafen	28.56	725.3	30.00	762.1	48.6	9.2	66	NE			5		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.11	764.7	30.18	766.5	54.3	12.4	68	WNW			2		9			0	0		Dr. Reinhold Kleeman.
Kiel	30.14	765.6	30.16	766.0	51.8	11.0	62	NW			4		10			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.08	763.9	30.16	766.0	55.9	13.3	29	SW			2		3	NW		0	0		Prof. E. Luther.
Köslin			30.15	765.9	58.5	13.6		N			2		1			0	0		H. Müller.
Leipsic Observatory	29.73	755.2	30.15	765.9	56.7	13.7	30	ENE			2		1			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.95	760.6	30.17	766.4	58.5	14.7	43	E			1		0			0	0		Dr. Assmann.
Memel	30.11	764.8	30.16	766.0	48.7	9.3	50	W			2		5cs						Reinbrecht & Issermann.
Munich	28.17	715.5	30.03	762.8	48.4	9.1	64	E			4		10	E		0.008	0.2		Dr. C. Lang.
Neufahrwasser	30.13	765.4	30.15	765.8	57.9	14.4	36	S			3		7	NNW		0	0		A. Lothes.
Neustadt (Palatinate)	29.51	749.6	30.02	762.5	58.6	14.8	35	NE			1		1	NE		0	0		Reallehrer Dicknether.
Posen	29.87	758.8	30.16	766.1	57.6	14.2	34	N			2		3			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.48	749.0	30.04	763.0	55.4	13.0	53	NE			3		10	ENE				Raining	Imp. University Observatory.
Stuttgart	29.05	737.8	29.94	760.4	55.4	13.0	48	N					9	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.51	724.2	30.09	764.3	54.5	12.5	58	E	4.3	1.9		c	2k	W	E	0	0		Reallehrer J. Hopfner.
Wustrow	30.17	766.3	30.19	766.9	51.3	10.7	70	SW			3		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.54	750.3	29.92	759.9	79.0	26.1		S			1.0		5					Misty	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general forms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.58	751.3	29.63	752.6	83.0	28.3	83	SW	25	11.2			0			0	0	Blue sky	
Deesa	29.10	739.1	29.55	750.6	100.4	38.0	13	WSW	13.8	6.2			0			0	0	Misty	
Bombay	29.68	753.8	29.71	754.7	87.2	30.7	68	W	16	7.2			0			0	0	Blue sky	
Poona (Yarrowda)	27.86	707.5	29.66	753.2	91.8	33.2	34	W	24	10.7			0			0	0	Blue sky	
Belgaum	27.21	691.2	29.74	755.3	75.9	24.4	63	W	14	6.3			8	NE	NW	0	0	D. clouds.	
Lahore	28.73	729.8	29.43	747.6	103.3	39.6	21	Calm	2.9	1.3			0			0	0	Blue sky	
Roorkee	28.66	728.1	29.54	750.3	88.2	31.2	23	E	3	1.3			0			0	0	Misty	
Agra	28.93	734.8	29.46	748.4	103.6	39.8	16	SE	5.4	2.4			0			0	0		
Nagpur	28.54	724.9	29.53	750.1	102.7	39.3	9	NW	4.1	1.8			0			0	0	Blue sky	
Jubbulpore	28.22	716.8	29.52	749.9	100.2	37.9	20	N	3.4	1.5			2			0	0	D. clouds	
Lucknow	29.18	741.0	29.54	750.3	95.5	35.3	38	ESE	3.8	1.7			0			0	0	Blue sky	
Allahabad	29.24	742.7	29.54	750 3	96.2	35.7	39	E	3.1	1.4			0			0	0	Blue sky	
Patna	29.43	747.6	29.61	752.1	89.9	33.2	45	E	2.1	0.9			4	E	E	0	0	D. clouds	
Hazaribagh	27.60	701 0	29.56	750.7	88.3	31.3	26	NW	8.3	3.7			8			0	0		
Cuttack	29.55	750.5	29.63	752.6	87.9	31.1	61	SSW	3.9	1.7			8			0	0	Threatening	
Calcutta (Allpore)	29.62	752.5	29.65	753.0	79.1	26.2	64	SE	20.0	8.9			9		SSE; SW			Showery	
Goalpara	29.29	744.0	29.70	754.3	78.1	25.6	74	E	8.8	3.9			0			0	0	Blue sky	
Chittagong	29.52	749.7	29.71	754.6	78.4	25.8	69	ENE	4.9	2.2			7			0	0		
Sibsagar	29.40	746.8	29.74	755.4	78.1	25.6	73	ENE	2.3	1.0			5			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.57	751.0	29.97	761.3	54.1	12.3	67	NE	4.9	2.2			10			0.039	1.0		Prof. Giovanni Clodig.
Milan	29.43	747.4	29.95	760.6	58.3	14.6	67	S	1.8	0.8			8	S		0.575	14.6		Prof. Schiaparelli.
Padua	29.84	758.0	29.95	760.7	54.0	12.2	89	N	10.5	4.8			10	NE		0.551	14.0		Prof. Dott. Lorenzoni.
Moncalieri	29.01	736.8	29.91	759.7	57.2	14.0	78	ENE	0.7	0.3			6	ESE		0	0		Prof. P. F. Denza.
Genoa	29.69	754.0	29.87	758.8	61.5	16.4	60	N	9.8	4.4			4	SW		0.079	2.0		Prof. G. M. Garibaldi.
Mondovi	28.03	712.0	29.93	760.3	52.2	11.2	74	W			4		3			0.004	0.1		Prof. D. C. Bruno.
Pesaro	29.85	758.2	29.90	759.4	57.0	13.9	95	E	8.7	3.9			10			0.665	16.9		Prof. Luigi Guidi.
Florence	29.60	751.9	29.86	758.4	64.0	17.8	62	NE			4		8			0.130	3.3		Cav. F. Meucci.
Leghorn	29.78	756.4	29.86	758.5	61.7	16.5	76	WNW	2.5	1.1			10			0.016	0.4		Prof. P. Monte.
Rome	29.63	752.6	29.80	757.0	72.3	22.4	44	N	3.8	1.7			8			0	0		Prof. P. S. Ferrari.
Lecce	29.63	752.5	29.87	758.8	76.5	24.7	26	SW	15.0	6.7			2			0	0		Prof. C. De Giorgi
Cosenza	28.95	735.4	29.83	757.7	75.0	23.9	71	NW	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.54	750.4	29.73	755.2	66.2	19.0	70	E			4		10	SE		0	0		Prof. A. Pacinotti.
Palermo	29.57	751.0	29.82	757.3	67.5	19.7	50	ESE	6.9	3.1			9			0	0		Prof. G. Cincciatore.
Syracuse	29.79	756.7	29.84	757.8	68.9	20.5	74	ESE	6.3	2.8			10	SE		0	0		Prof. V. G. Guiliano.
SUB-SERIES																			
Naples, S. R.	29.27	743.5	29.78	756.4	71.6	22.0	50	ESE	0	0			7	SE		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y	30.09	764.3	30.10	764.5	55.5	13.1	66	NNE	6.4	2.9			10s			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.94	760.5	30.15	765.8	53.6	12.0	86	SSW	0.7	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.86	758.4	29.93	760.2	53.7	12.1	72	NNW	1.8	0.8		0	0			0	0	Clear	The Staff.
Wakayama	30.00	762.0	30.05	763.3	57.2	14.0	72	SSW	1.2	0.5			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.16	639.1	30.20	767.0	57.2	14.0	57	W			1	0	0			0	0	Very clear	Prof. L. Perez.
Guanaxuato	23.80	604.6			61.0	16.1	70	Calm	0	0		4	4	SW	NW	0.146	3.70	Cloudy	Vicente Fernandez.
Leon	24.54	623.3	30.20	767.0	63.5	17.5	83	E			1	5c	0	SE		0.27	6.9	Fair	Prof. M. Leal.
Mazatlan	29.84	757.8	30.10	764.5	66.5	19.2	100	E			1	0	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.20	589.2	30.25	768.4	52.7	11.5	79	Calm	0	0		1c	2k	E		0.016	0.4	Clear	The Staff
Morelia	24.15	613.3			66.7	19.3	65	SE			4	2c	8k	SE	SE	0.49	12.4	Covered	M. Fena, M. D.
Pabellon (Aguascalientes)	24.09	611.8	30.09	764.3	59.5	15.3	72	Calm			0	1ks	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.54	597.4	30.39	772.0	48.2	9.0	36	Calm	0	0		0	0			0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.34	618.2	30.25	768.4	64.2	17.9	54	E			1	5	0	W		0	0	½ clouded	G. Barroeta, M. D.
Tlacotalpam	30.11	764.7	30.12	765.0	77.2	25.1	89	Calm			0	1	2	SW	E	0	0	Clear	Prof. M. M. Chávaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas																			J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.0 ft.; Zacatecas, 2,496 m., or 8,189 ft.

NETHERLANDS SERIES.

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

Flushing	30.19	766.8	30.19	766.8	52.9	11.6		NNE			3					0	0		
Groningen	30.21	767.4	30.27	768.8	50.2	10.1		NE								0	0		
Helder	30.22	767.6	30.22	767.6	48.2	9.0		NE			2					0	0		
Hellevoetsluis	30.20	767.0	30.20	767.0	55.4	13.0	61	ENE			2					0	0		
Utrecht	30.15	765.9	30.20	767.1	52.3	11.3	58	NNE			3		5			0	0	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.04	763.0	30.10	764.4	54.0	12.2	61	S	2.5	1.1			10			0	0		
Brönö	29.94	760.4	29.98	761.4	43.2	6.2	85	SW	18	8			10			0.157	4.0	Raining	
Christiania	29.88	759.0	30.03	762.7	56.7	13.7	43	WSW	4	2			10			0	0		
Tromsö	29.76	755.9	29.82	757.3	38.5	3.6	80	SW	9	4			10			0.020	0.5		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.24	768.0	30.45	773.3	63.7	17.6	63	ENE			3		3			0	0		Dr. J. A. Sampaio.
Campo Major	28.78	730.9	29.77	756.1	59.9	15.5	50	ESE	13.7	6.1			9			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.84	757.9	29.93	760.1	61.0	16.1	59	NNE	4.3	1.9			9			0.169	4.3		Capt. D. A. de Cunha.
Lisbon Observatory	29.43	747.5	29.79	756.6	61.0	16.1	48	ENE	7.4	3.3			6	ESE		0	0		The Staff.
Ponta Delgada (Azores)	30.31	769.9	30.38	771.7	63.0	17.2	53	NE	13.0	5.8			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mossamedes, Benguela			29.94	760.4	74.8	23.8		SW			2		2		SW	2	SW		D. clouds	C. J. de Sousa Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.30	769.6	74.7	23.7		NNE			2		4		NNE	1	NNE		D. clouds	Antonio Sarmento, Q.M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.89	759.3	78.8	26.0		NNW			3		3		NW	1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.04	763.0	73.4	23.0		E			2		10		E	1			Overcast	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.82	757.3	29.84	757.8	26.6	— 3.0	89	NNW	18	8			6cs						Capt. Sseliwerstow.
Astrakhan	30.03	762.7	29.95	760.6	76.1	24.5	35	WNW	20	9			2k						Capt. Wisganow.
Barnaul	29.61	752.0	30.12	765.0	40.5	4.7	59	NE	0	0			10					Light clouds	Meteorological Obs.
Dorpat	29.85	758.1	30.10	764.5	36.7	2.6	69	NNE	11	5			8k						Prof. Dr. Weihrauch.
Ekaterinburg	28.64	727.4	29.57	751.0	59.5	15.3	57	SW	4	2			10						Meteorological Obs.
Irkutsk																			
Kasan	29.23	742.5	29.51	749.5	34.9	1.6	91	NW	20	9			10					Snowing	Physical Cabinet.
Kertch	30.08	763.9	30.10	764.4	53.2	11.8	64	NE	7	3			0						Lagorio.
Kieff	29.42	747.2	30.06	763.4	52.0	11.1	36	NW	7	3			9cks						Physical Cabinet.
Krotkowo*	29.22	742.1	29.69	754.2	42.6	5.9	71	NW	11	5			6						Cand. Fatjanow.
Lugan	29.84	757.9	30.04	763.0	55.2	12.9	31	NW	13	6			4						Meteorological Obs.
Moscow	29.39	746.5	29.95	760.7	38.8	3.8	70	NNW	7.8	3.5			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.12	765.1	30.19	766.9	48.4	9.1	60	NE	9	4			10n					Raining	Kurdakof.
Nikolaievsk, on the Amoor	29.69	754.2	29.78	756.4	35.8	2.1	75	Calm	0	0		2ck							
Nukuss	29.74	755.4	29.97	761.1	79.3	26.3	26	WNW	9	4			2s						
Orenburg																			
Pekin (China)	29.48	748.9	29.63	752.5	75.7	24.3	35	SW	9	4			8n						Physical Observatory.
St. Petersburg	30.00	762.0	30.02	762.4	38.5	3.6	46	NNE	13	6			4ks						Central Physical Obs.
Tashkend	28.52	724.3	30.04	762.9	72.7	22.6	30	Calm	0	0			1						Teich, A. M.
Tiflis	28.68	725.9	29.93	760.3	76.5	24.7	38	S	4	2			2k						Physical Observatory.
Vladivostock																			
Warsaw	29.72	751.9	30.15	765.7	53.2	11.8	40	NNW	7	3			3k						Astronomical Obs.
Wilna	29.68	753.9	30.11	764.7	47.5	8.6	42	NW	9	4			5					Heavy clouds	Astronomical Obs.
Yeniseisk	29.90	759.5	30.21	767.3	25.5	— 3.6	70	NW	13	6			5						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.79	756.6	29.89	759.3	59.7	15.4	61	SE	3.5	1.58			2			0	0	Clouds	Antonio Rave, Director
Bilbao, Met. Obs'y	29.99	761.7	30.05	763.2	58.6	14.8	96	NW	1.9	0.83			10			0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.02	686.3			49.1	9.5	67	NE	24.6	11.00			4			0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.65	702.3	29.88	759.0	53.8	12.1	79	NE	11.2	5.00		0	7			0.126	3.2	Cloudy	The Staff.
Murcia, Met. Obs'y	29.69	754.2	29.85	758.1	59.4	15.2	80	NE	5.8	2.61		5	5	W		0.018	0.47	Covered	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.04	737.5	29.93	760.2	57.2	14.0	46	NNE	24.2	10.8			1			0.016	0.4	Almost clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.10	764.6	30.17	766.3	77.4	25.2	76	NE	3.1	1.4		4c	2k	WNW		0	0	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.86	758.4	29.91	759.7	84.2	29.0	69	E	4.4	2.0			3s		E	0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.70	754.3	29.79	756.8	62.1	16.7	67	SSW	9.6	4.3		0	10		SE	0.053	1.3		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.07	763.6	30.15	765.9	76.6	24.8	92	E	7.2	3.21		7ck	4k	E	E	0.049	1.25	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.94	760.4	29.98	761.4	37.0	2.8		S			2		10			0	0		
Umea	29.96	760.9	30.01	762.2	44.6	7.0	57	SW			2		8			0	0		
Hernosand	26 96	761.0	30.01	762.3	48.6	9.2	76	S			4		5			0	0		
Stockholm	29.91	759.7	30.09	764.2	51.4	10.8	43	SSW			4		1			0	0		
Wisby	29.98	761.5	30.04	763.0	44.6	7.0	71	NW			4		3			0	0		
Sub-Series.																			
Upsala	29.95	760.6	30.03	762.8	56.5	13.6	40	NNE	3.8	1.7			2			0	0		Nils Ekholm.

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

Swedish Naval Series.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 44° 59′, W. 24° 57′			30.39	771.8	57.9	14.4	86	WNW			4		10						Overcast	J. P. Pâhlson.
H. M. Corvette Balder, N. 51° 06′, E. 1° 25′			30.19	766.8	48.6	9.2	82	NE			3		0						Blue sky	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.56	725.3	30.00	762.0	47.5	8.6	78	N			2		10					Raining	The Observatory.
Zurich																			The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.8 mm.; Thermometer, —5.8 Cent. Relative Humidity, +20 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1.339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.02	762.6	56.5	13.6	68	N	22	10.0			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.95	760.7	75.7	24.3		SW			1		2			0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.76	755.9	75.6	24.2	62	NE			1		10cs			0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B					32.7	0.4		NW	2	0.9			10ks			0.48	12.2	Fair	Hon. J. Ferguson.
Chatham, N. B	29.51	749.5	29.57	751.1	36.2	2.3	85	W	9	4.0			10s			0.45	11.4	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.53	750.0	29.57	751.1	43.4	6.3	91	S	15	6.7			8n			0.155	3.94	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.85	758.2	30.05	763.3	33.6	0.9	74	W			1		8s			Inap.	Inap.	Raining	James Smith, M. A.
Dalhousie, N. B	29.39	746.5	29.56	750.8	29.0	— 1.7		W			3		10ks			0.06	1.5	Cloudy	H. A. Johnson.
Father Point, Quebec	29.73	755.1	29.75	755.6	27.0	— 2.8	76	NW	20	8.9			10n			Inap.	Inap.	Threatening	J. McWilliams.
Fredericton, N. B	29.66	753.4	29.73	755.1	31.0	— 0.6	69	NW	16	7.2			10s			1.120	28.45	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.92	734.6	29.74	755.4	45.0	7.2	81	SW	3	1.3		0	0			0	0	Clear.	James Stewart.
Granton, Ontario	29.06	738.1	30.20	767.1	31.0	— 0.6	100	SW			1		10n			0	0	Cloudy	James Grant.
Halifax, N. S	29.62	752.3	29.75	755.6	42.2	5.7	82	SW	16	7.2		0	2ks			1.256	31.90	Fair	A. Allison.
Hamilton, Ontario	29.71	754.6	30.09	764.3	37.7	3.2	75	E			1	10cs	0	E		0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F																			E. Weedon.
Kingston, Ontario	29.78	756.4	30.13	765.3	35.5	1.9	71	W	8	3.6		1cs	0			Inap	Inap.	Clear.	S. Woods, M. A.
Little Glace Bay, N. S																			C. H. Rigby.
Montreal, Quebec	29.81	757.2	30.02	762.5	29.9	— 1.2	66	NW	25	11.2		0	1ks			0.10	2.5	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	29.75	755.6	29.79	756.7	30.5	— 0.8	78	S			1		9n			Inap.	Inap.	Cloudy	J. R. Nason.
Norwood, Ontario	29.40	746.7	30.12	765.0	35.0	1.7	70	SW	3	1.3		6k	0	NW		0	0	Clearing	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.38	746.2	30.10	764.5	35.0	1.7	63	SW	14	6.3		0	0			0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.16	766.1	35.7	2.1	70	W			1	0	3ks			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.51	749.5	30.23	767.8	37.0	2.8	53	SW	8	3.6			10n			0	0	Cloudy	H. Morgan.
Port Stanley, Ontario	29.56	750.8	30.22	767.6	40.2	4.6	67	W	16	7.2		Haze	0			0	0	Hazy	M. Payne.
Quebec, Quebec	29.54	750.3	29.88	758.9	20.0	— 6.7	85	N			5		4s			0.05	1.3	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.56	750.8	30.04	763.0	31.1	— 0.5	59	NW	5	2.2		4c	0	NW		0	0	Fair	W. H. McIntyre.
St. John, N. B	29.60	751.8	29.76	755.9	35.0	1.7	63	NW	21	9.4			10ks			0.850	21.59	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.39	746.5	30.13	765.3	36.0	2.2	85	SW	14	6.3			10ks			0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.84	732.5	30.17	766.3	32.0	0.0	78	SW	10	4.5			10s			0	0	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B	29.65	753.1	29.69	754.1	48.0	8.9	78	S	12	5.4		5cs	5ks			0.53	13.5	Clearing	T. C. Hill, C. E.
Toronto, Ontario	29.83	757.7	30.23	767.8	35.8	2.1	62	SW	14	6.3		5cs	2s			0	0	Fair	Magnetic Observatory
Windsor, N. S																			Prof. John E. Oram, M.A
Woodstock, Ontario	29.06	738.1	30.16	766.1	36.0	2.2	66	SW	16	7.2			10s			0	0	Cloudy	Professor Wolverton.
Yarmouth, N. S	29.77	756.1	29.84	757.9	36.0	2.2	70	W	27	12.1		0	4s			0.86	21.8	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.12	765.0	30.38	771.6	37	2.8	71	SE				10k	10s			0	0		John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.84	757.9	48.2	9.0		S			4					0.12	3.0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.10	764.5	30.19	766.8	41	5.0	57	NW	10	4.5		5k	0	NW		0	0	Fair	
Alpena, Michigan	29.38	746.2	30.05	763.3	33	0.6	89	SW	8	3.6			10s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.18	741.1	30.36	771.1	49	9.4	57	N	7	3.1		0	0			0	0	Clear	
Atlantic City, New Jersey	30.31	769.9	30.33	770.4	40	4.4	48	NW	19	8.5		0	0			0	0	Clear	
Augusta, Georgia	30.22	767.6	30.43	772.9	54	12.2	38	NE	7	3.1		0	0			0	0	Clear	
Baltimore, Maryland	30.32	770.1	30.37	771.4	43	6.1	43	NW	11	4.9		0	0			0	0	Clear	
Barnegat, New Jersey	30.25	768.3	30.28	769.1	42	5.6	42	NW	23	10.3		0	0			0	0	Clear	
Bismarck, Dakota	28.12	714.2	29.98	761.5	52	11.1	53	W	8	3.6		0	0			0	0	Clear	
Boerne, Texas	28.76	730.5	30.09	764.3	56	13.3	100	NE	8	3.6			10n		NE	0.05	1.3	Light rain	
Boise City, Idaho	27.22	691.4	30.18	766.6	53	11.7	67	SE	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.89	759.2	30.05	763.3	37	2.8	38	W	20	8.9		1k	0	W		0	0	Clear	
Brackettville, Texas	29.03	737.3	30.09	764.3	60	15.6	94	N	3	1.3			10n		Calm	0.19	4.8	Light rain	
Breckenridge, Minnesota	28.87	733.3	29.85	758.2	53	11.7	54	Calm	0	0			0			0	0	Clear	
Brownsville, Texas	30.09	764.3	30.14	765.5	74	23.3	83	NE	5	2.2		5cs	0	Calm		0	0	Fair	
Buffalo, New York	29.49	749.0	30.21	767.3	36	2.2	53	W	15	6.7		2k	0	SW		0.03	0.8	Fair	
Burkes, Arizona					61	16.1	35	N			1	0	0			0	0	Clear	
Burlington, Vermont	29.78	756.4	30.08	764.0	32	0.0	59	NW	14	6.3		2cs	2ks	S	NW	0.01	0.3	Fair	
Cairo, Illinois	30.02	762.5	30.42	772.7	56	13.3	57	E	2	0.9		0	0			0	0	Clear	
Campo, California	27.49	698.2	30.06	763.5	36	2.2	90	S	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.36	771.1	30.37	771.4	53	11.7	48	NE	18	8.0		2k	0	N		Inap.	Inap.	Clear	
Cape Henry, Virginia	30.36	771.1	30.38	771.6	49	9.4	64	NW	26	11.6		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.35	770.9	30.37	771.4	53	11.7	48	NE	22	9.8		0	0			0	0	Clear	
Cape May, New Jersey	30.31	769.9	30.34	770.6	41	5.0	48	NW	36	16.1		0	0			0	0	Clear	
Castroville, Texas	29.39	746.5	30.09	764.3	63	17.2	83	E	6	2.7			10s		E	0	0	Threatening	
Cedar Keys, Florida	30.23	767.8	30.26	768.6	64	17.8	48	NE	14	6.3		0	0			0	0	Clear	
Charleston, South Carolina	30.30	769.6	30.36	771.1	56	13.3	35	NE	15	6.7		0	0			0	0	Clear	
Charlotte, North Carolina	29.52	749.8	30.35	770.9	53	11.7	36	N	5	2.2		0	0			0	0	Clear	
Chattanooga, Tennessee	29.59	751.6	30.42	772.7	50	10.0	65	N	1	0.4		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	24.16	613.6	30.10	764.5	37	2.8	31	NW	9	4.0		2c	0	Calm		0	0	Clear	
Chicago, Illinois	29.45	748.0	30.15	765.8	46	7.8	54	SW	12	5.4		5ck	0	NW		Inap.	Inap.	Fair	
Chincoteague, Virginia	30.36	771.1	30.38	771.6	45	7.2	82	NW	13	5.8		1k	0	Calm		0	0	Clear	
Cincinnati, Ohio	29.72	754.9	30.40	772.1	47	8.3	70	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Cleveland, Ohio	29.53	750.0	30.28	769.1	40	4.4	39	SW	15	6.7		1ck	0	NW		Inap.	Inap.	Clear	
Coleman City, Texas	28.44	722.4	30.13	765.3	54	12.2	93	E	12	5.4			10s		SE	0.42	10.7	Threatening	
Columbus, Ohio	29.47	748.5	30.35	770.9	40	4.4	56	S	7	3.1		0	Fog		Calm	0	0	Clear	
Concho, Texas	28.28	718.3	29.98	761.5	53	11.7	91	E	10	4.5			10s		E	0.61	15.5	Cloudy	
Corsicana, Texas	29.86	758.4	30.34	770.6	57	13.9	81	E	2	0.9			10s		Calm	0.02	0.5	Cloudy	
Davenport, Iowa	29.54	750.3	30.19	766.8	48	8.9	56	SW	15	6.7		0	0			0	0	Clear	
Dayton, Washington T'y					53	11.7	53	E			1	2c	0	Calm		0	0	Clear	
Deadwood, Dakota	25.47	646.9			39	3.9	63	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	29.09	738.9	30.27	768.8	58	14.4	88	E	4	1.8		2ck	0	NE		0	0	Clear	
Delaware Breakwater, Del.	30.33	770.4	30.35	770.9	44	6.7	52	NW	26	11.6		0	0			0	0	Clear	
Denison, Texas	29.51	749.5	30.32	770.1	55	12.8	81	SE	2	0.9			10s		Calm	0	0	Cloudy	
Denver, Colorado	24.88	631.9	30.10	764.5	43	6.1	59	S	3	1.3		9ck	2s	SW	Calm	0	0	Cloudy	
Des Moines, Iowa	29.25	742.9	30.13	765.3	55	12.8	45	W	12	5.4		0	0			0	0	Clear	
Detroit, Michigan	29.51	749.5	30.20	767.1	38	3.3	63	SW	11	4.9			10s		Calm	0	0	Cloudy	
Dodge City, Kansas	27.54	699.5	29.84	757.9	49	9.4	51	S	12	5.4		8c	0	W		0	0	Fair	
Dubuque, Iowa	29.44	747.8	30.14	765.5	49	9.4	64	SW	11	4.9		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.16	740.7	29.83	757.7	49	9.4	71	SW	6	2.7		2cs	0	Calm		0	0	Fair	
Eagle Pass, Texas	29.54	750.3	30.28	769.1	60	15.6	100	N	10	4.5			10n		Calm	0.22	5.6	Heavy rain	
Eastport, Maine	29.70	754.4	29.77	756.1	34	1.1	61	W	12	5.4		10k	0	W		0.85	21.6	Cloudy	
Edinburg, Texas					74	23.3	90	SE			1		10s		SE	0	0	Cloudy	
El Paso, Texas																			
Erie, Pennsylvania	29.52	749.8	30.25	768.3	41	5.0	41	SW	7	3.1		0	0			0.03	0.8	Clear	
Escanaba, Michigan	29.26	743.2	29.92	760.0	42	5.6	66	SW	11	4.9			10s		SW	0	0	Cloudy	
Florence, Arizona	28.54	724.9	30.14	765.5	59	15.0	48	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.14	638.5	30.59	777.0	34	1.1	79	E	3	1.3		0	0			Inap.	Inap.	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.92	709.2	29.76	755.9	42	5.6	74	S	4	1.8		0	0			0	0	Clear	
Fort Custer, Montana	26.90	683.2			41	5.0	65	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.34	643.6	30.30	769.6	54	12.2	93	SW	2	0.9			10s		SW	0.53	13.5	Cloudy	
Fort Elliot, Texas	27.14	689.3	29.38	746.2	54	12.2	43	SE	8	3.6			10s		SE	0	0	Cloudy	
Fort Gibson, Indian Ter.	29.75	755.6	30.30	769.6	53	11.7	67	E	2	0.9		2c	0	W		0	0	Fair	
Fort Grant, Arizona	25.26	641.6	30.06	763.5	52	11.1	36	E	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	29.01	736.8	30.30	769.6	54	12.2	87	Calm	0	0			10s		Calm	0.35	8.9	Cloudy	
Fort Keogh, Montana	27.32	693.9			39	3.9	71	SW	4	1.8		0	0			0	0	Clear	
Fort McKavett, Texas	27.90	708.6	29.83	757.7	54	12.2	93	E	10	4.5			10n		E	0.01	0.3	Light rain	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	29.08	738.6	30.21	767.3	52	11.1	79	Calm	0	0		10cs	0	Calm		0	0	Cloudy	
Fort Stevenson, Dakota	28.09	713.5			46	7.8	61	SW	4	1.8		0	0			0	0	Clear	
Fort Verde, Arizona					43	6.1	75	W			1	0	0			0.04	1.0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.34	719.8	29.92	760.0	54	12.2	100	E	8	3.6			10n		Calm	0.10	2.5	Light rain	
Galveston, Texas	30.20	767.1	30.24	768.1	69	20.6	65	E	13	5.8		0	8s		SW	0	0	Cloudy	
Grand Haven, Michigan	29.43	747.5	30.08	764.0	48	8.9	70	S	18	8.0			10s		Calm	0	0	Cloudy	
Helena, Montana					41	5.0	57	S	1	0.4		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.50	749.3	30.29	769.4	48	8.9	63	S	4	1.8		0	0			0	0	Clear	
Indianola, Texas	30.17	766.3	30.20	767.1	71	21.7	80	E	16	7.2		5cs	5s	Calm	E	Inap.	Inap.	Cloudy	
Jacksboro, Texas	29.14	740.1	30.28	769.1	60	15.6	71	SW	2	0.9		0	0			0.10	2.5	Clear	
Jacksonville, Florida	30.23	767.8	30.25	768.3	66	18.9	41	NW	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	29.59	751.6	30.21	767.3	53	11.7	48	SW	7	3.1		1cs	0	Calm		0	0	Clear	
Key West, Florida	30.15	765.8	30.18	766.6	79	26.1	74	NE	5	2.2		0	0			0	0	Clear	
Kittyhawk, North Carolina	30.37	771.4	30.40	772.1	50	10.0	45	NE	23	10.3		2k	0	NE		0	0	Fair	
Knoxville, Tennessee	29.40	746.7	30.45	773.4	46	7.8	65	SE	2	0.9		0	0			0	0	Clear	
La Crosse, Wisconsin	29.26	743.2	29.99	761.7	52	11.1	60	S	5	2.2		5k	0	Calm		0	0	Fair	
La Mesilla, New Mexico	26.19	665.2	30.34	770.6	54	12.2	87	Calm	0	0			10s		Calm	0.45	11.4	Cloudy	
Laredo, Texas	29.69	754.1	30.02	762.5	69	20.6	100	SE	2	0.9			10n		SE	0.30	7.6	Light rain	
Leavenworth, Kansas	29.37	746.0	30.23	767.8	49	9.4	64	S	8	3.6		1cs	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	30.03	762.7	30.36	771.1	49	9.4	100	Calm	0	0		8cs	0	Calm		0	0	Fair	
Los Angeles, California	29.80	756.9	30.15	765.8	50	10.0	86	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.80	756.9	30.37	771.4	48	8.9	70	SW	4	1.8		0	Sm'e			Inap.	Inap.	Clear	
Lynchburg, Virginia	29.69	754.1	30.39	771.9	52	11.1	35	W	2	0.9		0	0			0	0	Clear	
Madison, Wisconsin	29.04	737.6	30.04	763.0	48	8.9	56	SW	17	7.6		5cs	0	W		0	0	Fair	
Marquette, Michigan	29.17	740.9	29.86	758.4	47	8.3	62	S	3	1.3			10s		S	0	0	Cloudy	

UNITED STATES SERIES -CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.58	725.9	30.35	770.9	57	13.9	87	NE	7	3.1			10n		Calm	2.98	75.7	Light rain	
Memphis, Tennessee	29.98	761.5	30.33	770.4	54	12.2	61	E	4	1.8			0			0	0	Clear.	
Milwaukee, Wisconsin	29.29	744.0	30.02	762.5	49	9.4	37	SW	28	12.5		5k	2s	W	W	0	0	Fair	
Mobile, Alabama	30.39	771.9	30.44	773.2	57	13.9	75	NE	7	3.1		0	0			0	0	Clear	
Montgomery, Alabama	30.14	765.5	30.38	771.6	55	12.8	55	NE	8	3.6		0	0			0	0	Clear	
Morgantown, West Virginia	29.34	745.2	30.36	771.1	46	7.8	62	W	3	1.3		0	0			0.20	5.1	Clear	
Mt Washington, N H	23.27	591.0	29.63	752.6	0	—17.8	85	NW	93	41.6			Fog		NW	0.11	2.8	Foggy	
Nashville, Tennessee	29.88	758.9	30.43	772.9	50	10.0	79	NW	1	0.4		0	Sm'e		Calm	0	0	Clear	
New Haven, Connecticut	30.08	764.0	30.20	767.1	40	4.4	39	NW	17	7.6		0	5ks		NW	Inap.	Inap.	Fair	
New London, Connecticut	30.09	764.3	30.14	765.5	40	4.4	31	W	18	8.0		1k	0	W		Inap.	Inap.	Clear.	
New Orleans, Louisiana	30.24	768.1	30.30	769.6	61	16.1	50	NE	14	6.3		2c	0	Calm		0	0	Clear	
Newport, Rhode Island	30.04	763.0	30.09	764.3	39	3.9	46	NW	26	11.6		2k	0	NW		0.03	0.8	Clear.	
New River, North Carolina																			
New York, New York	30.06	763.5	30.25	768.3	38	3.3	54	NW	15	6.7		1k	0	W		0	0	Clear	
Norfolk, Virginia	30.32	770.1	30.38	771.6	50	10.0	39	NE	12	5.4		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.14	689.3	29.74	755.4	43	6.1	47	SW	4	1.8		2c	0	Calm		0	0	Clear	
Olympia, Washington Ter	29.96	761.0	30.00	762.0	44.0	6.7	92	N	1	0.4			10s		S	0	0	Cloudy	
Omaha, Nebraska	28.95	735.3	30.04	763.0	54	12.2	49	S	8	3.6		0	0			0	0	Clear	
Oswego, New York	29.88	758.9	30.22	767.6	38	3.3	45	NW	12	5.4		0	0			0.02	0.5	Clear	
Pembina, Dakota	28.85	732.8	29.67	753.6	47	8.3	70	S	6	2.7		0	0			0	0	Clear	
Pensacola, Florida	30.31	769.9	30.34	770.6	59	15.0	54	NE	12	5.4		1cs	0	Calm		0	0	Clear	
Philadelphia, Pennsylvania	30.27	768.8	30.32	770.1	40	4.4	39	NW	19	8.5		0	0			0	0	Clear	
Phœnix, Arizona	28.86	733.0	30.65	778.5	60	15.6	49	NE	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.82	452.6	30.03	762.7	16	— 8.9	100	NW	16	7.2			10n		NW	0.15	3.8	Light snow.	
Pilot Point, Texas																			
Pioche, Nevada	24.16	613.6	29.94	760.5	41	5.0	65	Calm	0	0		0	0			0	0	Clear.	
Pittsburg, Pennsylvania	29.50	749.3	30.34	770.6	39	3.9	73	SW	8	3.6		0	0			Inap.	Inap.	Clear	
Port Huron, Michigan	29.49	749.0	30.17	766.3	37	2.8	63	S	12	5.4			10s		Calm	0.01	0.3	Cloudy	
Portland, Maine	29.87	758.7	29.92	760.0	38	3.3	38	NW	16	7.2		0	0			0.01	0.3	Clear	
Portland, Oregon	29.94	760.5	30.01	762.2	50	10.0	90	Calm	0	0		2cs;hz	0	Calm		0	0	Fair	
Portsmouth, North Carolina					53	11.7	42	NE	23	10.3		0	0			0	0	Clear	
Prescott, Arizona	24.87	631.7	30.23	767.8	36	2.2	90	Calm	0	0		0	0			0	0	Clear.	
Punta Rassa, Florida	30.16	766.1	30.18	766.6	73	22.8	76	N	9	4.0		2c	0	W		0	0	Fair	
Red Bluff, California	29.70	754.4	30.06	763.5	59.5	15.3	88	S	4	1.8		0	5s		Calm	0	0	Fair	
Rio Grande City, Texas	29.92	760.0	30.14	765.5	73	22.8	90	SE	10	4.5			10s		SE	0.02	0.5	Cloudy	
Rochester, New York	29.57	751.1	30.21	767.3	35	1.7	61	W	10	4.5		0	0			0.02	0.5	Clear.	
Roseburg, Oregon	29.47	748.5	30.04	763.0	49.5	9.7	85	Calm	0	0		5cs	0	Calm		0	0	Fair	
Sacramento, California	29.98	761.5	30.06	763.5	54	12.2	80	S	8	3.6			10s		Calm	0	0	Cloudy	
St. Louis, Missouri	29.75	755.6	30.34	770.6	49	9.4	57	S	11	4.9		0	0			0	0	Clear	
St. Paul, Minnesota	29.10	739.1	29.91	759.7	53	11.7	54	W	7	3.1		0	0			0	0	Clear	
Salt Lake City, Utah	25.77	654.6	30.10	764.5	47	8.3	48	SE	3	1.3		0	0			0	0	Clear	
San Antonio, Texas	29.51	749.5	30.21	767.3	62	16.7	88	N	4	1.8			10s		NE	0.01	0.3	Cloudy	
San Diego, California	30.08	764.0	30.16	766.1	52	11.1	93	N	7	3.1		2c	0	Calm		0	0	Fair	
Sandusky, Ohio	29.56	750.8	30.26	768.6	41	5.0	53	SW	16	7.2		5ck	0	W		0	0	Fair	
Sandy Hook, New Jersey	30.22	767.6	30.25	768.3	42	5.6	42	NW	26	11.6		1k	0	W		0	0	Clear	
San Francisco, California	30.10	764.5	30.16	766.1	50	10.0	86	SW	6	2.7			10s		Calm	0	0	Cloudy	
Santa Fé, New Mexico	23.36	593.3	29.90	759.4	40	4.4	82	NE	2	0.9		5k	0	Calm		0	0	Fair	
Savannah, Georgia	30.27	768.8	30.37	771.4	59	15.0	43	NE	16	7.2		0	0			0	0	Clear	
Shreveport, Louisiana	30.11	764.8	30.34	770.6	57	13.9	63	Calm	0	0		8c	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.35	770.9	30.38	771.6	53	11.7	36	N	12	5.4		0	0			0	0	Clear	
Socorro, New Mexico	25.52	648.2	29.59	751.6	46	7.8	69	Calm	0	0		0	0			0.09	2.3	Clear.	
Springfield, Illinois	29.63	752.6	30.32	770.1	50	10.0	52	S	12	5.4		0	0			0	0	Clear	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	40	4.4	31	W	16	7.2		0	5ks		W	0	0	Fair	
Stockton, Texas	27.12	688.8	30.12	765.0	56	13.3	94	SE	5	2.2		0	8ks		SE	0.16	4.1	Threatening	
Thatcher's Island, Mass	29.99	761.7	30.04	763.0	40	4.4	73	NW	28	12.5		0	10k		W	0	0	Cloudy	
Toledo, Ohio	29.50	749.3	30.21	767.3	42	5.6	58	SW	7	3.1			10s		W	0	0	Threatening	
Tucson, Arizona	27.59	700.8	30.14	765.5	61	16.1	44	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.64	752.8	30.13	765.3	50.5	10.3	62	SE	5	2.2		2cs	0	Calm		0	0	Clear	
Uvalde, Texas	29.25	742.9	30.07	763.8	60	15.6	94	NE	4	1.8			10n		NE	0.01	0.3	Light rain	
Vicksburg, Mississippi	30.10	764.5	30.36	771.1	54	12.2	61	E	11	4.9		5c	0	W		0	0	Fair	
Virginia City, Montana	24.39	619.5	29.87	758.7	43	6.1	36	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.64	752.8	30.01	762.2	55	12.8	87	SW	4	1.8		0	0			0	0	Clear.	
Washington, D. C	30.27	768.8	30.39	771.9	43	6.1	51	NW	7	3.1		0	0			0.02	0.5	Clear	
Wickenburg, Arizona					51	10.6	65	NW		1		0	0			0	0	Clear	
Wilmington, North Carolina	30.30	769.6	30.39	771.9	52	11.1	35	N	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	43	6.1	59	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.01	762.2	30.05	763.3	39	3.9	55	NW	32	14.3		10k	0	NW		0	0	Cloudy	
Yankton, Dakota	28.72	729.5	30.00	762.0	57	13.9	47	W	4	1.8		0	0			0	0	Clear	
Yuma, Arizona	29.86	758.4	30.01	762.2	60	15.6	71	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.06	560.3			54.0	12.2	82	Calm	0	0			10n			0.73	18.5	Cloudy	Thomas Herran.
Havana, Cuba, W. I	30.14	765.5	30.19	766.8	79	26.1	74	Calm	0	0		8cs	0	Calm		0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I					76	24.4	79	Calm	0	0		2c	2cs	Calm				Fair	James Gall.
Navassa, W. I	29.95	760.7	30.03	762.7	80	26.7	70	E	12	5.4		0	0			0	0	Clear.	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	78	25.6	91	E			2	5k	8ks	E		0.230	5.84	Cloudy	C. J. Hering.
‖ Puerto Berrio, U.S.Col'bia	29.47	748.5	30.03	762.7	75	23.9	94	Calm			0		10n			0.34	8.6	Raining	Francesco J. Cisneros.
Rivas, Nacaragua								NE					2		NE	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I																			Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.25	768.3	30.30	769.6	5.0	—15.0	88	SW	10	4.5		2c	2s	NE	NE	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,338 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.31	769.9	60	15.6	60	NE	13	5.8			10		SE	0	0			Threatening	
§ Navy Yard, Portsmouth, N. H.	29.97	761.2	36	2.2	71	NW	25	10.7			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.89	759.2	59.5	15.3	68	Calm			0		0			Slight	Slight			Clear.	
§ Adams, Gulfito, Costa Rica	29.98	761.5	78	25.6	91	NNW			1		5		NNW					Fair	
§ Alaska, Callao, Peru *	30.62	777.7	63	17.2	94	NE			1		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.57	758.7	64	17.8	68	Calm			0		0			0	0	Smooth		Clear	
§ Colorado, New York, N. Y.	30.22	767.6	40	4.4	56	NW	13	5.8			2		NW	0	0			Clear.	
§ Constitution, Hampton Roads, Va.			50	10.0	79	N	18	8.0			0							Clear	
§ Enterprise, N. 24° 47′, W. 63° 25′	30.29	769.4	73	22.8	90	E			2		5?		E			Mod'ate	ENE	Cloudy?	
§ Franklin, Navy Yard, Norfolk, Va	30.38	771.6	51	10.6	46	NNE	9.6	4.3			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.11	764.8	51	10.6	100	W	2.4	1.1			9		W	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.90	759.4	39	3.9	100	E			1		10					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	30.08	764.0	76	24.4	86	NW			1		8		W			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.09	764.3	55	12.8	62	WSW			2		2			0	0	Smooth	SW	Hazy	
§ Michigan, Erie, Pa.	30.14	765.5	38	3.3		SW			3		0							Hazy	
§ Monocacy, Shanghai, China	30.03	762.7	63	17.2	82	SSE			1		2		SE	0	0			Clear	
§ New Hampshire, Port Royal, S. C.	29.99	761.7	59	15.0	48	NE	29	13.0			0			0	0			Clear	
Nipsic, N. 34° 27′, W. 10° 24′	29.81	757.2	57	13.9	69	NNE			4		10		NE			Long Mod'ate	N	Raining	
§ Onward, Ancon Bay, Peru †	30.00	762.0	65	18.3	89	Calm			0		10		SW			Long	W	Cloudy	
§ Palos, Shanghai, China	30.05	763.3	54	12.2	??	SE			2		5?							Cloudy?	
§ Passaic, Washington, D. C.	30.38	771.6	44	6.7	76	W			2		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.06	763.5	50	10.0	93	Calm			0		4?					Smooth		Overcast	
§ Powhatan, Annapolis, Md.	30.34	770.6	45	7.2	61	WNW			2		2							Fair	
§ Quinnebaug, Casa Blanca, Marocco	29.77	756.1	61	16.1	71	NW			3		10		NW			Long	NW	Cloudy	
§ Richmond, Shanghai, China	30.05	763.3	65	18.3	54	SSE			3		0			0	0			Clear	
§ Rio Bravo, Brownsville, Texas †	30.32	770.1	73	22.8	100	ENE	3	1.3			8		Calm	0	0			Overcast	
§ Saratoga, N. 37° 20′, W. 54° 15′	30.39	771.9	61	16.1	71	SSW			4		2		S	0	0	Long	NE	Fair	
§ Shenandoah, Montevideo, Uruguay	30.07	763.8	54	12.2	87	NNW			2		2		NNW			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.30	769.6	40	4.4	91	W	12	5.4			0			0	0			Clear.	
Swatara, N. 5° 58′, E. 90° 31′ †	29.76	755.9	81	27.2	100	S			4		8		SW			Mod'ate	SW	Fair.	
§ Trenton. Smyrna, Turkey	29.90	759.4	77	25.0	57	W			3		5			0	0	None		Cloudy	
§ Tuscarora. Mare Island, Cal.	30.15	765.8	51	10.6	93	WSW			1		10		Calm	0	0	Smooth		Cloudy	
§ Vandalia. Navy Yard, Brooklyn, N.Y.	30.19	766.8	49	9.4	78	NW			3		2		NW					Fair	
§ Wabash, Boston, Mass.	30.00	762.0	37	2.8	38	NW	23	10.3			2			0	0			Fair	
§ Wachusett. Montevideo, Uruguay	30.06	763.5	52	11.1	100	N			2		2		S	0	0	Smooth		Hazy	
Wyoming, Constantinople, Turkey	29.98	761.5	52	11.1	86	NNE			3-5		8		NE			Smooth	NE	Cloudy	

NOTE.—The originals generally give the wind-force by the scale 0 to 12; amount of cloudiness by the scales 0 to 4 or 0 to 10; weather occasionally by the Beaufort notation; the distinction between the amount of upper and lower clouds is not made, and apparently, the direction is sometimes given as toward, instead of from; they do not give the humidity. It is believed that the positions given are generally for noon, local time, instead of 7:35 A. M., Washington time. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0,125 in., or 318 mm.

†Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 46° 16′, W. 44° 11′	30.44	773.2	49	9.4		ENE			4		8		ENE			Mod'ate	NE	Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 45° 34′, W. 36° 08′	30.48	774.2	55	12.8	93	ESE			6		9		SE	Heavy	Heavy	High	E	Cloudy	
S. S. Ohio, Henry Morrison, N. 43° 16′, W. 51° 00′ *†	30.38	771.6	42	5.6	91	SSE			2		5		SE	0	0	Mod'ate	SE	Fair	Wm. Shackford.

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; do not distinguish between upper and lower clouds; rain-fall for S.S. Indiana in general terms.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			

NOTE.—The originals give the wind-force by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 42° 51′, W. 51° 26′ *	30.09	764.3				S			3		5		SW	0	0	Smooth	SW	Fair	H. Buckland.

NOTE.—The originals give the wind-force by the scale 0 to 12, occasionally miles per hour.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The originals give the wind-force by the scale 0 to 12; amount of cloudiness by the scale 0 to 4, do not distinguish between upper and lower clouds; duration of rain-fall in hours. The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 34° 35′, E. 141° 16′ †	29.87	758.7	67	19.4	60	W			6		5		W			Mod'ate	W	Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 43° 29′, W. 136° 56′ †	29.72	754.9	48	8.9	??	NE			2		ks		NE	Slight	Slight	Smooth		D. clouds	J. A. Thompson.
S. S. Oceanic, Metcalf																			

NOTE.—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			

NOTE.—The orginals give the wind-force by the scale 0 to to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal. †	30.20	767.1	53	11.7		SW			4		10		Calm					Cloudy	
§ S. S. Idaho, E. Alexander, N. 39° 35′, W. 124° 10′ †	30.09	764.3				SSE			5		8		SE	0.75	19.1	Mod'ate	S	Cloudy	
§ S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	30.13	765.3	45	7.2		NW			2		5		W					Light fog	

NOTE.—The originals give the wind-force by the scale 0 to 12.

†Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin.																			F. A. Johnston.
§S. S. Australia, S. 26° 19′, W. 177° 18′	30.14	765.5				ENE			3		10					Mod'ate	SE	Hazy	Banneman.
§S. S. China, W. B. Seabury, N. 13° 40′, W. 90° 28′ †	29.95	760.7	82	27.8	87	NE			1		2		NE			Mod'ate	SW	Clear	
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of Panama, M. Connolly, N. 7° 10′, W. 81° 40′ †	30.04	763.0	76	24.4		NW			2		2		NW	0	0	Smooth	SW	Fair	R. Thompson & J. Anderson.
§S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W. *†	29.87	758.7	59	15.0		S			3		0			0	0	Smooth		Clear	E. LeSack.
§S. S. City of Tokio, J. Maury, N. 22° 42′, E. 115° 32′ †	30.14	765.5	68	20.0	79	NE			3		8		NE	0	0	Smooth		Cloudy	F. S. Doane.
§S. S. Colima, R. R. Searle.																			
§S. S. Dakota, D. E. Griffiths, N. 46° 55′ W. 124° 47′ †	30.03	762.7	48	8.9	85	S			1		5		S	0	0	Small	S	Hazy	D. E. Griffiths.
§S. S. Granada, J. M. Cavarly																			
§S. S. Zealandia, R. C. Ghest, S. 15° 02′, W. 170° 57′	29.93	760.2				E			3				E			Smooth	SE	Fine	

NOTE—The originals give the barometer as read off; wind-force by the scale 0 to 12; no distinction between upper and lower clouds.

RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.

S. S. Belgenland, S. Jackson.
S. S. Nederland, S. Stokes.

J. Farmer & W. Apetan.

NOTE—The originals give the barometer as read off; no distinction between upper and lower clouds.

WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.

S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry.																			W. S. Waugh. J. Jones.
S. S. Celtic, B. Glendell, N. 49° 23′, W. 27° 15′ *†	30.50	774.7	48	8.9		NNE			5		8		E	4 h'rs	4 h'rs	Mod'ate	ENE	Cloudy	
S. S. Republic, P. J. Irving, N. 42° 39′, W. 55° 46′ *†	30.10	764.5	57	13.9		S			6		8		W			Rough	WSW	Raining	G. W. Ryder.

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

MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.

Schr. Abby K. Bentley.																			Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.	30.02	762.5	43	6.1	51	WNW					2k			0	0			Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 47′, E. 57° 55′ †	30.02	762.5	78	25.6		ENE			2		10		E	0	0	Mod'ate	SW; E	Threatening	B. F. Woodbury.
Brigantine George, W. H. Champlin, N. 27° 20′, W. 66° 00′ †	30.36	771.1	78	25.6		Var.			1		8		Var.	Heavy	Heavy	Mod'ate	SE	Squally	
Hippolyta, N. 42° 14′, W. 44° 35′ *	30.00	762.0	65	18.3		ENE			9		2		E	0	0	Cross	NNE; E	Fair	
Iron Cross, W. Randall.																			W. Randall.
Barque Syringa, E. Lewis.																			E. Lewis.

NOTE.—The originals give the barometer as read off; amount of cloudiness by various scales, and generally without distinguishing between upper and lower.

†Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 2, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.98	761.4				SW			2		8			0.866	22.0	Very cloudy	Dr. Ollive.
Nemours			29.72	754.8	66.9	19.4	57	WNW			1		10			0.925	23.5	Covered	Metge.
Algiers			29.63	752.7	63.0	17.2	75	NE			1		10			0.882	22.4	Covered	Nicolas.
La Calle			29.60	751.8	64.6	18.1	86	ENE			4		7			0.039	1.0	Very cloudy	Fonfrède.
Tunis			29.61	752.1															Jacques.
Sfax			29.69	754.2															Gau.
Saida			29.71	754.6															Bernard.
Tebessa			29.68	753.8	69.6	20.9	39	W			4		4			0.075	1.9	Cloudy	Watrin.
Geriville					60.1	15.6	41	NE			5		6			0	0	Very cloudy	Brugniaux.
Laghouat			29.65	753.2	73.8	23.2	21	S			5		0			0	0	Clear.	Suart.
Biskra			29.58	751.3	78.4	25.8	57	E			1		10			0	0	Covered	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.26	743.1	29.81	757.1	49.1	9.5	92	N			3		10			0.535	13.6	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.24	742.7	30.00	762.1	58.1	14.5	51	ENE	20.1	9.0			5			0	0		Dr. Wierzbicki.
Eperies	29.02	737.1	29.89	759.2	59.7	15.4	54	Calm			0		10s			0	0		Julius Mikolik.
Gratz	28.60	726.4	29.86	758.4	47.1	8.4	85	ENE			1		10			0	0		Andreas Rospini.
Hermannstadt	28.47	723.0	29.87	758.6	61.5	16.4	60	SSE			5		10			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.33	719.6	29.64	752.9	58.6	14.8	72	ENE			3		7			0	0		The Staff.
Lemberg	29.02	737.2	30.00	762.0	56.8	13.8	44	SE			2		6			0	0		Dr. T. Stanecki.
Pola	29.55	750.5	29.66	753.3	53.2	11.8	91	E			4		10			0.315	8.0		I.R. Hydrographic Office.
Szathmar	29.41	747.1	29.87	758.6	68.0	17.2	66	E			3		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.54	750.3	29.82	757.3	61.5	16.4	71	SE			3		10			0	0		Karl Stancel.
Trieste	29.62	752.3	29.72	754.9	53.2	11.8	76	ENE			3		10			0.280	7.1	Raining	P. Busin.
Vienna	29.17	740.8	29.89	759.2	46.0	7.8	92	E			1		10			0.043	1.1		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 2, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.71	754.6	29.80	756.9	59.4	15.2		SSE	19	8.5			2			0.020	0.51	Blue sky	W. Boswell.
Ardrossan																			G.Carrick.
Armagh, (Observatory)	29.74	755.4	29.97	761.2	51.9	11.1		NNE	9	4.0								Blue sky	S. Call.
Bidston (Liverpool Obs)			29.90	759.4	52.8	11.6		NW	14	6.3			1					Blue sky	John Hartnup.
Bolton (Sharples)	29.33	745.0	29.84	757.9	61.0	16.1		WSW					0						Thomas Mackereth.
Bradford, Yorkshire																0	0		J McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	79	26.1		NE			2		6					Gloomy	Pvt.G.Surgener, A.H.O
Cambridge (Observatory)	29.76	755.9	29.85	758.2	62.5	16.9		E			0-1		1					Blue sky	H. Todd.
Cardington			30.15	765.8	61.0	16.1		E			0-1		1					Blue sky	John McLaren.
Chatham (School M. E.)	29.76	755.9	29.89	759.2	53.1	11.7		E			1		3					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.91	759.7	29.96	761.0	51	10.6		NNE			3		0					Blue sky	J. Mac Gowan.
Dover	29.77	756.1	29.80	756 9	53	11.7		NE			5		2					¼ clouded	J. Costello.
Falmouth (Observatory)	29.63	752.6	29.86	758.4	53.1	11.7		SE			1		8					Overcast	The Staff.
Fort Napier, Natal	27.81	706.4	30.02	762.5	67.6	19.8		NE			1		7					Overcast	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.74	755.4	29.97	761.2	84	28.9		W			1		10					D. clouds	
Galway (Queen's College)			29.96	761.0	52	11.1		N			4		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.57	751.1	29.62	752.3	62.0	16.7		SW			2		8					Gloomy	Sr.t. W. Allen.
Glasgow, (Observatory)	29.68	753.9	29.88	758.9	54 6	12.6		WNW			2		4					D. clouds	D. G. Maclean.
Great Yarmouth	29.96	759.4	29.91	759.7	47	8.3		ENE			3		6					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.67	753.6	29.84	757.9	60.4	15.8		ENE			1		1					Blue sky	The Staff, for G.B.Airy.
Guernsey	29.61	752.1	29.83	757.7	53.5	11.9		NNW			2		0					Blue sky	Dr.S.E Hoskins, F.R.S.
Helston	30.03	762.7	30.15	765.8	60	15.6		SW			2	3ck				0	0	Very fine	M. P. Moyle.
Holyhead	29.38	746.2	29.42	747.3	51	10.6		NNE			3		5					D. clouds	John Tilston.
Jersey	29.55	750.6	29.84	757.9	56.9	13.8		ENE			2		1					D. clouds	J. Fisher.
Kew (Observatory)	29.81	757.2	29.85	758.2	58.0	14.4		E	12	5.4								Misty	The Met'g'l Office.
Leicester (Museum)	29.63	752.6	29.88	758.9	59.0	15.0		NE			1		1					Blue sky	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.58	751.3	29.66	753.4	75	23.9		S			2		8					Overcast	A. King.
Nairn	29.71	754.6	29.81	757.2	54	12.2		WSW			3		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.12	765.0	79.0	26.1		SE			1		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.68	753.9	29.87	758.7	63.4	17.4		SSE			2	c	1k		ESE	0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.34	745.2	29.86	758.4	58.4	14.7		NNE			1		4					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.62	752.3	29.88	758.0	58	14.4		E					1					Blue sky	The Staff, for E. J. Stone, Esq
Plymouth	29.78	756.4	29.85	758.2	53.8	12.1		SSE			3		8					D. clouds	John Merrifield.
*Roche's Point	29.87	758.7	29.97	761.2	51	10.6		NNE			4		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.73	755.1	29.89	759.2	49	9.4		NW			1		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.75	755.6	49	9.4		W	30	13.4			2					Showery	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.87	758 7	29.94	760.5	55.8	13.2		NE			2		10					Overcast	Serg't W. H. Lyne.
Sheffield	29.61	752.1	29.89	759.2	58.4	14.7		Calm			0		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.87	758.7	29.90	759.4	59.7	15.4	60	W			1		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.88	758.9	59.1	15.1		W	10	4.5			7					D. clouds	Rev. S. J. Perry.
Strathfield Turgiss	29.62	752.3	29.83	757.7	62.2	16.8		NE			1		0					Blue sky	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.75	755.6	29.80	756.9	63	17.2		N			6		4					D. clouds	W. Newcombe.
Valencia (Observatory)	29.99	761.7	30.02	762.5	53.0	11.7		N	30	13.4			6					Misty	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.96	761.0	30.00	762.0	76.7	24.8	51	Calm	0	0		10	10			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.02	762.5	57.0	13.9	84	W			1		10kn			0	0		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.89	759.2	59.0	15.0		W			2		0			0.04	1.0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.76	755.9	29.95	760.8	76.1	24.5	67	SSE	13.5	6.0		2	6		Var.	0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.94	760.5	30.03	762 7	54.0	12.2	72	NW	8	3.6			5			0.26	6.6	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.88	758.9	48	8.9		NW			4	5	5	NW		0.02	5.1		J. Youngclause.
North Unst, Shetland I's			29.68	753.9				S			6	0	2			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, East London, Cape Colony			D. clouds	Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 21′, W. 16° 13′			Hailing	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.27	667.2	29.99	761.7	68.9	20.5	72	SE			3	2c				0	0	Clear	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.94	760.4	29.98	761.6	55.9	13.3	51	S			2		6						
Fanöe	29.97	761.1	29.98	761.6	50.2	10.1	71	W			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.02	762.5	30.07	763.6	40.1	4.5	79	E			2		2						
Thorshavn (Faröe)	29.34	745.1	29.37	746.0	48.6	9.2	95	SW			5		10						
Vestervig	29.88	759.0	29.98	761.4	48.9	9.4	72	NW			2		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.23	742.5	29.78	756.5	62.6	17	84	E			2		2ks		E	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.74	755.5	29.85	758.2	67.3	19.6	70	NNE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.50	749.4	29.76	755.8	62.1	16.7	24	SE			1		4k			0	0		Klein, Commandant.
Avignon, Normal School	29.57	751.1	29.65	753.1	67.1	19.5	50	N			1		1		SE	0	0	v. slightly cloudy	Giraud, Director.
Bar-sur-Seine	29.16	740.7	29.71	754.6	57.4	14.1	54	SE			1		10		ESE	0	0	Covered	C. Saillard, Director.
Beauvais, Normal School	29.49	749.1	29.75	755.7	61.3	16.3	27	ENE			2		2			0	0	Slightly cld'y	Frère Eugene Marie.*
Besançon, Normal School	28.83	732.2	29.74	755.4	59.5	15.3	54	SW			1		5		N	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.50	749.3	29.70	754.3	67.7	14.3	50	N			1		8		WSW	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.85	732.8	29.77	756.1	59.7	15.4	58	W			1		10k	NW	NW	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.20	741.7	29.74	755.5	55.8	13.2	60	NE			1		5kn		NNE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.58	751.2	29.82	757.4	57.9	14.4	57	NE			1		2k		NE	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.65	753.2	29.69	754.2	54.5	12.5	82	NE			1		0			0	0	Clear	M. Bietrix, Director.
Carcassonne, N. School	29.27	743.4	29.67	753.7	60.1	15.6	61	W			1		10		W	0	0	Covered	September, Director.
Châlons-sur-Marne, N. Sch'	29.41	747.0	29.72	755.0	62.8	17.1	70	WNW			2		5		NE	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.12	739.7	29.65	753.1	60.3	15.7	89	NNE			1		5		W	0.79	20.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.34	719.9	29.69	754.0	54.0	12.2	58	N			1		8			0	0		Alluard, Director.
Commercy, Normal School	28.88	733.4	29.72	754.9	58.3	14.6	44	NE			1		kn	NE	NE	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.56	725.4	29.70	754.4	58.8	14.9	60	SW			2		8		S	0.063	1.6		L. Kina, Director.
Grenoble, Normal School	28.88	733.6	29.63	752.7	61.5	16.4	64	NW			1	ck			N	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.59	751.6	29.80	756.9	58.3	14.6	58	NNW			1		5		SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.46	748.2	29.76	755.9	58.5	14.7	42	E			2		8		E	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.78	731.0	29.68	753.9	58.1	14.5	60	NW			1		5k		NW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.71	754.6	29.82	757.4	60.1	15.6	66	WSW			3		5		W	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.08	738.5	29.68	753.9	61.5	16.4	51	NW			1		5		NW	0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.37	746.1	29.64	752.8	63.7	17.6	57	WSW			1		9		SE	Inap.	Inap.	Sprinkling	E. Stephan, Director.
Mirecourt, Normal School	28.63	727.2	29.66	753.3	55.0	12.8	68	NNE			1		kn		NNE	0	0		Barbier, Director.
Mont-Louis	24.49	622.0	29.72	755.0	41.0	5.5	66	E	3.8	1.7			10			0	0		M. Cave, for Dr. Fines.
Nice	29.63	752.6	29.66	753.4	64.4	18.0	71	SE			3		10	S	SE	0	0	Covered	Capt. Boissière, Director.
Nismes, Normal School	29.41	747.1	29.61	752.2	69.3	20.7	46	SW			1		2		S	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.56	750.7	29.66	753.4	61.7	16.5	43	NW	13.0	5.8			7	NW	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.17	563.2			31.6	— 0.2							10		NNE	0	0	Covered	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.63	727.2	29.67	753.5	63.3	17.4	49	S			1		5ks	S	S	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	24.83	630.7			35.6	2.0	91	WNW			2		10			0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.75	755.7	29.78	756.5	60.8	16.0	61	NE			1		10	NE	NE	0	0	Covered	Lt E. Devante, Director
Rouen, Normal School	29.68	753.8	29.76	756.0	65.8	18.8	27	ENE			1		2		E	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	29.76	756.0	29.79	756.7	55.9	13.3	74	NNE			3		0			0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.58	751.3	29.74	755.5	60.8	16.0	37	NE			1		8		ENE	0	0		E. Renou, Director.
Tarbes, Normal School	28.64	727.4	29.70	754.4	57.2	14	67	W											T. Huguet, Director
Toulouse, Observatory	29.03	737.4	29.74	755.5	57.7	14.3	47	NW			1		5	W		0	0	Cloudy	B. Bailland, Dir.
Tours	29.57	751.1	29.77	756.1	59.7	15.4	52	NE			1		8		E	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.25	743.0	29.74	755.5	61.5	16.4	31	E			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	28.98	736.1	29.65	753.0	60.4	15.8	71	NW			1		5		N	0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	74.1	23.4										1.77	45.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.47	748.4			61.3	16.3	35	NE			1		9		SE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	30.04	763.0	30.07	763.6	59.7	15.4	79	SE	13.0	5.8		10ck		WNW		0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.92	34.6	29.78	756.3	57.2	14.0	51	E			6		8n	·ESE		0.004	0.1	Light rain	Prof. Dr. Hoh.
Berlin	29.72	754.8	29.89	759.1	67.5	19.7	39	E			1		3			0	0		Prof. Dr. Arndt.
Breslau	29.43	747.4	29.95	760.8	59.2	15.1	37	E			4		2			0	0		Royal University Obs'y
Carlsruhe	29.31	744.4	29.73	755.1	55.8	13.2	71	NE			2		10	NE		0.012	0.3		Albert Senz.
Cassel	29.19	741.3	29.79	756.6	60.4	15.8	43	ENE			1		5	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.48	748.9	29.85	758.1	63.1	17.3	32	ENE			3		9			0	0		Physical Society.
Friedrichshafen	28.28	718.4	29.70	754.3	56.1	13.4	63	SW			3		9	SW		0.012	0.3		Chief Telegrapher Wilhelm.
Hamburg	29.84	758.0	29.92	759.9	60.6	15.9	48	SE			3		2			0	0		Dr. Reinhold Kleeman.
Kiel	29.94	760.5	29.96	760.9	52.0	11.1	68	NE			2		2			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.02	762.6	30.11	764.7	60.4	15.8	34	SW			2		4	SW		0	0		Prof. E. Luther.
Köslin			30.00	761.9	61.9	16.6		S			2		2			0	0		H. Müller.
Leipsic Observatory	29.42	747.2	29.83	757.7	62.6	17.0	38	E			3		6			0	0		Prof. Dr. Bruhns, Privy Counselor.
Magdeburg	29.65	753.0	29.87	758.7	63.9	17.7	37	E			4		1cs	E		0	0		Dr. Assmann.
Memel	30.06	763.5	30.11	764.7	54.3	12.4	59	W			1		4s						Reinbrecht & Issermann.
Munich	27.91	708.8	29.75	755.6	52.0	11.1	64	Calm			0		9	E		0	0		Dr. C. Lang.
Neufahrwasser	30.06	763.5	30.08	763.9	60.8	16.0	35	SE			2		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.22	742.2	29.74	755.4	57.2	14.0	55	NE			1		10			0.016	0.4		Reallehrer Dicknether.
Posen	29.71	754.5	29.99	761.8	58.8	14.9	27	SE			8		0			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.21	741.9	29.75	755.6	56.8	13.8	72	NE			1		10	E		0.015	0.38		Imp. University Observatory.
Stuttgart	28.80	731.5	29.69	754.0	53.1	11.7	68	N					10			0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.33	719.6	29.90	759.5	55.2	12.9	73	ENE	4.0	1.8			10		E	0	0		Reallehrer J. Hopfner.
Wustrow	29.96	760.9	29.98	761.5	54.1	12.3	65	N			4		2s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.50	749.2	29.87	758.8	77.7	25.4		SW			2.0		0					Clear.	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.55	750.6	29.60	751.9	85.3	29.6	74	SW	10	4.5			0			0	0	Blue sky	
Deesa	29.15	740.4	29.60	751.7	106.8	41.6	13	WSW	10.5	4.7			0			0	0	Misty	
Bombay	29.75	755.6	29.78	756.5	85.7	29.8	69	SW	14	6.3			0			0	0	Blue sky	
Poona (Yarrowda)	27.9	709.3	29.74	755.3	90.1	32.3	5	W	18	8.0			0			0	0	Blue sky	
Belgaum	27.26	692.5	29.76	756.0	82.6	28.1	59	W	10	4.5			0			0	0	Misty	
Lahore	28.84	732.6	29.55	750.6	100.2	37.9	19	Calm	2.6	1.2			0			0	0	Blue sky	
Roorkee	28.64	727.4	29.51	749.5	91.8	33.2	29	SE	8	3.6			07			0.18	4.6	Hailing?	
Agra	29.00	736.6	29.54	750.2	101.6	38.7	25	N	8.2	3.7			0			0	0		
Nagpur	28.57	725.6	29.56	750.8	101.6	38.7	9	SW	3.2	1.4			6	W		0	0	D. clouds	
Jubbulpore	28.25	717.5	29.55	750.6	101.7	38.7	9	NW	3.7	1.6			6			0	0	D. clouds	
Lucknow	29.23	742.3	29.59	751.6	93.5	34.2	49	ENE	7.3	3.3			0			0	0	Blue sky	
Allahabad	29.28	743.7	29.58	751.4	96.1	35.6	46	SE	5.1	2.3			5			0	0	D. clouds	
Patna	29.47	748.6	29.65	753.1	90.7	32.6	43	E	2.2	1.0			2	E	E	0	0		
Hazaribagh	27.66	702.6	29.63	752.6	85.8	29.9	28	SSE	9.6	4.3			9			0	0	Threatening	
Cuttack	29.60	751.8	29.68	753.9	87.1	30.6	60	SSW	3.9	1.7			6			0.82	20.8	D. clouds	
Calcutta (Alipore)	29.67	753.7	29.70	754.2	87.0	30.6	58	SE	6.0	2.7			4		SE	0	0	D. clouds	
Goalpara	29.32	744.8	29.73	755.0	82.5	28.1	63	NE	5.7	2.6			2		W	0	0	D. clouds	
Chittagong	29.67	753.6	29.76	755.8	80.9	27.2	64	E	3.6	1.6			4			0	0		
Sibsagar	29.38	746.3	29.72	754.8	82.3	27.9	74	NE	2.2	1.0			2			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.35	745.5	29.76	755.8	53.6	12.0	69	NE	6.3	2.8			10			0.071	1.8		Prof. Giovanni Clodig.
Milan	29.19	741.5	29.71	754.7	55.0	12.8	80	SSE	8.1	3.6			10	NE		0.224	5.7		Prof. Schiaparelli.
Padua	29.62	752.4	29.73	755.1	54.0	12.2	82	NE	6.9	3.1			10	E		0.161	4.1		Prof. Dott. Lorenzoni.
Moncalieri	28.80	731.6	29.71	754.5	56.1	13.4	75	SSE	5.6	2.5			8	N		0.130	3.3		Prof. P. F. Denza.
Genoa	29.47	748.6	29.66	753.4	57.4	14.1	66	N	4.9	2.2			10	N		0.004	0.1		Prof. G. M. Garibaldi.
Mondovi	27.80	706.2	29.71	754.5	48.6	9.2	85	W			4		10			0.409	10.4		Prof. D. C. Bruno.
Pesaro	29.60	751.7	29.64	752.9	57.9	14.4	78	NW	7.4	3.3			9	S		0.063	1.6		Prof. Luigi Guidi.
Florence	29.40	746.7	29.65	753.1	59.0	15.0	81	NE			2		10	E		0.516	13.1		Cav. F. Meucci.
Leghorn	29.55	750.5	29.63	752.6	58.1	14.5	83	ENE	9.8	4.4			10			0.276	7.0		Prof. P. Monte.
Rome	29.48	748.9	29.66	753.3	70.0	21.1	62	S	11.2	5.0			10			0.280	7.1		Prof. P. S. Ferrari
Lecce	29.50	749.4	29.75	755.7	71.4	21.9	60	WSW	18.6	8.3			1	SW		0	0		Prof. C. De Giorgi
Cosenza	28.84	732.5	29.72	754.8	75.9	24.4	72	NW	0	0			2			0.051	1.3		Prof. D. Conti.
Cagliari	29.41	747.0	29.60	751.8	65.7	18.7	72	S			6		10	SW		0.138	3.5		Prof. A. Pacinotti.
Palermo	29.44	747.7	29.69	754.0	69.1	20.6	60	E	6.9	3.1			10			0.186	4.7		Prof. G. Ciacciatore.
Syracuse	29.69	754.0	29.73	755.1	69.8	21.0	76	SE	8.7	3.9			10	SSW		0	0		Prof. V. G. Guliano.
SUB-SERIES																			
Naples, S. R.	29.17	740.8	29.67	753.7	66.7	19.3	73	SSW	4.9	2.2			10	SW		0.134	3.4		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y	30.18	766.6	30.19	766.8	59.6	15.3	75	WSW	2.2	0.9			10s			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	30.01	762.2	30.22	767.6	58.0	14.4	81	Calm	0	0			10s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory.	30.18	766.6	30.24	768.1	55.6	13.1	81	SSW	3.0	1.3		0	0			0	0	Clear	The Staff.
Wakayama	30.15	765.8	30.20	767.1	60.9	16.1	72	SW	0.9	0.4			10s			0	0	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.09	637.3	30.18	766.5	51.8	11.0	35	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.73	602.8			60.4	15.8	75	Calm	0	0		1	1	Calm	SW	0	0	Clear	Vicente Fernandez.
Leon	24.47	621.5	30.09	764.2	63.1	17.3	78	N			2	0	0			0.02	0.6	Hazy	Prof. M. Leal.
Mazatlan	29.66	753.3	29.92	759.9	71.0	21.7	85	SE			1	1ck	0	SE		0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.10	586.7	30.04	763.0	57.9	14.4	68	W	3.1	1.4		1c	2k	W		0	0	Hazy	The Staff
Morelia	24.04	610.5			67.3	19.6	62	S			3	2c	2k	SE	E	0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.99	609.4	29.97	761.3	57.7	14.3	53	W			1	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.47	596.0	30.25	768.3	52.7	11.5	44	Calm	0	0		0	0			0.08	0.8	Clear	Prof. P. Spina.
San Luis Potosi	24.25	615.9	30.15	765.9	63.0	17.2	75	E			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.97	761.1	29.98	761.4	74.8	23.8	89	SW			1	2	0	W		0	0	Clear	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft.

NETHERLANDS SERIES.

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

Flushing	29.82	757.5	29.83	757.5	60.3	15.7		NE			4					0	0		
Groningen	29.86	758.4	29.91	759.8	62.4	16.9		E								0	0		
Helder	29.88	759.0	29.88	759.0	51.4	10.8		NE			4					0	0		
Hellevoetsluis...?	29.84	757.8	29.84	757.8	59.9	15.5	53	NE			3					0	0		
Utrecht	29.80	756.8	29.84	758.0	62.1	16.7	43	NNE			3		2			0	0	L'tly cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.87	758.6	29.92	760.0	57.9	14.4	53	SSW	23.3	10.4			0			0	0		
Brönno	29.83	757.6	29.87	758.6	43.5	6.4	86	SW	18	8			10			0.354	9.0	Raining	
Christiania	29.73	755.1	29.87	758.8	64.6	18.1	31	SW	2	1			2			0	0		
Tromsö	29.64	752.8	29.69	754.2	39.6	4.2	84	SW	9	4			10			0.390	9.9		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.17	766.2	30.38	771.6	63.0	17.2	79	NNW			4		4			0	0		Dr. J. A. Sampaio.
Campo Major	28.71	729.3	29.70	754.3	62.2	16.8	58	NNE	4.9	2.2			8			0.079	2.0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.01	762.2	30.10	764.4	62.2	16.8	51	SW	3.1	1.4			9			6	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.39	746.4	29.74	755.5	59.9	15.5	65	NNW	19.9	8.9			3			0.138	3.5		The Staff.
Ponta Delgada (Azores)	30.23	767.7	30.30	769.5	61.9	16.6	80	NE	15.0	6.7			3			0.016	0.4		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. S. Nicolam, Benguela			29.92	759.9	76.5	23.7		SW			2		1		SW	2	SW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.28	769.0	75.6	24.2		NE			2		3		NE	1	NE		D. clouds	Antonio Sarmento, Q.M.
Sá da Bandeira																				F. Teixeira da Silva, Coud't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.93	760.1	79.0	26.1		NNW			3		2		NW	1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.08	764.0	77.2	25.1		NE			3		10		NE	2	N	3	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.76	756.0	29.78	756.5	34.2	1.2	84	W	4	2			7ks						Capt. Sseltwerstow.
Astrakhan	30.17	766.2	30.08	764.1	63.9	17.7	45	E	18	8			2cs;s			Blank	Blank	Light clouds	Capt. Wisganow.
Barnaul	29.39	746.6	29.89	759.2	43.9	6.6	36	NE	9	4			9					Light clouds	Meteorological Obs.
Dorpat	29.89	759.2	30.14	765.5	49.6	9.8	39	WSW	7	3		7ck							Prof. Dr. Weihrauch.
Ekaterinburg	28.73	729.8	29.71	754.7	34.7	1.5	62	W	27	12			10					Light snow.	Meteorological Obs.
Irkutsk																			
Kasan	29.58	751.3	29.85	758.3	43.3	6.3	33	WSW	16	7			4						Physical Cabinet.
Kertch	30.03	762.8	30.05	763.3	56.5	13.6	67	NE	4	2			0						Lagorio.
Kieff	29.46	748.2	30.10	764.5	52.0	11.1	43	ESE	2	1			7cks						Physical Cabinet.
Krotkowo*	29.57	751.1	29.66	753.4	38.8	3.8	95	NW	9	4			7						Cand. Fatjanow.
Lugan	29.92	760.0	30.12	765.1	67.3	19.6	28	E	4	2			6						Meteorological Obs.
Moscow	29.54	750.4	30.11	764.7	42.8	6.0	40	N	7.8	3.5			3ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.08	764.0	30.15	765.8	58.6	14.8	52	S	4	2			10cs						Kurdakof.
Nikolaievsk, on the Amoor	29.93	760.1	30.01	762.3	39.4	4.1	55	Calm	0	0			0						
Nukuss	29.85	758.2	30.08	763.9	77.7	25.4	31	NNE	9	4		2c							
Orenburg																			
Pekin (China)	29.70	754.4	29.84	758.0	72.9	22.7	10	NW	4	2			0						
St. Petersburg	30.02	762.5	30.04	762.9	43.2	6.2	59	WNW	18	8			9kn					Thunder	Physical Observatory.
Tashkend	28.53	724.6	30.04	763.0	75.7	24.3	47	Calm	0	0			2						Central Physical Obs.
Tiflis	28.58	725.8	29.94	760.4	72.9	22.7	40	SSE	4	2			10s			Blank	Blank		Teich, A. M.
Vladivostock																			Physical Observatory.
Warsaw	29.64	752.9	30.07	763.6	56.3	13.5	35	SE	18	8			1k						
Wilna	29.73	755.2	30.15	765.9	53.6	12.0	48	SE	2	1			1						Astronomical Obs.
Yeniseisk	30.04	762.9	30.34	770.5	35.2	1.8	41	Calm	0	0			0					Light clouds	Astronomical Obs.
																			Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.69	754.1	29.79	756.7	63.9	17.7	48	S	3.8	1.72			4			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.73	755.1	29.79	756.6	50.2	10.1	88	N	1.6	0.72			10			0.012	0.3	Raining	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.77	680.0			51.8	11.0	54	NE	6.9	3.10			6			0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.46	697.5	29.64	752.9	61.0	16.1	54	E	5.2	2.33		0	6			0.063	1.6	Cloudy	The Staff.
Murcia, Met. Obs'y	29.51	749.6	29.66	753.4	61.7	16.5	74	E	2.1	0.94		5	5	W		0.101	2.57	Covered.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.63	752.7	29.74	755.3	55.2	12.9	55	NE	16.8	7.5			6			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.04	763.0	30.10	764.6	77.8	25.4	70	E	6.3	2.8		2c	1k			0	0	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.91	759.6	29.96	760.9	84.1	28.9	73	E	2.2	1.0						0	0	Fair	Federigo Faura, S. J.
San Fernando, Naval Obs'y	29.63	752.6	29.73	755.1	63.0	17.2	75	WNW	11.7	5.3		0	10		W	0	0		Capt. C. Pulazon, R. N., Dir. Enriquez Sados, Chief Eng'r.
San Juan de Porto Rico, W. I.	30.00	761.9	30.09	764.2	78.1	25.6	87	S	0	0		6cks	5k	S	S	0.197	5.00	Cloudy	

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.83	757.6	29.87	758.6	41.0	5.0		S			2		0			0	0		
Umea	29.84	757.8	29.89	759.1	53.6	12.0	56	SW			2		10			0	0		
Hernosand	29.87	758.8	29.93	760.1	53.2	11.8	51	S			4		8			0	0		
Stockholm	29.80	757.0	29.98	761.5	56.5	13.6	44	SSE			2		2			0	0		
Wisby	29.93	760 3	29.99	761.8	57.9	14.4	53	SW			4		3			0.004	0.1		
Sub-Series.																			
Upsala	29.85	758.3	29.94	760.5	58.1	14.5	50	S	10.3	4.6			6		WNW	0	0		Nils Ekholm.

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

Swedish Naval Series.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 44° 52′, W. 22° 31′			30.40	772.2	53.2	11.8	67	NE			7		5						D. clouds	J. P. Påhlson.
H. M. Corvette Balder, N. 53° 08′, E. 2° 57′			29.89	759.2	47.8	8.8	92	ENE			3		10						Overcast	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Stations.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Geneva	28.26	717.9	29.69	754.1	54.5	12.5	53	N			2		2			0	0	Cloudy.	The Observatory.
Zurich																			The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6 6 mm.; Thermometer, —2.0 Cent. Relative Humidity, —5 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Constantinople			29.98	761.6	54.0	12.2	79	N	14	6.5			10		N	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.85	758.1	78.3	25.7		SW			6		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.70	754.4	69.4	20.8	73	NNE			4		8cs			0.15	3.8		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Bathurst, N. B.																			Hon. J. Ferguson.
Chatham, N. B.	29.99	761.7	30.05	763.3	30.1	— 1.1	94	SW	3	1.3			10n			0.02	0.5	Light snow.	G. A. Blair.
Charlottetown, P. E. Island	30.05	763.3	30.09	764.3	36.1	2.3	71	SW	10	4.5			10s			0.015	0.38	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.94	760.5	46.2	7.9	78	W			1		9s			0	0	Clearing	James Smith, M. A.
Dalhousie, N. B.	29.88	758.9	30.05	763.3	30.5	— 0.8		N			1	2cs	0			0	0	Fair	H. A. Johnson.
Father Point, Quebec	29.97	761.2	29.99	761.7	29.4	— 1.4	89	SW	4	1.8		0	4s			0	0	Fair	J. McWilliams.
Fredericton, N. B.	29.96	761.0	30.03	762.7	41.3	5.2	61	SW	6	2.7			9s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.84	732.5	29.65	753.1	50.5	10.3	75	W	5	2.2		1c	0	W		0	0	Fair	James Stewart.
Granton, Ontario	28.77	730.7	29.86	758.4	53.0	11.7	80	W			1	6cs	0	W		0	0	Fair	James Grant.
Halifax, N. S.	30.04	763.0	30.18	766.6	43.7	6.5	49	SW	14	6.3			10ks			0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.55	750.6	29.91	759.7	57.7	14.3	75	S			1	0	0			0.14	3.6	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.59	751.6	29.93	760.2	42.5	6.8	89	I	2	0.9			10n			0.12	3.0	Light rain	S. Woods, M. A.
Little Glace Bay, N. S.																			C. H. Rigby.
Montreal, Quebec	29.78	756.4	29.98	761.5	42.9	6.1	76	W	8	3.6		7k	3ks	W		0 01	0.3	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.86	758.4	29.90	759.4	24.8	— 4.0	79	NE			2		10n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.20	741.7	29.90	759.4	42.0	5.6	100	Calm	0	0			10s			0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.10	741.4	29.88	758.9	45.0	7.2	92	E	6	2.7		2ck	0	NW		0.03	0.8	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.17	740.9	29.92	760.0	47.7	8.7	92	E			1		10ks			0	0	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.24	742.7	29.93	760.2	46.9	8.3	85	SW	12	5.4			10n			0.02	0.5	Threatening	H. Morgan.
Port Stanley, Ontario	29.28	743.7	29.92	760.0	47.9	8.8	79	W	20	8.9			10ks			0.01	0.3	Cloudy	M. Payne.
Quebec, Quebec	29.65	753.1	29.98	761.5	34.0	1.1	89	W			1	0	2s				0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.44	747.8	29.91	759.7	37.5	3.1	67	Calm	0	0		0	0			0	0	Cloudy?	W. H. McIntyre.
St. John, N. B.	29.87	758.7	30.04	763.0	38.0	3.3	95	SW	13	5.8			10ks				0	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.15	740.4	29.85	758.2	55.1	12.8	86	S	10	4.5		1cs	0			0.26	6.6	Clear	K. Stewart.
Stratford, Ontario	28.62	726.9	29.90	759.4	50.0	10.0	77	SW	15	6.7		0	0			0.216	0.548	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.12	765.0	30.16	766.1	45.0	7.2	47	SW	13	5.8		0	0			0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.53	750.0	29.92	760.0	45.9	7.7	94	S	3	1.3			8ks			0.26	6.6	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.84	732.5	29.90	759.4	51.1	10.6	76	S	10	4.5		0	8ks			0.14	3.6	Cloudy	Professor Wolverton.
Yarmouth, N. S.	30.03	762.7	30.10	764.5	41.6	5.3	83	SW	16	7.2		5k	6s	W		0	0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.00	762.0	30.26	768.6	37	2.8	81	W				10k	10s			0.15	3.8	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime.			30.12	765.0	46.4	8.0		NW			3					0	0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.96	761.0	30.04	763.0	51	10.6	59	S	4	1.8			10n		Calm	Inap.	Inap.	Light rain	
Alpena, Michigan	29.19	741.4	29.82	757.4	48	8.9	85	Calm	0	0		5c	0	Calm		0.15	3.8	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.09	738.9	30.25	768.3	53	11.7	66	E	7	3.1		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.20	767.1	30.22	767.6	54	12.2	80	SW	14	6.3		Haze	0	Calm		0	0	Clear	
Augusta, Georgia	30.35	765.8	30.35	770.9	55	12.8	74	Calm	0	0		8cs	0	SW		0	0	Fair	
Baltimore, Maryland	30.17	766.3	30.22	767.6	53	11.7	54	SW	9	4.0		2c	Haze	W	Calm	0	0	Clear	
Barnegat, New Jersey	30.15	765.8	30.17	766.3	60	15.6	60	SW	16	7.2		2c	Haze	Calm	Calm	0	0	Clear	
Bismarck, Dakota	28.00	711.2	29.86	758.4	54	12.2	61	SW	1	0.4		0	0			0	0	Clear	
Boerne, Texas	28.60	726.4	29.97	761.2	55	12.8	100	N	4	1.8			10s		NE	0.74	18.8	Cloudy	
Boise City, Idaho	27.16	689.8	30.12	765.0	56	13.3	75	SE	4	1.8			10n		Calm	0.13	3.3	Light rain	
Boston, Massachusetts	29.93	760.2	30.09	764.3	51	10.6	53	SW	12	5.4			10s		Calm	0	0	Cloudy	
Brackettville, Texas	28.88	733.5	29.93	760.2	60	15.6	94	N	4	1.8		0	8s		NE	0.08	2.0	Clearing	
Breckenridge, Minnesota	28.80	731.5	29.77	756.1	53	11.7	61	SW	20	8.9		0	0			0	0	Clear	
Brownsville, Texas	29.94	760.5	29.98	761.5	79	26.1	87	SE	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.22	742.2	29.92	760.0	47	8.3	77	SW	11	4.9			10s		SW	0.21	5.3	Cloudy	
Burkes, Arizona					57	13.9	47	Calm			0	2c	2s	Calm	W	0	0	Fair	
Burlington, Vermont	29.71	754.6	30.00	762.0	46	7.8	69	S	3	1.3			10ks		SW	Inap.	Inap.	Cloudy	
Cairo, Illinois	29.84	757.9	30.24	768.1	57	13.9	75	S	4	1.8		5c	0	W		0	0	Fair	
Campo, California	27.47	697.7	30.04	763.0	44	6.7	92	SW	1	0.4			Fog		Calm	0	0	Foggy	
Cape Hatteras, N. Carolina	30.34	770.6	30.35	770.9	63	17.2	57	SE	7	3.1		0	0			0	0	Clear	
Cape Henry, Virginia	30.28	769.1	30.30	769.6	54	12.2	67	SW	16	7.2		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.33	770.4	30.34	770.6	64	17.8	63	SE	12	5.4		5c	0	Calm		0	0	Fair	
Cape May, New Jersey	30.18	766.6	30.20	767.1	56	13.3	69	SW	23	10.3		0	0			0	0	Clear	
Castroville, Texas	29.25	742.9	29.95	760.7	58	14.4	94	Calm	0	0			10s		W	2.06	52.3	Cloudy	
Cedar Keys, Florida	30.16	766.1	30.19	766.8	66	18.9	84	NE	10	4.5			10ks		NE	0	0	Cloudy	
Charleston, South Carolina	30.24	768.1	30.30	769.6	62	16.7	67	NE	4	1.8		5cs	0	Calm		0	0	Fair	
Charlotte, North Carolina	29.44	747.8	30.27	768.8	53	11.7	67	SW	1	0.4		5c	Sm'e	Calm	Calm	0	0	Fair	
Chattanooga, Tennessee	29.47	748.5	30.09	764.3	51	10.6	86	Calm	0	0		5c;cs	Sm'e	W;Calm	Calm	0	0	Fair	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	37	2.8	31	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.22	742.2	29.89	759.2	58	14.4	53	SW	15	6.7		5ck	0	NW		0	0	Fair	
Chincoteague, Virginia	30.25	768.3	30.27	768.8	55	12.8	86	SW	30	13.4		0	0			0	0	Clear	
Cincinnati, Ohio	29.54	750.3	30.19	766.8	54	12.2	61	SE	4	1.8		0	0			0	0	Clear	
Cleveland, Ohio	29.29	744.0	30.00	762.0	59	15.0	38	SW	10	4.5		5ck	0	W		0.02	0.5	Fair	
Coleman City, Texas	28.26	717.8	29.91	759.7	59	15.0	94	Calm	0	0			10s		Calm	0.50	12.7	Cloudy	
Columbus, Ohio	29.28	743.7	30.12	765.0	51	10.6	65	S	4	1.8		0	Fog		Calm	0	0	Clear	
Concho, Texas	28.12	714.2	29.79	756.7	57	13.9	87	S	4	1.8			10s		SW	0.01	0.3	Cloudy	
Corsicana, Texas	29.65	753.1	30.12	765.0	55	12.8	100	NE	4	1.8			10n		Calm	0.40	10.2	Light rain	
Davenport, Iowa	29.30	744.2	29.92	760.0	60	15.6	55	SW	10	4.5		1k	0	SW		0	0	Clear	
Dayton, Washington T'y					52	11.1	86	SW			1		10n		Calm	0.09	2.3	Light rain	
Deadwood, Dakota	25.35	643.9			46	7.8	45	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.94	735.1	30.11	764.8	55	12.8	81	SE	4	1.8			10s		SE	0	0	Cloudy	
Delaware Breakwater, Del.	30.20	767.1	30.23	767.9	56	13.3	57	SW	29	13.0		0	0			0	0	Clear	
Denison, Texas	29.31	744.5	30.08	764.0	57	13.9	81	SE	5	2.2			10ks		W	0.03	0.8	Cloudy	
Denver, Colorado	24.84	630.9	30.06	763.5	45	7.2	46	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.06	738.1	29.91	759.7	61	16.1	50	W	8	3.6		0	0			0	0	Clear	
Detroit, Michigan	29.25	742.9	29.91	759.7	52	11.1	60	SW	9	4.0		10cs	0	Calm		Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.45	697.2	29.72	754.9	54	12.2	74	SW	4	1.8		8ck	0	W		0	0	Clearing	
Dubuque, Iowa	29.20	741.7	29.88	758.9	59	15.0	59	SW	9	4.0		0	Haze		E	0	0	Clear	
Duluth, Minnesota	29.10	739.1	29.77	756.1	45	7.2	84	Calm	0	0		3c;ck	0	Calm;W		0	0	Fair	
Eagle Pass, Texas	29.28	743.7	30.01	762.2	60	15.6	100	N	4	1.8			10s		Calm	1.56	39.6	Cloudy	
Eastport, Maine	29.94	760.5	30.00	762.0	45	7.2	68	SW	8	3.6		8k	Haze	SW	Calm	0	0	Fair	
Edinburg, Texas					74	23.3	90	Calm			0		10s		S	0	0	Cloudy	
El Paso, Texas																			
Erie, Pennsylvania	29.25	742.9	29.95	760.7	56	13.3	51	SW	15	6.7			10s		SW	0	0	Cloudy	
Escanaba, Michigan	29.19	741.4	29.84	757.9	44	6.7	68	N	4	1.8		2c	0	W		Inap.	Inap.	Fair	
Florence, Arizona	28.46	722.9	30.06	763.5	60	15.6	60	N	2	0.9		8c	0	Calm		0	0	Fair	
Fort Apache, New Mexico	25.09	637.3	30.54	775.7	39	3.9	73	E	3	1.3		0	1s		Calm	0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.75	704.8	29.55	750.6	43	8.9	62	S	6	2.7		1c	0	Calm		0	0	Clear	
Fort Custer, Montana	26.72	678.7			45	7.2	46	SW	10	4.5		0	0			0	0	Clear	
Fort Davis, Texas	25.27	641.8	30.23	767.8	52	11.1	86	Calm	0	0		0	0			0	0	Clear	
Fort Elliot, Texas	27.00	685.8	29.19	741.4	57	13.9	63	SE	6	2.7			10s		SE	0.13	3.2	Cloudy	
Fort Gibson, Indian Ter.	29.57	751.1	30.11	764.8	58	14.4	58	S	2	0.9		5cs	0	S		0	0	Fair	
Fort Grant, Arizona	25.23	640.8	30.03	762.7	57	13.9	12	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.82	732.0	30.10	764.5	57	13.9	94	Calm	0	0			10s		Calm	0.47	11.9	Cloudy	
Fort Keogh, Montana	27.13	689.1			44	6.7	67	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.78	705.6	29.69	754.1	55	12.8	93	Calm	0	0			Fog		Calm	0	0	Foggy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.87	733.3	29.98	761.5	56	13.3	94	S	10	4.5			10n		Calm	0.30	7.6	Light rain	
Fort Stevenson, Dakota	27.94	709.7			48	8.9	70	Calm	0	0		0	0			0	0	Clear	
Fort Verde, Arizona					51	10.6	59	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.22	716.8	29.77	756.1	55	12.8	87	NE	6	2.7			10s		Calm	0	0	Cloudy	
Galveston, Texas	29.98	761.5	30.02	762.5	69	20.6	95	SE	9	4.0		5ck	5ks	Calm	SE	1.74	44.2	Cloudy	
Grand Haven, Michigan	29.22	742.2	29.86	758.4	54	12.2	67	S	10	4.5		0	0			0	0	Clear	
Helena, Montana					44	6.7	16	S	4	1.8		5cs	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.32	744.7	30.10	764.5	57	13.9	58	S	4	1.8		0	0			0	0	Clear	
Indianola, Texas	30.01	762.2	30.04	763.0	67	19.4	89	NE	14	6.3			10s		NE	1.00	25.4	Clearing	
Jacksboro, Texas	28.95	735.3	30.06	763.5	65	18.3	94	S	4	1.8			10s		S	0	0	Cloudy	
Jacksonville, Florida	30.20	767.1	30.23	767.8	68	20.0	84	NE	6	2.7			10s		NE	0	0	Cloudy	
Keokuk, Iowa	29.36	745.7	29.96	761.0	60	15.6	55	W	17	7.6		5cs;k	0	W		0	0	Fair	
Key West, Florida	30.08	764.0	30.11	764.8	78	25.6	78	E	8	3.6		1k	0	E		0	0	Clear	
Kittyhawk, North Carolina	30.32	770.1	30.35	770.9	58	14.4	70	SW	10	4.5		0	0			0	0	Clear	
Knoxville, Tennessee	29.28	743.7	30.31	769.9	48	8.9	85	NE	1	0.4		10cs	0	SW		0	0	Cloudy	
La Crosse, Wisconsin	29.09	738.9	29.80	756.9	55	12.8	68	S	2	0.9		0	0			0	0	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	51	10.6	65	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.61	752.1	29.95	760.7	61	16.1	94	N	4	1.8			10s		N	0.19	4.8	Cloudy	
Leavenworth, Kansas	29.21	741.9	30.04	763.0	56	13.3	69	W	3	1.3		1cs	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.84	757.9	30.16	766.1	56	13.3	94	SE	1	0.4			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.76	755.9	30.10	764.5	54	12.2	93	SW	1	0.4			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.63	752.6	30.19	766.8	58	14.4	48	S	3	1.3		2c	0	Calm		0	0	Clear	
Lynchburg, Virginia	29.57	751.1	30.23	768.3	60	15.6	44	S	1	0.4		0	0			0	0	Clear	
Madison, Wisconsin	28.84	732.5	29.81	757.9	57	13.9	58	SW	12	5.4		0	0			0	0	Clear	
Marquette, Michigan	29.12	739.6	29.82	757.4	44	6.7	68	NW	1	0.4		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.41	721.6	30.16	766.1	55	12.8	93	Calm	0	0			10s		Calm	0.66	16.8	Cloudy	
Memphis, Tennessee	29.82	757.4	30.16	766.1	54	12.2	74	SE	2	0.9			10s		Calm	0	0	Cloudy	
Milwaukee, Wisconsin	29.09	738.9	29.80	756.9	59	15.0	48	SW	24	10.7		1k	0	W		0	0	Clear	
Mobile, Alabama	30.10	764.5	30.14	765.5	63	17.2	72	NE	4	1.8			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.98	761.5	30.22	767.6	60	15.6	65	E	10	4.5		2k	8s	W	W	0	0	Cloudy	
Morgantown, West Virginia	29.17	740.9	30.15	765.8	62	16.7	41	SW	11	4.9		0	0			0	0	Clear	
Mt. Washington, N. H.	23.60	599.4	29.96	761.0	20	— 6.7	100	NW	54	24.1			Fog		NW	0.10	2.5	Foggy	
Nashville, Tennessee	29.72	754.9	30.26	768.6	54	12.2	67	E	1	0.4		5cs	Haze	Calm	Calm	0	0	Fair	
New Haven, Connecticut	29.98	761.5	30.09	764.3	54	12.2	67	SW	11	4.9			10s		Calm	0	0	Cloudy	
New London, Connecticut	30.07	763.8	30.12	765.0	53	11.7	70	SW	10	4.5		6cs	Haze	SW	Calm	0	0	Fair	
New Orleans, Louisiana	30.08	764.0	30.14	765.5	66	18.9	68	E	3	1.3			10n		Calm	0.01	0.3	Light rain	
Newport, Rhode Island	30.07	763.8	30.12	765.0	50	10.0	79	SW	24	10.7			10s		SW	0	0	Cloudy	
New River, North Carolina					60	15.6	66	N			1	5cs	0	Calm				Fair	
New York, New York	29.96	761.0	30.14	765.5	50	10.0	78	SW	8	3.6		2cs; haze	0	W; Calm		0	0	Fair	
Norfolk, Virginia	30.25	768.3	30.51	769.9	58	14.4	64	SW	12	5.4		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.06	687.3	29.63	752.6	45	7.2	68	SW	4	1.8		2c	0	Calm		0	0	Clear	
Olympia, Washington Ter.	29.80	756.9	29.84	757.9	51.5	10.8	90	S	4	1.8		0	8s		S	0.10	2.5	Cloudy	
Omaha, Nebraska	28.81	731.8	29.88	758.9	62	16.7	56	SW	6	2.7		0	0			0	0	Clear	
Oswego, New York	29.64	752.8	29.96	761.0	49	9.4	89	SW	4	1.8			10n		SW	0.32	8.1	Heavy rain	
Pembina, Dakota	28.75	730.2	29.57	751.1	48	7.8	77	S	4	1.8		5c	0	Calm		0	0	Fair	
Pensacola, Florida	30.12	765.0	30.15	765.8	68	20.0	74	E	14	6.3			10ks		SE	0	0	Cloudy	
Philadelphia, Pennsylvania	29.94	760.5	29.99	761.7	53	11.7	67	SW	24	10.7		1c	0	Calm		0	0	Clear	
Phœnix, Arizona	28.78	731.0	30.57	776.5	57	13.9	58	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.86	453.6	30.07	763.8	15	— 9.4	48	NW	1	0.4		1cs	0	Calm		0.21	5.3	Clear	
Pilot Point, Texas																			
Pioche, Nevada	24.04	610.6	29.82	757.4	49	9.4	44	S	3	1.3		8cs	2s	Calm	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.29	744.0	30.09	764.3	57	13.9	47	SW	8	3.6		0	0			0	0	Clear	
Port Huron, Michigan	29.22	742.2	29.87	758.7	54	12.2	61	SW	14	6.3			10ks		SW	0.02	0.5	Threatening	
Portland, Maine	30.00	762.0	30.04	763.0	48	8.9	56	W	4	1.8		5k	5s	Calm	Calm	0	0	Cloudy	
Portland, Oregon	29.87	758.7	29.95	760.7	53	11.7	80	S	11	4.9			10n		S	0.11	2.8	Light rain	
Portsmouth, North Carolina					61	16.1	61	SE	6	2.7		5c	0	Calm		0	0	Fair	
Prescott, Arizona					44	6.7	60	Calm	0	0		2c	2ks	S	S	0	0	Fair	
Punta Rassa, Florida	24.81	630.2	30.17	766.3	73	22.8	72	NE	12	5.4		5c	0	W		Inap.	Inap.	Fair	
Red Bluff, California	30.12	765.0	30.13	765.3	56.5	13.6	91	S	11	4.9		0	5s		S	Inap	Inap.	Fair	
Rio Grande City, Texas	29.74	755.4	30.10	764.5	68	20.0	90	NW	8	3.6			10s		N	0	0	Cloudy	
Rochester, New York	29.82	757.4	30.03	762.7	48	8.9	93	W	3	1.3			10n		Calm	0.26	6.6	Light rain	
Roseburg, Oregon	29.32	744.7	29.94	760.5	52	11.1	79	SW	3	1.3		0	5ks		SW	Inap	Inap.	Fair	
Sacramento, California	29.46	748.3	30.02	762.5	56	13.3	81	S	5	2.2			10s		Calm	0	0	Cloudy	
St. Louis, Missouri	30.04	763.0	30.12	765.0	55	12.8	56	S	9	4.0		1cs	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.54	750.3	30.11	764.8	53	11.7	67	Calm	0	0		0	0			0	0	Clear	
Salt Lake City, Utah	28.98	736.1	29.78	756.4	55	12.8	42	SE	5	2.2		7k	0	W		0	0	Fair	
San Antonio, Texas	25.60	650.2	29.93	760.2	63	17.2	100	N	1	0.4			10s		N	2.59	65.8	Threatening	
San Diego, California	29.39	746.5	30.09	764.3	57	13.9	87	NW	5	2.2			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	30.05	763.3	30.12	765.0	55	12.8	48	W	20	8.9		5ck	0	W		0.05	1.3	Fair	
Sandy Hook, New Jersey	29.33	745.0	29.99	761.7	59	15.0	63	SW	26	11.6		0	0			0	0	Clear	
San Francisco, California	30.09	764.3	30.12	765.0	56	13.3	87	SW	6	2.7			10s		SW	0	0	Cloudy	
Santa Fé, New Mexico	30.07	763.8	30.13	765.3	55	12.8	32	N	2	0.9		0	0			0	0	Clear	
Savannah, Georgia	23.27	591.0	29.81	757.2	33	0.6	77	NE	3	1.3		10cs	0	W		0	0	Cloudy	
Shreveport, Louisiana	30.10	766.8	30.29	769.4	61	16.1	76	E	5	2.2			10s		Calm	0	0	Cloudy	
Silver City, New Mexico	29.93	760.2	30.15	765.8	59	15.0													
Smithville, North Carolina																			
Socorro, New Mexico	30.29	769.4	30.32	770.1	58	14.4	82	N	5	2.2		5c; hz	Haze	Calm	Calm	0	0	Hazy	
Springfield, Illinois	25.46	646.7	29.53	750.0	47	8.3	55	S	1	0.4		0	0			0	0	Clear	
Springfield, Massachusetts	29.42	747.3	30.08	764.0	57.5	14.2	60	SW	10	4.5		0	1s		W	0	0	Clear	
Stockton, Texas	29.94	760.5	30.07	763.8	50	10.0	79	S	4	1.8			10n		SW	Inap.	Inap.	Light rain	
Thatcher's Island, Mass.	26.99	685.5	29.99	761.7	52	11.1	93	SE	4	1.8		0	0			0	0	Clear	
Toledo, Ohio	30.04	763.0	30.09	764.3	46	7.8	100	SW	16	7.2			10s		SW	0	0	Threatening	
Tucson, Arizona	29.29	744.0	29.95	760.7	61	16.1	45	SW	4	1.8		8c	Sm'e	W	Calm	Inap	Inap.	Fair	
Umatilla, Oregon	27.54	699.5	30.09	764.3	64	17.8	57	S	4	1.8		0	0			0	0	Clear	
Uvalde, Texas	29.57	751.1	30.05	763.3	56	13.3	90	S	5	2.2		5cs	2s	W	W	0.05	1.3	Cloudy	
Vicksburg, Mississippi	29.13	739.9	29.94	760.5	62	16.7	88	NE	1	0.4			10s		NE	0.66	16.8	Cloudy	
Virginia City, Montana	29.93	760.2	30.19	766.8	60	15.6	82	NE	3	1.3			10s		Calm	Inap.	Inap.	Cloudy	
Visalia, California	24.17	613.9	29.65	753.1	41	5.0	49	Calm	0	0			0			0.07	1.8	Clear	
Washington, D. C.	29.69	754.1	30.06	763.5	53.5	11.9	86	W	1	0.4		0	2s		Calm	0	0	Fair	
Wickenburg, Arizona	30.12	765.0	30.23	767.8	55	12.8	56	SW	8	3.6		1c	0	Calm		0	0	Clear	
Wilmington, North Carolina					62	16.7	46	W			1	0	0			0	0	Clear	
Winnemucca, Nevada	30.25	768.3	30.33	770.4	58	14.4	64	NE	3	1.3		5cs	Haze	Calm	Calm	0	0	Fair	
Wood's Holl, Massachusetts	25.63	651.0	29.99	761.7	56	10.0	52	SW	2	0.9			10ks		SW	0	0	Cloudy	
Yankton, Dakota	30.09	764.3	30.12	765.0	51	10.6	72	SW	30	13.4			10s		SW	0	0	Cloudy	
Yuma, Arizona	28.61	726.7	29.88	758.9	54	12.2	55	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.	29.74	755.4	29.89	759.2	62	16.7	77	Calm	0	0		0	0			0	0	Clear	
Bogota, U. S. Colombia	22.04	559.8			57.0	13.9	80	Calm	0	0			10ks			0.19	4.8	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.10	764.5	30.14	765.5	79	26.1	74	Calm	0	0		4cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.					76	24.4	79	Calm	0	0		0	0					Fair	James Gall.
Navassa, W. I.	30.00	762.0	30.08	764.0	79	26.1	66	NE	4	1.8		5k	5s	E	NE	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	81	27.2	83	E			2	5k	8ks	E		0.020	0.51	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.46	748.3	30.02	762.5	77	25.0	89	Calm			0		10s			0.63	16.0		Francesco J. Cisneros.
Rivas, Nacaragua								NE				2cs		SW		0	0	Fair	Carl Flint.
Santiago de Cuba, W. I.	30.05	763.3	30.08	764.0	80	26.7	67	Calm	0	0		8cs	2k	SW	Calm	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.22	767.6	30.27	768.8	9.0	—12.8	89	NE	10	4.5		2c	0	N		0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,395.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.16	766.1	72	22.2	76	E	24	10.7			10		SE	0	0			Threatening	
§ Navy Yard, Portsmouth, N. H.	30.05	763.3	47	8.3	55	SW	10	4.5			10			0	0			Overcast	
Naval Hospital, Yokohama, Japan	30.20	767.1	58.5	14.7	73	Calm			0	1c	Haze		Calm	0	0			Fair	
§ Adams, Gulfito, Costa Rica	29.95	760.7	77	25.0	90	Calm			0		2							Fair	
§ Alaska, Callao, Peru *	29.99	761.7	62	16.7	94	Calm			0		10					Long	SW	Foggy	
§ Alert, Yokohama, Japan	30.18	766.6	62	16.7	66	S			1		2		Calm	0	0	Smooth		Clear	
§ Colorado, New York, . Y.	30.13	765.3	54	12.2	74	SSW	8	3.6			8		SW	0	0			Cloudy	
§ Constitution, Hampton Roads, Va.			55	12.8	93	SW	18	8.0			2		SW					Clear	
§ Enterprise, N. 26° 17′, W. 65° 13′	30.24	768.1	75	23.9	81	S			1		3		SW			Mod'ate	ENE	Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	30.34	770.6	51	10.6	86	SSW	12	5.4			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.16	766.1	55	12.8	100	SW	1.2	0.5			8		SW	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.56	750.8	37	2.8	100	Calm			0		5					Smooth		Fair	
Kearsarge, Boca del Toro, Chiriqui	30.04	763.0	77	25.0	86	W			1–2		8		W			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.05	763.3	56	13.3	75	S			4		10		S	Blank	Blank	Mod'ate	SW	Cloudy	
§ Michigan, Erie, Pa.	29.93	760.2	55	12.8		SW			4		8		SW					Cloudy	
§ Monocacy, Shanghai, China	30.07	763.8	61	16.1	82	S			1–2		5?		SW	0	0			Cloudy?	
§ New Hampshire, Port Royal, S. C.	29.94	760.5	63	17.2	83	NE	12	5.4			10		SW	0	0			Cloudy	
Nipsic. N. 35° 05′, W. 8° 09′	29.84	757.9	65	18.3	63	NNE			3		8		NE			Light	N	D. clouds	
§ Onward, Ancon Bay, Peru †	30.01	762.2	63	17.2	94	Calm			0		10					Long	W	Foggy	
§ Palos, Shanghai, China	30.09	764.3	60	15.6	82	S			3		10		S					Overcast	
§ Passaic, Washington, D. C.	30.24	768.1	54	12.2	67	SSW			3		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.08	764.0	54	12.2	??	SW			1		10					Smooth		Overcast	
§ Powhatan, Annapolis, Md.	30.20	767.1	54	12.2	55	SW			2		2							Fair	
§ Quinnebaug, Mazaghan, Marocco	29.76	755.9	62	16.7	77	WSW			2		2		WSW			Long	N	Fair	
§ Richmond, Shanghai, China	30.09	764.3	64	17.8	78	SSE			3		0			0	0			Misty	
§ Rio Bravo, Brownsville, Texas †	30.16	766.1	72	22.2	??	SE	1	0.4			5		SW	0	0			Fair	
§ Saratoga, N. 37° 43′, W. 51° 20′	30.23	767.8	62	16.7	83	S			3		8		S	0	0	Smooth	SE	Fair	
§ Shenandoah, Montevideo, Uruguay	30.06	763.5	56	13.3	75	S			2		8		SW			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.29	769.4	52	11.1	86	SW	15	6.7			0			0	0			Clear	
Swatara, N. 50° 54′, E. 92° 48′ †	29.85	758.2	82	27.8	91	W			1		10		SW			Mod'ate	SW	Cloudy	
§ Tennessee, N. 16° 32′, W. 75° 53′	30.06	763.5	76	24.4	90	SE	5	2.2			5		SE	2.2	56.	Smooth	NE	Fair	
§ Trenton, Smyrna, Turkey	29.83	757.7	78	25.6	50	W			3		2			0	0	None		Fair	
§ Tuscarora, Mare Island, Cal.	30.13	765.3	58	14.4	82	SW			1		10		Calm	0	0	Smooth		Overcast	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.13	765.3	57	13.9	94	SW			3		2		W					Fair	
§ Wabash, Boston, Mass.	30.07	763.8	49	9.4	63	SW	17	7.6			10			0	0			Cloudy	
§ Wachusett, Montevideo, Uruguay	30.05	763.3	56	13.3	100	SSW			3		8		S	0	0	Smooth		Fair	
Wyoming, Constantinople, Turkey	29.97	761.2	53	11.7	86	NE			2–4		10		NE			Smooth	NE	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0,125 in., or 318 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 48° 00′, W. 38° 50′	30.42	772.7	54	12.2		SE			2		10		SSE			Smooth	SE	Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent, N. 46° 39′, W. 30° 23′	30.61	777.5	55	12.8	62	ESE			5		5?		ESE	Mod'ate	Mod'ate	Mod'ate	E	Cloudy?	
S. S. Ohio, Henry Morrison, N. 43° 09′, W. 57° 55′ *†	30.30	769.6	43	6.7	92	WNW			3		1		WNW	1 h'r	1 h'r	Large	W	Fair	Wm. Shackford.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains, N. 42° 13′, W. 58° 02′ *	30.01	762.2				WNW			3		2		NNW	0	0	Mod'ate	NW	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er	Lo'er	Upper.	Lower.	Inches.	Millimeters.	Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama, Japan †	30.21	767.3	63	17.2	94	S			4		5		S			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 41° 43′, W. 181° 19′ †	29.96	761.0	51	10.6	93	SW			3	ck				Light	Light	Smooth	SW	D. clouds	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal. †	30.24	768.1	52	11.1		SW			2		10		Calm					Cloudy	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	30.09	764.3	50	10.0		NW			2		5		W					Light fog	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin.																			F. A. Johnston.
§ S. S. Australia, S. 32° 34', W. 179° 26'...	30.14	765.5				ENE			4		0					Mod'ate	ENE	Clear	Banneman.
§ S. S. China, W. B. Seabury, San Jose, Guatemala...†	29.91	759.7	77	25.0	91	NE			1		0					Mod'ate	SW	Clear	
S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of Panama, M. Connolly, N. 9° 38', W. 54° 40'.... †	29.96	761.0	82	27.8		W			3		2		NW	3 h'rs	3 h'rs	Mod'ate	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.91	759.7	72	22.2		SW			4		8		SW	0	0	Smooth		Cloudy	E. LeSack.
§ S. S. City of Tokio, J. Maury, N. 25° 12', E. 118° 31'.....†	30.17	766.3	65	18.3	78	NE			2		8		NE	0	0	Smooth		Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 12° 10', W. 48° 01'.....†	30.03	762.7	83	28.3	100	E			5		2		Calm	0	0	Mod'ate	E	Clear	
§ S. S. Dakota, D. E. Griffiths, N. 43° 32' W. 124° 46'....†	29.98	761.5	53	11.7	80	SSW			4		10			Blank	Blank	Heavy	SW	Cloudy	D. E. Griffiths.
S. S. Idaho, N. 43° 56', W. 124° 55'....†	29.89	759.2				SSE			6		8		SSE	0	0	Rough	S	Cloudy	
§ S. S. Granada, J. M. Cavarty																			
§ S. S. Zealandia, R. O. Ghest, S. 10° 27', W. 169° 20'.....	29.87	758.7				NE			5				E			Smooth	SE	Squally	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes,																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			W. S. Waugh. J. Jones.
S. S. Britanic, H. Perry, N. 40° 44', W. 67° 49'.... †	30.31	769.9	41	5.0	91	SW			5		8		SSW	0	0	Mod'ate	SW	Fine	
S. S. Celtic, B. Gleadell, N. 50° 38', W. 18° 57'....*†	30.36	771.1	48	8.9		N			5		8		N	0	0	Mod'ate	N	Cloudy	
S. S. Republic, P. J. Irving N. 41° 21', W. 62° 41'...*†	30.30	769.6	46	7.8		Var.			3		0			0	0	Mod'ate	WSW	Fair	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.																			Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston Harbor, Mass.	29.97	761.2	47	8.3	100	WSW	10	4.5			10n		WSW					Raining	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 26° 20', E. 56° 00'.....*†	29.90	759.4	76	24.4		WSW			5		8		W	0	0	Rough	NNE/W	Clearing	B. F. Woodbury.
Brigantine George, W. H. Champlin, N. 27° 15', W. 65° 10'. ....†	30.34	770.6	76	24.4		S			1		2			0	0	Smooth		Clear	
Hippolyta, N. 42° 55', W 42° 38'.....*	30.10	764.5	66	18.9		ESE			7		8		SE	0	0	Mod'ate	E	Fair	
Iron Cross, W. Randall.																			W. Randall.
Barque Syringa, E. Lewis.																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 3, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.00	761.9				SW			4		7			0.276	7.0	Very cloudy	Dr. Ollive.
Nemours			29.81	757.2	60.3	15.7	91	N			2		7			0.488	12.4	Very cloudy	Metge.
Algiers			29.74	755.5	61.9	16.6	83	WNW			5		6			0.283	7.2	Cloudy	Nicolas.
La Calle			29.77	756.1	62.1	16.7	91	NNW			5		10			0	0	Covered	Fonfrède.
Tunis			29.74	755.4															Jacques.
Sfax			29.85	758.2															Gau.
Saida			29.82	757.3															Bernard.
Tebessa			29.82	757.5	67.1	19.5	21	W			7		3			0.024	0.6	Pretty fair.	Watrin.
Geriville					57.7	14.3	39	NW			2		6			0.591	15.0	Cloudy	Brugniaux.
Laghouat			29.82	757.3	62.6	17.0	35	W			6		5			0	0	Cloudy.	Suart.
Biskra			29.73	755.2	70.5	21.4	72	WNW			3		6			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.15	740.4	29.69	754.1	59.4	15.2	80	E			3		10			0.287	7.3		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.04	737.7	29.80	756.8	62.2	16.8	72	E	16.8	7.5			10			0.055	1.4		Dr. Wierzbicki.
Eperies	28.92	734.5	29.78	756.5	57.2	14.0	90	Calm			0		10§		N	0.154	3.90		Julius Mikolik.
Gratz	28.46	722.8	29.69	754.1	57.6	14.2	75	S			2		7			0.236	6.0		Andreas Rospini.
Hermannstadt	28.40	721.3	29.78	756.3	64.4	18.0	54	S			5		10			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.28	718.3	29.59	751.5	58.1	14.5	74	Calm			0		9			0	0		The Staff.
Lemberg	28.88	733.5	29.86	758.5	53.2	11.8	78	SE			3		10			0.177	4.5		Dr. T. Stanecki.
Pola	29.55	750.6	29.66	753 4	64.0	17.8	78	SSW			1		5			0.409	10.4		I.R. Hydrographic Office.
Szathmar	29.38	746.3	29.84	757.8	64.0	17.8	76	S			2		10			0.079	2.0		Pet. Pancsics, S. J.
Szegedin	29.43	747.5	29.70	754.4	64.4	18.0	71	SE			4		6			0.083	2.10		Karl Stancel.
Trieste	29.60	751.8	29.70	754.4	55.6	13.1	99	Calm			0		10			0.354	9.0	Raining	P. Busin.
Vienna	28.97	735.8	29.69	754.1	56.8	13.8	81	SE			2		10			0.146	3.7		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 3, 1880.

BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.82	757.4	29.92	760 0	45.3	7.4		NE	16	7.2			9			0.020	0.51	Overcast	W. Boswell.
Ardrossan	29.84	757.9	29.85	758.2	51	10.6		E			2		8					Misty	G.Carrick.
Armagh, (Observatory)	29.67	753.6	29.90	759.4	51.0	10.6		N	12	5.4			7					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.77	756.1	48.8	9.3		NW	12	5.4			10					Overcast	John Hartnup.
Bolton (Sharples)	29.22	742.2	29.73	755.1	49.8	9.9		NNE					10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.38	746.2	29.77	756.1	48.2	9.0	82	NE			2		10			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.00	762.0	81	27.2		NE			2		4					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.65	753.1	29.74	755.4	58.0	14.4		NE			1		7					D. clouds	H. Todd.
Cardington			29.72	754 9	53.0	11 7		E			0–1		8					Overcast	John McLaren.
Chatham (School M. E.)	29.60	751.8	29.73	755.1	55.1	12.8		E			1		4					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.83	757.7	29.88	758 9	52	11.1		NNE			5		3					D. clouds	J. Mac Gowan.
Dover	29.63	752.6	29.66	753.4	54	12.2		NE			4		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.50	749.3	29.73	755.1	51.0	10.6		NNW			5		10					Squally	The Staff.
Fort Napier, Natal	27.77	705.4	29.99	761 7	70.0	21.1		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.69	754.1	29.93	760.2	81	27.2		SW			1		8					D. clouds	
Galway (Queen's College)			29.87	758 7	51	10.6		N			5		9					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.77	756.1	29.83	757.7	64.7	18.2		SW			3		3					D. clouds	Sgt. W. Allen.
Glasgow, (Observatory)	29 67	753.6	29.87	758.7	48.8	9.3		E			3		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.73	755.1	29.74	755.4	48	8.9		N			2		6					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.54	750 3	29.70	754.4	56.7	13.7		NNE			1		9					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.45	748.0	29.67	753.6	55	12.8		NE			1		0					Blue sky	Dr.S.E Hoskins, F.R.S.
Helston	29.91	759 7	30.03	762.7	60	15.6		N			2	3c				0	0	Fine	M. P. Moyle.
Holyhead	29.78	756.4	29.82	757 4	49	9.4		N			4		10					Misty	John Tilston.
Jersey	29.42	747.3	29.71	754.6	57.9	14.4		WNW			2		2					Blue sky	J. Fisher.
Kew (Observatory)	29.68	753.9	29.72	754.9	50.8	10.4		NNE	10	4.5			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.49	749.0	29.74	755.4	53 0	11.7		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.55	750.6	29.63	752.6	76	24.4		SW			3		6					D. clouds	A. King.
Nairn	29.82	757.4	29.91	759.7	51	10.6		NW			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.08	764.0	82.0	27.8		SE			1		4					D. clouds	C.S. Duncombe.
Nottingham (Observatory)	29.59	751.6	29.78	756.4	57.2	14.0		NNE			3	c	2k		ENE	0.007	0.18	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.22	742.2	29.74	755.4	49.0	9.4		NNE			2		9					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.49	749.0	29.74	755.4	57	13.9		NE			1		6					Misty	The Staff, for E. J. Stone, Esq.
Plymouth	29.63	752.6	29.70	754.4	55.5	13.1		NE			3		10					Overcast	John Merrifield.
*Roche's Point	29.80	756.9	29.89	759.2	51	10.6		NE			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.62	752 3	29.78	756.4	50	10.0		N			3		4					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.94	760.5	46	7.8		NNW	15	6.7			5					D. clouds	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.84	757.9	29.90	759 4	62.0	16.7		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.54	750.3	29.82	757 4	46.2	7.9		NE			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	29.80	756.9	29.83	757 7	46.9	8.3	89	NW			2		10			0.053	1.35	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.78	756.4	50.1	10.1		NE	7	3.1			5					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.51	749.5	29.73	755.1	48.4	9.1		E			1		10					Showery	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.73	755.1	29.76	755.9	59	10.0		NE			6		8					Gloomy	W. Newcombe.
Valencia Observatory)	29.89	759.2	29.91	759.7	50.8	10.4		NNE	28	12.5			7					Squally	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	30.02	762.5	30.06	763.5	71.9	22.2	65	S	17.1	7.6		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.22	767.6	60.0	15.6	88	W			1		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.93	760.2	42.9	6.1		NE			2		10n			0.04	1.0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.82	757.4	30.01	762.3	78.9	26.1	74	ESE	6.0	2.7			10			0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	30.16	766.0	30.25	768.3	52.9	11.6	85	W	10	4.5			3			0.04	1.0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.02	762.5	46	7.8		N			6	5	0	N		0	0		J. Youngclause.
North Unst, Shetland I's			29.80	756.9				SW			6	2	4	W		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Sea or swell. Height scale 0→9	Sea or swell. Direction from	Weather.	Observer.
H. M. S. Alert,											Capt.J.P. Maclear, R.N.
City of Agra											Capt. Thos. Young.
City of Cashmere											Capt. W. M. Grieve.
Barque Commewyne											Capt. Jas. Buchan.
Ship British Commodore											Capt. J. W. Thorne.
Barque Decapolis											Capt. T. M. Almond.
Barque Dochra											Capt. H Spalding.
S. S. Ethiopa											Capt. A. Campbell.
Barque Fedalina,											Capt. H. L. Fox.
Brig. Fylde											Capt. L. C. Dart.
S. S. German, East London, Cape Colony		30.10	764.5	71	21.7	SE	2	5		D. clouds	Capt. C. D. Coxwell
S. S. Gordon Castle											Capt. Wm. Waring.
Barque Hope											Capt. Jas. Campbell.
S. S. Richmond											Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 05', W. 14° 50'		29.98	761.5	51.7	10.9	N	6	6		D. clouds	Capt. W. P. Hughes.
S. S. Strathleven,											Capt. C. W. Pearson.
S. S. Sunbeam											Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2	29.95	760.7	68.4	20.2	77	NE			8	7c				Inap.	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.82	757.3	29.86	758.5	56.1	13.4	53	SE			4		1						
Fanöe	29.75	755.7	29.77	756.2	60.4	15.8	46	E			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.92	760.0	29.97	761.1	41.7	5.4	78	S			4		8						
Thorshavn (Faröe)	29.87	758.6	29.90	759.5	43.9	6.6	77	N			2		4						
Vestervig	29.75	755.6	29.84	758.0	60.4	15.8	41	E			4		2						

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

FRENCH SERIES.

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

Alençon, Normal School	29.14	740.1	29.69	754.1	59.0	15	50	N			1		5kn			0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.52	749.8	29.63	752.5	70.5	21.4	48	NW			1		8		NE	0.055	1.4	Very cloudy	Vaillant, Director.
Arras, Engineer School	29.37	746.1	29.63	752.5	63.3	17.4	47	SE			1		9n			0	0		Klein, Commandant.
Avignon, Normal School	29.54	750.3	29.62	752.3	71.2	21.8	46	N			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.08	738.7	29.62	752.4	64.2	17.9	47	NW			1		8kn		WSW	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.37	745.9	29.63	752.5	63.1	17.3	48	ESE			1		5			0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	28.76	730.5	29.63	752.6	64.8	18.2	51	SSW			1		5		N	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.47	748.5	29.67	753.5	59.7	15.4	56	NNW			1		8		WSW	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.78	731.1	29.69	754.2	66.2	19	43	W			1	2c		S	SW	0	0	Slightly cld'y	Marlot, Director.
Bourges, Normal School	29.13	739.8	29.67	753.6	61.9	16.6	67	SW			1		5ks		SE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.48	748.9	29.69	754.1	57.9	14.4	67	NNW			1		2		NNW	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.55	750.5	29.62	752.4	53.6	12	87	NW					10			0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.20	741.7	29.60	751.8	68.0	20	41	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.33	744.9	29.63	752.7	66.4	19.1	72	SSW			1		5			0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.01	736.9	29.58	751.2	66.0	18.9	96	NW			1		8		S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.31	719.1	29.64	752.9	58.1	14.5	61	S			1		8			0	0		Alluard, Director.
Commercy, Normal School	28.78	731.0	29.58	751.2	60.8	16	49	E			1		kn		E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.53	724.6	29.67	753.6	62.6	17	61	W			2		8		W	0.020	0.5		L. Khn, Director.
Grenoble, Normal School	28.86	733.1	29.60	751.9	65.5	18.6	59	NW			1		ckn		SE	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.48	748.8	29.69	754.2	64.4	18.0	53	W			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.37	745.9	29.67	753.6	59.7	15.4	35	N			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. Schoo	28.70	728.9	29.60	751.7	63.5	17.5	46	W			1		2k		SE			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.59	751.6	29.70	754.4	61.5	16.4	49	SW			2		5	SE	SW	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.02	737.1	29.61	752.2	66.2	19.0	38	N			1		5cn		SW	0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.35	745.6	29.62	752.4	64.6	18.1	60	SW			1		0		SSW	0.008	0.20		E. Stephan, Director.
Mirecourt, Normal School	28.51	724.1	29.53	750.1	59.0	15	58	S			1		k		S	0	0		Barbier, Director.
Mont-Louis	24.49	622.1	29.73	755.1	46.4	8.0	72	SE	7.4	3.3			3		W	0	0		M. Cave, for Dr. Fines.
Nice	29.61	752.0	29.64	752.9	66.2	19.0	66	SE			2		2	NE	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.40	746.8	29.60	751.9	68.2	20.1	57	NW			3		2		W	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.53	750.1	29.64	752.8	64.9	18.3	35	NW	7.4	3.3			3	WNW	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.18	563.4			30.2	—1.0							5		SW	0	0	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.63	727.2	29.63	753.3	66.0	20	42	NW			1		5kn	NW	NW	0	0	Cloudy	M. Taillieu.
Puy de Dome (Summ') Ob	24.82	630.5			40.6	4.8	83	S			2		10		SW	0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.67	753.6	29.70	754.4	65.3	18.5	61	W			1		5	W	W	1.02	26.	½ covered	Lt. E. Devante, Director
Rouen, Normal School	29.55	750.5	29.63	752.7	63.7	17.6	43	N			1		8		W	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.65	753.1	29.68	753.9	55.6	13.1	66	NW			3		0			0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.48	748.7	29.64	752.9	57.7	14.3	61	SE			1		9	S	SE	0	0	Cloudy	E. Renou, Director.
Tarbes, Normal School	28.63	727.3	29.67	753.5	60.8	16	79	SW											T. Huguet, Director
Toulouse, Observatory	29.05	737.8	29.76	756.0	59.5	15.3	69	NW			1		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.43	747.6	29.63	752.6	63.9	17.7	40	NE			1		8		NNE	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.13	740.0	29.63	752.5	64.0	17.8	43	E			1					0.348	8.84		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	28.98	736.2	29.67	753.6	67.1	19.5	56	NE			1		2		NE	0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.22	767.5	30.24	768.2	77.7	25.4										0.16	4.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.36	745.8			62.6	17.0	40	Var.			1		8			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.97	761.2	29.99	761.8	59.9	15.5	99	E	4.5	2.0			0			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.81	731.8	29.66	753.4	59.9	15.5	61	E			4		6k	NE		0.047	1.2	Raining	Prof. Dr. Hoh.
Berlin	29.55	750.6	29.72	754.9	60.8	16.0	59	E			1		10			0.008	0.2		Prof. Dr. Arndt.
Breslau	29.22	742.3	29.75	755.6	64.0	17.8	60	ESE			3		6			0	0		Royal University Obs'y.
Carlsruhe	29.19	741.5	29.60	751.9	63.7	17.6	58	SE			0		5	S		0	0		Albert Senz.
Cassel	29.03	737.3	29.63	752.6	63.7	17.6	48	E			3		7			0.012	0.30		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.34	745.3	29.71	754.6	64.0	17.8	45	NE			1		8			0	0		Physical Society.
Friedrichshafen	28.22	716.7	29.62	752.3	58.6	14.8	54	SW			2		3	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.65	753.0	29.72	754.8	57.2	14.0	78	ESE			3		10			0.248	6.3		Dr. Reinhold Kleeman.
Kiel	29.74	755.5	29.76	755.9	54.1	12.3	69	ENE			3		10			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.91	759.6	29.99	761.7	63.1	17.3	33	SE			7		0			0	0		Prof. E. Luther.
Köslin			29.81	757.1	65.8	18.8		SE			6		1			0	0		H. Müller.
Leipsic Observatory	29.26	743.2	29.67	753.7	56.1	13.4	86	ENE			2		10	E		0	0		Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29.48	748.7	29.70	754.4	56.3	13.5	87	ENE			2		10ks	ENE				Raining	Dr. Assmann.
Memel	29.99	761.8	30.04	763.0	60.6	15.9	38	SE			3		0						Reinbrecht & Issermann.
Munich	27.84	707.2	29.68	753.8	57.0	13.9	62	Calm			0		8	W		0.063	1.6		Dr. C. Lang.
Neufahrwasser	29.91	759.8	29.93	760.2	55.0	12.8	55	NE			3		0			0	0		A. Lothes.
Neustadt (Palatinate)	29.09	738.8	29.61	752.0	64.0	17.8	50						4	NE		0	0		Reallehrer Dicknether.
Posen	29.50	749.4	29.79	756.6	58.5	14.7	49	E			8		10			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.10	739.2	29.64	752.8	63.1	17.3	56	Calm	0	0			5	WNW		0	0		Imp. University Observatory.
Stuttgart	28.69	728.8	29.56	750.9	60.8	16.0	57	N					5	W		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.20	716.2	29.76	755.9	52.2	11.2	89		0.7	0.3			10		NNW	0.106	2.7	Raining	Reallehrer J. Hopfner.
Wustrow	29.76	756.0	29.79	756.7	62.2	16.8	49	E			4		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.52	749.9	29.91	759.6	73.4	23.0		SW			2.0							Misty	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general forms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.58	751.3	29.63	752.6	81.7	27.6	92	S	20	8.9			2	WNW		0	0	Misty	
Deesa	29.16	740.7	29.61	752.1	103.8	39.9	9	SW	11.4	5.1			2	NNW		0	0	Misty	
Bombay	29.75	755.7	29.79	756.6	85.9	29.9	70	W	11	4.9			6		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.91	708.8	29.72	754.8	90.8	32.7	27	WNW	24	10.7			0			0	0	Blue sky	
Belgaum	27.26	692.5	29.76	755.9	83.2	28.4	58	WSW	10	4.5			3	E		0	0	D. clouds	
Lahore	28.83	732.4	29.54	750.4	100.2	37.9	27	Calm	1.9	0.8			0			0	0	Blue sky	
Roorkee	28.84	732.6	29.72	755.0	88.8	31.6	32	S	5	2.2			4			0	0		
Agra	29.04	737.6	29.58	751.3	100.6	38.1	24	E	9.5	4.2			0			0	0		
Nagpur	28.56	725.5	29.55	750.6	103.5	39.7	11	SSW	2.5	1.1			7	W		0	0	D. clouds	
Jubbulpore	28.25	717.5	29.55	750.6	101.1	38.4	11	NW	5.4	2.4			8			0	0	Misty	
Lucknow	29.29	744.0	29.66	753.4	81.2	27.3	54	ENE	8.7	3.9			0			0.12	3.0	Blue sky	
Allahabad	29.32	744.7	29.63	752.5	83.7	28.7	47	ENE	6.2	2.8			0			0	0	Blue sky	
Patna	29.50	749.4	29.68	754.0	84.4	29.1	56	E	2.6	1.2			6	E	E	0.10	2.5	D. clouds	
Hazaribagh	27.63	701.7	29.60	751.7	86.0	30.0	34	SE	12.0	5.4			8		W	0	0	Threatening	
Cuttack	29.59	751.6	29.67	753.6	87.5	30.8	55	S	5.4	2.4			0			0.16	4.1	Blue sky	
Calcutta (Alipore)	29.65	753.0	29.67	753.6	86.2	30.1	67	SSW	5.0	2.2			0			0	0	Blue sky	
Goalpara	29.31	744.4	29.72	754.8	77.5	25.3	63	SE	5.5	2.5			5	SW		0.60	15.2	D. clouds	
Chittagong	29.63	752.5	29.72	754.8	83.7	28.7	60	SW	4.1	1.8			2			0	0		
Sibsagar	29.44	747.8	29.78	756.3	79.1	26.2	87	NE	2.5	1.1			8	W	W	0.96	24.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.30	744.2	29.71	754.5	58.6	12.0	93	NE	0.7	0.3			10			0.657	16.7		Prof. Giovanni Clodig.
Milan	29.10	739.0	29.60	751.9	62.2	16.8	64	ESE	9.4	4.2			9	NE		0.024	0.6		Prof. Schiaparelli.
Padua	29.58	751.2	29.68	753.9	55.6	13.1	90	NE	7.4	3.3			10	NE		0.236	6.0		Prof. Dott. Lorenzoni.
Moncalieri	28.74	730.0	29.64	752.9	60.1	15.6	60	SE	3.8	1.7			5	NE		0.244	6.2		Prof. P. F. Denza.
Genoa	29.45	748.0	29.64	752.8	62.1	16.7	64	SE	6.3	2.8			10	NE		0.008	0.2		Prof. G. M. Garibaldi.
Mondovi	27.77	705.3	29.67	753.6	55.8	13.2	66	NE			2		5	S		0.004	0.1		Prof. D. C. Bruno.
Pesaro	29.61	752.2	29.66	753.4	58.5	14.7	90	NE	9.8	4.4			10			0.142	3.6		Prof. Luigi Guidi.
Florence	29.37	746.1	29.63	752.5	68.0	20.0	63	NW			2		10	WSW		0.650	16.5		Cav. F. Meucci.
Leghorn	29.55	750.6	29.63	752.7	64.9	18.3	87	WSW	1.8	0.8			10			0.362	9.2		Prof. P. Monte.
Rome	29.45	747.9	29.62	752.3	69.1	20.6	69	S	16.1	7.2			10			0.783	19.9		Prof. P. S. Ferrari.
Lecce	29.48	748.8	29.73	755.2	73.9	23.3	50	SW	23.0	10.3			9	SW		0.020	0.5		Prof. C. De Giorgi.
Cosenza	28.76	730.5	29.64	752.8	74.5	23.6	73	SE	3.1	1.4			9			0.197	5.0		Prof. D. Conti.
Cagliari	29.32	744.6	29.50	749.4	69.8	21.0	56	E			2		3	E		0.012	0.3		Prof. A. Pacinotti.
Palermo	29.34	745.3	29.59	751.6	67.3	19.6	62	WNW	8.1	3.6			9	WSW		0.004	0.1		Prof. G. Ciacciatore.
Syracuse	29.60	751.8	29.64	752.9	70.7	21.5	83	S	7.4	3.3			10	S		0.075	1.9		Prof. V. G. Guliano.
SUB-SERIES																			
Naples, S. R.	29.10	739.2	29.61	752.1	69.1	20.6	75	SSW	0	0			10	W		0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					61.5	16.4	79	NNE	1.0	0.5			3s			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.85	758.2	30.05	763.3	62.7	17.1	83	SW	0.5	0.2			10s			0.010	0.25	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.03	762.7	30.10	764.5	60.9	16.1	84	SSW	0.8	3.0		0	0			0	0	Clear	The Staff.
Wakayama	30.03	762.7	30.08	764.0	62.6	17.0	79	SSW	0.2	0.1		ck	10s			0	0	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.04	636.1	30.17	766.4	47.3	8.5	31	SW			1	1s	0	W		0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.67	601.3			59.4	15.2	57	Calm	0	0		0	0			0	0	Misty	Vicente Fernandez.
Leon	24.42	620.3	30.09	764.2	60.4	15.8	63	N			2	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.69	754.2	29.95	760.8	68.8	20.4	100	SE			1	7c	0	W		0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.6	30.01	762.3	56.1	13.4	74	Calm	0	0		6k	0			0.004	0.1	Fair	The Staff
Morelia	24.02	610.0			67.1	19.5	64	S			5	2c	8k	E	N	Inap.	Inap.	Covered	M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.9	29.90	759.4	55.2	12.9	44	Calm			0	0	0			0	0	Dense haze	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.7	30.25	768.3	51.8	11.0	49	Calm	0	0		2ck	0	W		0.004	0.1	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.1	30.08	764.0	62.1	16.7	74	E			1	1	3	W	E	0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.89	759.1	29.90	759.4	76.8	24.9	83	NE			1	1	1	S	NE	0	0	Clear	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.56	572.9	30.11	764.8	57.2	14.0	47	SW			1	2c	0	W		0	0	Clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft.

NETHERLANDS SERIES.

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

Flushing	29.66	753.3	29.66	753.3	61.9	16.6		N			3					0	0		
Groningen	29.63	752.7	29.69	754.1	56.3	13.5		ENE								0	0		
Helder	29.67	753.7	29.67	753.7	53.6	12.0		NE			2					0	0		
Hellevoetsluis	29.64	752.9	29.64	752.9	64.8	18.2	53	ENE			1					0	0		
Utrecht	29.60	751.8	29.65	753.0	64.0	17.8	47	NNE			2		5			0	0	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.87	758.6	29.92	760.0	51.4	10.8	65	SSW	4.2	1.9			2			0	0		
Brönö	29.83	757.7	29.87	758.7	53.6	12.0	76	Calm	0	0			5			0	0		
Christiania	29.81	757.2	29.96	760.9	53.6	12.0	55	SW	7	3			10			0	0		
Tromsö	29.80	756.9	29.85	758.3	35.6	2.0	82	NE	7	3			10			0.185	4.7		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.12	765.0	30.33	770.4	60.4	15.8	76	ENE			5		4			0	0		Dr. J. A. Sampaio.
Campo Major	28.69	728.6	29.67	753.7	58.6	14.8	54	SSW	9.8	4.4			7			0.157	4.0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.19	766.7	30.27	768.9	59.9	15.5	64	Calm	0	0			10			0.039	1.0	Raining	Capt. D. A. de Cunha.
Lisbon Observatory	29.41	746.9	29.76	755.9	59 2	15.1	54	W	8.7	3.9			8			0	0		The Staff.
Ponta Delgada (Azores)	30.15	765.8	30.22	767.6	58.6	14.8	68	NE	21.0	9.4			3			0.079	2.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. S. Nicolam, Benguela			29.91	759.6	75.2	24.0		WSW			2		0			2	WSW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Liuna, S. C. da Silva Costa. Porto Praya, Cape Verde I'ds			30.23	767.9	73.8	23.2		NE			1		5		NE	1	NE	1	D clouds	Antonio Sarmento, Q.M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.91	759.7	79.9	26.6		WNW			3		3		W	1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães, Macao, China			30.09	764.2	77.9	25.5		NE			1		10		NE	0		12	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.80	757.6	29.82	757.5	40.8	4.9	86	Calm	0	0			10						Capt. Sseliwerstow.
Astrakhan	30.19	766.8	30.11	764.7	60.1	15.6	29	NE	11	5		10cp							Capt. Wisganow.
Barnaul	29.50	749.3	29.99	761.8	52.2	11.2	73	Calm	0	0			9						Meteorological Obs.
Dorpat	29.87	758.7	30.11	764.8	57.2	14.0	47	W	7	3			10k						Prof. Dr. Weihrauch.
Ekaterinburg	28.82	732.0	29.79	756.6	42.4	5.8	22	W	31	14			5k						Meteorological Obs.
Irkutsk																			
Kasan	29.72	754.8	29.99	761.8	42.8	6.0	62	W	9	4			10						Physical Cabinet.
Kertch	30.00	762.1	30.02	762.6	63.5	17.5	75	ENE	7	3			3					Light clouds	Lagorio.
Kieff	29.46	748.3	30.10	764.6	53.8	12.1	47	ESE	4	2			10ks;n						Physical Cabinet.
Krotkowo*	29.63	752.6	30.10	764.6	50.9	10.5	37	NW	11	5			9k						Cand. Fatjanow.
Lugan	29.93	760.2	30.13	765.3	65.1	18.4	31	ENE	4	2			1						Meteorological Obs.
Moscow	29.65	753.0	30.20	767.1	52.7	11.5	36	SSW	4	2			3ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.01	762.2	30.08	764.1	70.2	21.2	39	ESE	9	4			7cs						Meteorological Obs.
Nikolaievsk, on the Amoor																			Kurdakof.
Nukuss	29.62	752.3	29.84	757.8	92.3	33.5	21	WSW	7	3			7ks						
Orenburg																			
Pekin (China)	29.63	752.7	29.78	756.3	68.9	20.5	50	Calm	0	0			4k						Physical Observatory.
St. Petersburg	30.04	763.1	30.06	763.5	51.1	10.6	62	WNW	9	4		c	1ks						Central Physical Obs.
Tashkend	28.43	722.2	29.94	760.5	75.7	24.3	40	Calm	0	0			2						Teich, A. M.
Tiflis	28.49	723.6	29.87	758.7	65.8	18.8	75	Calm	0	0			10					Light rain	Physical Observatory.
Vladivostock																			
Warsaw	29.48	748.9	29.91	759.6	52.3	11.3	76	ESE	16	7			10n						Astronomical Obs.
Wilna	29.69	754.0	30.10	764.6	59.5	15.3	42	SE	4	2			0						Astronomical Obs.
Yeniseisk	29.85	758.3	30.15	765.7	45.0	7.2	34	ESE	7	3			5						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.59	751.6	29.69	754.2	64.4	18	45	SW	3.6	1.61			4			0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	29.73	755.1	29.78	756.5	63.3	17.4	55	NW	1.2	0.54		3	2	SE		0.303	7.7	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.76	679.8			58.6	14.8	51	NE	12.4	5.55			4			0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.48	698.0	29.66	753.3	62.6	17.0	63	SW	3.0	1.33		0	9			0.094	2.4	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.59	751.5	29.74	755 3	72.3	22.4	49	NE	3.7	1.67		3	4	NE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.79	731.3	29.67	753.6	61.5	16.4	53	N	9.8	4.4			9			0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.97	761.1	30.03	762.8	78.0	25.6	73	SE	5.4	2.4		1c	0	W		Inap.	Inap.	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.86	758.5	29.91	759 8	82.4	28.0	83	SE	3.3	1.5						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.72	754 8	29.81	757.2	64.0	17.8	57	WSW	8.9	4.0		0	10		SW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	761.9	30.09	764.2	77.7	25.4	84	E	7.6	3.40		4cs	2k	E	E	0.079	2.00	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150 5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Upper. 0-10.	Clouds. Amount. Lower. 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.84	757.9	29.88	758.9	54.7	12.6		NW			2		0			0	0		
Umea	29.90	759.4	29.95	760.7	56.8	13.8	49	SW			4		2			0	0		
Hernosand	29.89	759.3	29.95	760.6	60.8	16.0	57	S			4		2			0	0		
Stockholm	29.84	757.9	30.02	762.4	60.1	15.6	39	SSW			2		6			0	0		
Wisby	29.95	760.6	30.00	762.1	49.6	9.8	59	W			4		3			0	0		
Sub-Series.																			
Upsala	29.88	758.9	29.97	761.1	61.2	16.2	44	SW	8.3	3.7			7		SW	0	0		Nils Ekholm.

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

Swedish Naval Series.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Upper. 0-10.	Clouds. Amount. Lower. 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 44° 36′, W. 21° 07′			30.21	767.4	55.4	13.0	77	N			7		8						Misty	J. P. Pâhlson.
H. M. Corvette Balder, N. 55° 40′, E. 5° 13′			29.77	756.2	47.8	8.8	89	ENE			3		0						Blue sky	Capt. A. C. Schonmeyr.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Upper. 0-10.	Clouds. Amount. Lower. 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Geneva	28.22	716.8	29.63	752.7	58.8	14.9	52	NNE			2		6			0.012	0.3	Cloudy	The Observatory.
Zurich																			The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —7 7 mm.; Thermometer, +0 3 Cent. Relative Humidity, —6 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Upper. 0-10.	Clouds. Amount. Lower. 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Constantinople			29.96	760.9	59.4	15.2	68	ESE	4	2.0			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.78	756.3	77.4	25.2		S			2		10			0	0	Covered	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.77	756.2	73.9	23.3	75	SW			3		1ks		SW	0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Upper. 0-10.	Clouds. Amount. Lower. 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Bathurst, N. B.					39.8	4.3		SW	6	2.7			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.05	763.3	30.11	764.8	43.5	6.4	55	NW	5	2.2		10ck	0	W		0.01	0.3	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.15	765.8	30.20	767.1	38.0	3.3	100	Calm	0	0		0	2s			0.040	1.02	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.66	753.4	29.85	758.2	60.5	15.8	54	SW			1		10s			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.87	758.7	30.04	763.0	35.0	1.7		E			3	10k	0			0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.85	758.2	29.87	758.7	42.0	5.6	83	S	25	11.2			10n			0.11	2.8	Light rain	J. McWilliams.
Fredericton, N. B.	30.10	764.5	30.17	766.3	39.9	4.4	85	S	4	1.8			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.91	734.3	29.73	755.1	49.5	9.7	89	E	14	6.3		5k	5ks	SE		0	0	Threatening	James Stewart.
Granton, Ontario	28.86	733.0	29.94	760.5	60.0	15.6	71	SW			1	0	0			0	0	Clear	James Grant.
Halifax, N. S.	30.11	764.8	30.25	768.3	38.2	3.4	98	SE	3	1.3			Fog			Inap.	Inap.	Foggy	A. Allison.
Hamilton, Ontario	29.58	751.3	29.94	760.5	62.1	16.7	70	W			1	0	0			0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.55	750.6	29.88	758.9	49.5	9.7	78	S	2	0.9		0	0			0.04	1.0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	30.21	767.3	30.25	768.3	42.0	5.6	91	S	4	1.8			10n			0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.70	754.4	29.90	759.4	50.9	10.5	81	S	10	4.5		Haze	Haze			Inap.	Inap.	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.71	754.6	29.75	755.6	29.5	— 1.4	85	N			4		10n			0.25	6.3	Cloudy	J. R. Nason.
Norwood, Ontario	29.17	740.9	29.86	758.4	53.4	11.9	78	SW	3	1.3		8cs	0			0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.11	73 .4	29.80	756.9	53.5	11.9	80	S	10	4.5		2ck	5ks	W		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.95	745.5	30.09	764.3	55.7	13.2	74	Calm			0	0	3ks			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.30	744.2	30.00	762.0	51.1	10.6	79	S	12	5.4		5k	0	NW		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.35	745.5	30.00	762.0	49.1	9.5	99	SW	12	5.4		5c	0	SW		0.01	0.3	Cloudy	M. Payne.
Quebec, Quebec	29.59	751.6	29.91	759.7	42.0	5.6	100	W			3		10n			0.20	5.1	Light rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.30	744.2	29.75	755.6	47.1	8.4	85	E	3	1.3			6s			Inap.	Inap.	Cloudy	W. H. McIntyre.
St. John, N. B.	30.02	762.5	30.19	766.8	40.0	4.4	95	S	7	3.1			Fog			0	0	Dense fog	G. Murdock, C. E.
Saugeen, Ontario	29.12	739.6	29.81	757.2	61.1	16.2	76	SW	23	10.3			10ks			0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.67	728.2	29.93	760.2	55.9	13.3	75	SW	13	5.8		3ck	0			0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	30.24	768.1	30.28	769.1	42.0	5.6	85	SW	3	1 3			10n			0.01	0.3	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.55	760.6	29.93	760.2	53.5	11.9	74	SW	17	7.6		1c	5s	W		0	0	Fair	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.89	733.8	29.93	760.2	61.7	16.5	60	SW	26	11 6		4ck	0			0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	30.14	765.5	30.21	767.3	41.4	5.2	97	SE	6	2.7			Fog			0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.28	769.1	30.54	775.7	45	7.2	53	S				5k	5s			0	0	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.36	771.1	39.2	4.0		SW			1					0.16	4.1		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.98	761.5	30.06	763.5	64	17.8	68	S	8	3.6		Haze	Haze	Calm	Calm	0.01	0.3	Hazy	
Alpena, Michigan	29.14	740.1	29.75	755.6	65	18.3	44	W	11	4.9		0	5s		W	0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.01	736.8	30.16	766.1	55	12.8	93	E	8	3.6			10n		Calm	0.50	12.7	Light rain	
Atlantic City, New Jersey	30.20	767.1	30.21	767.3	57	13.9	87	SW	12	5.4		Haze	0	Calm		0	0	Clear	
Augusta, Georgia	30.06	763.5	30.26	768.6	63	17.2	89	NE	4	1.8			10n		E	Inap.	Inap.	Light rain	
Baltimore, Maryland	30.16	766.1	30.21	767.3	61	16.1	61	SW	10	4.5		0	0			0	0	Clear	
Barnegat, New Jersey	30.15	765.8	30.17	766.3	65	18.3	68	SW	16	7.2		0	0			0	0	Clear	
Bismarck, Dakota	27.78	705.6	29.64	752.8	58	14.4	53	NW	20	8.9		5c	0	Calm		0	0	Fair	
Boerne, Texas	28.52	724.4	29.81	757.2	62	16.7	100	NE	2	0.9			10s		NE	0	0	Cloudy	
Boise City, Idaho	27.13	689.1	30.09	764.3	43	6.1	83	Calm	0	0		0	0			0.08	2.0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	56	13.3	63	W	9	4.0		0	8s		Calm	0.45	11.4	Fair	
Brackettville, Texas	28.77	730.7	29.80	756.9	64	17.8	100	E	6	2.7			Fog		Calm	0	0	Foggy	
Breckenridge, Minnesota	28.63	727.2	29.58	751.3	55	12.8	68	SE	8	3.6		5k	0	S		0	0	Fair	
Brownsville, Texas	29.94	760.5	29.99	761.7	72	22.2	90	Calm	0	0		5k	0	Calm		0.16	4.1	Fair	
Buffalo, New York	29.28	743.7	29.97	761.2	57	13.9	52	SW	14	6.3		2c	Haze	W	Calm	Inap.	Inap.	Clear	
Burkes, Arizona					59	15.0	38	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.68	753.9	29.96	761.0	57	13.9	69	S	14	6.3		8ck	0	W		0	0	Fair	
Cairo, Illinois	29.77	756.1	30.16	766.1	62	16.7	77	Calm	0	0		0	Haze				0	Clear	
Campo, California	27.39	695.7	29.96	761.0	45	7.2	84	SW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.30	769.6	30.31	769.9	67	19.4	69	SE	10	4.5		8k	0	Calm		0	0	Cloudy	
Cape Henry, Virginia	30.26	768.6	30.27	768.8	61	16.1	71	SW	13	5.8		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.28	769.1	30.29	769.4	65	18.3	84	SE	8	3.6		10k	0	W		0	0	Cloudy	
Cape May, New Jersey	30.18	766.6	30.21	767.3	61	16.1	71	SW	17	7.6		0	0			0	0	Clear	
Castroville, Texas	29.16	740.7	29.85	758.2	64	17.8	100	E	3	1.3			10n		E	0.02	0.5	Light rain	
Cedar Keys, Florida	30.03	762.7	30.06	763.5	69	20.6	90	E	13	5.8			10s		NE	0.04	1.0	Cloudy	
Charleston, South Carolina	30.16	766.1	30.21	767.3	69	20.6	70	Calm	0	0		0	8s		Calm	0.12	3.0	Cloudy	
Charlotte, North Carolina	29.39	746.5	30.20	767.1	59	15.0	94	S	4	1.8			10n		S	0.05	1.3	Light rain	
Chattanooga, Tennessee	29.37	746.0	30.18	766.6	57	13.9	81	Calm	0	0			10s		S	0	0	Cloudy	
Cheyenne, Wyoming	24.00	609.6	29.94	760.5	52	11.1	40	W	10	4.5			10s		W	0	0	Cloudy	
Chicago, Illinois	29.30	744.2	29.97	761.2	59	15.0	65	SW	11	4.9		0	0			0	0	Clear	
Chincoteague, Virginia	30.26	768.6	30.28	769.1	58	14.4	96	SW	14	6.3		8cs	0	SW		0	0	Cloudy	
Cincinnati, Ohio	29.53	750.0	30.18	766.6	59	15.0	59	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Cleveland, Ohio	29.34	745.2	30.05	763.3	63	17.2	42	SW	17	7.6		2k	0	W		0	0	Clear	
Coleman City, Texas	28.18	715.8	29.82	757.4	59	15.0	76	E	4	1.8		0	5s		Calm	0.08	2.0	Fair	
Columbus, Ohio	29.29	744.0	30.12	765.0	56	13.3	63	S	3	1.3		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	28.05	712.5	29.70	754.4	61	16.1	82	S	5	2.2			10ks		S	0	0	Cloudy	
Corsicana, Texas	29.56	750.8	30.02	762.5	62	16.7	94	SE	4	1.8			10s		Calm	0.27	6.9	Cloudy	
Davenport, Iowa	29.36	745.7	29.98	761.5	60	15.6	60	SW	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					40	4.4	82	SW			1	5c	0	NW		0.24	6.1	Fair	
Deadwood, Dakota	25.24	641.1			50	10.0	52	Calm	0	0		5c	0	W		0	0	Fair	
Decatur, Texas	28.85	732.8	29.99	761.7	66	18.9	69	SE	4	1.8		0	5ks		SE	0	0	Fair	
Delaware Breakwater, Del.	30.21	767.3	30.23	767.8	61	16.1	71	SW	22	9.8		1cs	0	SW		0	0	Clear	
Denison, Texas	29.22	742.2	30.00	762.0	61	16.1	86	SE	3	1.3			10ks		SE	0.05	1.3	Cloudy	
Denver, Colorado	24.75	628.6	29.97	761.2	48	8.9	49	NW	3	1.3			10s		Calm	0	0	Cloudy	
Des Moines, Iowa	29.08	738.6	29.94	760.5	59	15.0	65	Calm	0	0		0	0			0	0	Clear	
Detroit, Michigan	29.31	744.5	29.97	761.2	58	14.4	58	SW	10	4.5		5cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.34	694.4	29.57	751.1	56	13.3	81	SW	12	5.4		5ck	5s	S	Calm	0	0	Cloudy	
Dubuque, Iowa	29.26	742.9	29.94	760.5	62	16.7	56	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.04	737.6	29.69	754.1	53	11.7	67	NE	2	0.9		3c;k	0	Calm;NW		0	0	Fair	
Eagle Pass, Texas	29.21	741.9	29.93	760.2	67	19.4	84	SE	4	1.8			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.08	764.0	30.15	765.8	38	3.3	95	S	11	4.9			Fog		S	0	0	Dense fog	
Edinburg, Texas					73	22.8	95	Calm			0		10s		Calm	0	0	Cloudy	
El Paso, Texas																			
Erie, Pennsylvania	29.33	745.0	30.02	762.5	64	17.8	43	SW	14	6.3		0	0			0	0	Clear	
Escanaba, Michigan	29.11	739.4	29.75	755.6	51	10.6	65	S	8	3.6			10ks		W	0	0	Cloudy	
Florence, Arizona	28.37	720.6	29.97	761.2	60	15.6	55	SW	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.00	635.0	30.45	773.4	39	3.9	64	SE	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.66	702.6	29.42	747.3	54	12.2	61	NW	9	4.0		5cs	0	SW		0	0	Fair	
Fort Custer, Montana	26.71	678.4			55	12.8	38	W	4	1.8		10ck	0	W		0	0	Cloudy	
Fort Davis, Texas	25.16	639.0	30.12	765.0	56	13.3	63	W	3	1.3		0	0			0	0	Clear	
Fort Elliot, Texas	26.94	684.3	29.11	739.4	59	15.0	82	SE	10	4.5			10s		SE	0	0	Cloudy	
Fort Gibson, Indian Ter.	29.49	749.0	30.02	762.5	62	16.7	77	SE	4	1.8		5c	0	E		0	0	Fair	
Fort Grant, Arizona	25.15	638.8	29.95	760.7	56	13.3	25	E	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.71	729.2	29.96	761.0	60	15.6	88	SE	3	1.3			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.10	688.3			52	11.1	53	SW	3	1.3		5c	0	Calm		0	0	Fair	
Fort McKavett, Texas	27.70	703.6	29.57	751.1	61	16.1	88	E	4	1.8			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.78	731.0	29.88	758.9	60	15.6	88	S	6	2.7			10s		S	0.03	0.8	Cloudy	
Fort Stevenson, Dakota	27.76	705.1			58	14.4	53	NW	16	7.2		5c	0	Calm		0	0	Fair	
Fort Verde, Arizona					47	8.3	70	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.16	715.3	29.73	755.1	50	10.0	86	E	3	1.3			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.94	760.5	29.98	761.5	67	19.4	95	NE	13	5.8			10s		E	0.81	20.6	Cloudy	
Grand Haven, Michigan	29.29	744.0	29.93	760.2	56	13.3	75	S	21	9.4		0	0			0	0	Clear	
Helena, Montana					45	7.2	61	SW	9	4.0		2cs	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.33	745.0	30.10	764.5	61	16.1	55	S	4	1.8		0	0			0	0	Clear	
Indianola, Texas	29.93	760.2	29.96	761.0	70	21.1	95	E	16	7.2			10s		E	0.02	0.5	Cloudy	
Jacksboro, Texas	28.86	733.0	29.95	760.7	70	21.1	90	S	2	0.9			10s		S	0	0	Cloudy	
Jacksonville, Florida	30.08	764.0	30.11	764.8	68	20.0	90	NE	5	2.2			10s		NE	0.24	6.1	Cloudy	
Keokuk, Iowa	29.36	745.7	29.96	761.0	62	16.7	56	SW	5	2.2		0	0			0	0	Clear	
Key West, Florida	30.01	762.2	30.05	763.3	79	26.1	74	SE	12	5.4		5k	0	SE		0.05	1.3	Fair	
Kittyhawk, North Carolina	30.30	769.9	30.33	770.4	61	16.1	82	SW	6	2.7		5cs	2s	SW	SW	0	0	Fair	
Knoxville, Tennessee	29.19	741.4	30.20	767.1	55	12.8	78	N	1	0.4		2k	8ks	SW	SW	0	0	Cloudy	
La Crosse, Wisconsin	29.14	740.1	29.85	758.2	62	16.7	61	S	8	3.6		0	0			0	0	Clear	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	47	8.3	62	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.48	748.8	29.81	757.2	69	20.6	95	NE	2	0.9			10s		NE	0	0	Cloudy	
Leavenworth, Kansas	29.14	740.1	29.97	761.2	56	13.3	69	S	1	0.4		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.74	755.4	30.06	763.5	58	14.4	94	E	2	0.9			10ks		Calm	0	0	Cloudy	
Los Angeles, California	29.68	753.9	30.02	762.5	54	12.2	87	SW	1	0.4			10s		SW	0	0	Cloudy	
Louisville, Kentucky	29.58	751.3	30.14	765.5	60	15.6	60	S	2	0.9		1cs	Sm'e	Calm		0	0	Clear	
Lynchburg, Virginia	29.56	750.8	30.24	768.1	59	15.0	54	W	1	0.4		5c; Hz	Sm'e	W		0	0	Dense smoke	
Madison, Wisconsin	28.92	734.6	29.88	758.9	62	16.7	56	SW	6	2.7		1ck	0	W		0	0	Clear	
Marquette, Michigan	29.01	736.8	29.67	753.6	69	20.6	81	W	16	7.2		5k	0	NW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.33	719.6	30.06	763.5	62	16.7	88	E	4	1.8			10s		Calm	0	0	Cloudy	
Memphis Tennessee	29.72	754.9	30.06	763.5	60	15.6	77	E	6	2.7		5cs	5s	Calm	E	0	0	Cloudy	
Milwaukee, Wisconsin	29.18	741.1	29.88	758.9	64	17.8	43	W	21	9.4		2ck	0	Calm		0	0	Clear	
Mobile, Alabama	29.99	761.7	30.04	763.0	64	17.8	94	N	7	3.1			10s		Calm	0.18	4.6	Cloudy	
Montgomery, Alabama	29.87	758 7	30.10	764.5	61	16.1	94	E	10	4.5			10ks		E	0.16	4.1	Threatening	
Morgantown, West Virginia	29.18	741.1	30.16	766.1	58	14.4	70	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	23.81	604.8	30.17	766.3	34	1.1	90	W	57	25.5			10s		W	0	0	Cloudy	
Nashville, Tennessee	29.55	750.6	30.08	764.0	58	14.4	70	Calm	0	0		5ck	0	S		0	0	Fair	
New Haven, Connecticut	30.02	762.5	30.13	765.3	62	16.7	77	S	4	1.8		5cs	Fog	Calm	Calm	0.04	1.0	Fair	
New London, Connecticut	30.09	764.3	30.14	765.5	59	15.0	76	W	5	2.2		1ck	Haze	W	Calm	0.15	3.3	Clear	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	65	18.3	89	N	6	2.7			10s		Calm	0.20	5.1	Cloudy	
Newport, Rhode Island	30.08	764.0	30.13	765.3	51	10.6	93	SW	8	3.6		2c	Haze	NW		0.08	2.0	Fair	
New River, North Carolina																			
New York, New York	29.97	761.2	30.15	765.8	58	14.4	69	W	11	4.9		0	0			0	0	Clear	
Norfolk, Virginia	30.23	767.8	30.29	769.4	67	19.4	60	SW	9	4.0		5c	0	Calm		0	0	Fair	
North Platte, Nebraska	26.97	685.0	29.50	749.3	49	9.4	44	S	5	2.2		2c	0	W		0	0	Clear	
Olympia, Washington Ter	29.87	758.7	29.91	759.7	44.0	6.7	92	S	2	0.9			10s		S	0.13	3.3	Cloudy	
Omaha, Nebraska	28.79	731.3	29.85	758.2	61	16.1	71	S	2	0.9		0	0			0	0	Clear	
Oswego, New York	29.67	753.6	29.99	761.7	60	15.6	65	S	6	2.7		Haze	0			0.18	4.6	Clear	
Pembina, Dakota	28.76	730.5	29.57	751.1	53	11.7	54	SE	16	7.2		8c	2s	W	Calm	0	0	Cloudy	
Pensacola, Florida	29.99	761.7	30.02	762.5	67	19.4	89	NE	8	3.6		4ck	0	SW		0.49	12.4	Fair	
Philadelphia, Pennsylvania	30.12	765.0	30.18	766.6	60	15.6	71	SW	15	6.7		0	0			0	0	Clear	
Phœnix, Arizona	28.70	729.0	30.48	774.2	59	15.0	48	E	6	2.7		0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.97	761.2	19	—7.2	39	NW	24	10.7		2cs	0	W		0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.98	609.1	29.75	755.6	45	7.2	39	S	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.14	765.5	56	13.3	63	SW	3	1.3		0	0			0	0	Clear	
Port Huron, Michigan	29.27	743.4	29.92	760.0	58	14.4	64	SW	15	6.7		8c	0	NW		0	0	Fair	
Portland, Maine	30.04	763.0	30.09	764.3	52	11.1	66	SE	4	1.8		Haze	0			0	0	Clear	
Portland, Oregon	29 88	758.9	29.96	761.0	47	8.3	92	Calm	0	0			10ks		S	0.07	1.8	Cloudy	
Portsmouth, North Carolina					66	18.9	74		6	2.7		10k	0	S		0	0	Cloudy	
Prescott, Arizona	24.72	627.9	30.08	764.0	41	5.0	49	S	1	0.4		0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.03	762.7	73	22.8	85	E	11	4.9		8cs	0	S		0.13	3.3	Fair	
Red Bluff, California	29.62	752.3	29.97	761.2	56.0	13.3	87	S	9	4.0			10s		S	0	0	Cloudy	
Rio Grande City, Texas	29.70	754.4	29.92	760.0	74	23.3	90	SE	6	2.7			10s		SE	1.37	34.8	Cloudy	
Rochester, New York	29.34	745.2	29.94	760.5	65	18.3	49	W	18	8.0		5cs	0	Calm		0	0	Fair	
Roseburg, Oregon	29.40	746.7	29.97	761.2	42.5	5.8	91	Calm	0	0		2c	0	SW		0	0	Fair	
Sacramento, California	29.93	760.2	30.00	762.0	52	11.1	83	S	14	6.3		0	2s		Calm	0	0	Clear	
St. Louis, Missouri	29.51	749.5	30.09	764.3	55	12.8	68	S	7	3.1		0	0			0	0	Clear	
St. Paul, Minnesota	28.93	734.8	29.72	754.9	62	16.7	56	S	6	2.7		0	0			0	0	Clear	
Salt Lake City, Utah	25 55	649.0	29.88	758.9	49	9.4	51	Calm	0	0		7k	0	W		Inap.	Inap.	Fair	
San Antonio, Texas	29.29	744.0	29.98	761.5	64	17.8	100	NE	3	1.3			10n		Calm	0.04	1.0	Light rain	
San Diego, California	29.96	761.0	30.03	762.7	56	13.3	87	SW	2	0.9			Fog		SE	0	0	Foggy	
Sandusky, Ohio	29.38	746.2	30.03	762.7	61	16.1	50	W	17	7.6		2ck	0	W		0	0	Fair	
Sandy Hook, New Jersey	30.11	764.8	30.14	765.5	63	17.2	67	SW	22	9.8		0	0			0.01	0.3	Clear	
San Francisco, California	30.00	762.0	30.06	763.5	53	11.7	80	W	7	3.1			10s		W	Inap.	Inap.	Cloudy	
Santa Fé, New Mexico	23.25	590.5	29.79	756.7	32	0.0	30	N	2	0.9		0	0			0	0	Clear	
Savannah, Georgia	30.10	764.5	30.20	767.1	66	18.9	84	E	6	2.7			10s		SE	0.40	10.2	Cloudy	
Shreveport, Louisiana	29.83	757.7	30.05	763 3	61	16.1	82	E	2	0.9		0	8s		Calm	0.02	0.5	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.25	768.3	30.28	769.1	68	20.0	74	E	7	3.1		5c;hz	Haze	Calm	Calm	0	0	Hazy	
Socorro, New Mexico	25.31	642.9	29.37	746.0	50	10.0	26	S	8	3.6		0	0			0	0	Clear	
Springfield, Illinois	29.41	747.0	30.07	763.8	60	15.6	57	SW	10	4.5		0	0			0	0	Clear	
Springfield, Massachusetts	29.99	761.7	30.12	765.0	55	12.8	74	Calm	0	0		0	Fog			0.32	8.1	Light fog	
Stockton, Texas	26.85	682.0	29.85	758.2	61	16.1	82	SE	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	30.04	763.0	30.09	764.3	47	8.3	92	S	6	2.7		Haze	0			0.08	2.0	Clear	
Toledo, Ohio	29.34	745.2	30.01	762.2	65	18.3	49	S	4	1.8		2c	0	NW		0	0	Clear	
Tucson, Arizona	27.45	697.2	30.00	762.0	68	20.0	41	S	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.63	752.6	30.13	765.3	43.5	6.4	80	SE	6	2.7		8cs	0	Calm		0	0	Cloudy	
Uvalde, Texas	29.05	737.9	29.85	758.2	66	18.9	79	E	2	0.9			10s		E	0	0	Cloudy	
Vicksburg, Mississippi	29.84	757.9	30.10	764.5	59	15.0	94	E	3	1.3			10s		Calm	0	0	Cloudy	
Virginia City, Montana	24.20	614.7	29.68	753.9	36	2.2	61	SW	12	5.4		0	0			0.12	3.0	Clear	
Visalia, California	29.62	752.3	29.99	761.7	53	11.7	83	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C	30.11	764.8	30.22	767.6	62	16.7	67	S	10	4.5		1cs	0	Calm		0	0	Clear	
Wickenburg, Arizona					57	13.9	41	NW	1	0.4		0	0			0	0	Clear	
Wilmington, North Carolina	30.19	766.8	30.27	768.8	67	19.4	69	SE	1	0.4		8cs	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	37	2.8	63	Calm	0	0		5cs	0	SW		0	0	Fair	
Wood's Holl, Massachusetts	30.10	764.5	30.14	765.5	51	10.6	86	SW	13	5.8		5cs;ck	Haze	Calm;SW		0.04	1.0	Fair	
Yankton, Dakota	28.54	724.9	29.78	756.4	64	17.8	53	SW	10	4.5		0	0			0	0	Clear	
Yuma, Arizona	29.66	753.4	29.81	757.2	59	15.0	59	W	1	0.4		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			56.8	13.8	80	Calm	0	0			10n			0.33	8.4	Cloudy	Thomas Herran.
Havana, Cuba, W. I	30.02	762.5	30.07	763.8	78	25.6	72	SE	1.2	0.5		4cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I					75	23.9	82	Calm	0	0		0	2ks	Calm				Fair	James Gall.
Navassa, W. I	29.98	761.5	30.06	763.5	78.5	25.8	70	E	10	4.5		5k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.98	761.5	29.98	761.5	82	27.8	83	E			2		8ks			0.050	1.27	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.45	748.0	30.01	762.2	79	26.1	85	Calm			0		10s			0	0		Francesco J. Cisneros.
Rivas, Nacaragua								SE				2	2		SSE	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I	30.04	763.0	30.06	763.5	78	25.6	72	Calm	0	0		0	4s		Calm	0.65	16.5		Robert Mason
St. Thomas, W. I														NW					G. O. Gellich.
York Factory, B. A	30.14	765.5	30.18	766.6	11.0	—11.7	90	N	7	3.1		1c	0			0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.09	764.3	67	19.4	95	NE	14	6.3			8		NE	0.84	21.3			Fair	
§ Navy Yard, Portsmouth, N. H.	30.08	764.0	52	11.1	66	SE	3	1.3			5?			0	0			Cloudy?	
Naval Hospital, Yokohama, Japan	30.16	766.1	59	15.0	82	SW			3		0			0	0			Clear	
§ Adams, Gulfito, Costa Rica	29.93	760.2	77	25.0	91	NNW			1		8		NNW					Cloudy	
§ Alaska, Callao, Peru*	29.96	761.0	63	17.2	94	Calm			0		10					Long	SW	Foggy	
§ Alert, Yokohama, Japan	30.09	764.3	66	18.9	74	S			3		0			0	0	Smooth		Clear	
§ Colorado, New York, N. Y.	30.09	764.3	62	16.7	61	SW	15	6.7			2		SW	0	0			Fair	
§ Constitution, Hampton Roads, Va			60	15.6	100	SSW	9	4.0			8		SSW					Cloudy	
§ Enterprise, N. 28° 11′, W. 67° 44′	30.25	768.3	73	22.8	85	ENE			3		4		E			Long	ENE	Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	30.30	769.6	60	15.6	76	SSW	8	3.6			2		SSW	0	0			Fair	
§ Independence, Mare Isl'd, Navy Yard, Cal.	30.05	763.3	52	11.1	??	WSW	6.0	2.7			8		WSW	0	0			Cloudy	
§ Jamestown, Sitka, Alaska*	29.42	747.2	43	6.1	92	Calm			0		10					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	30.02	762.5	74	23.3	95	NE			3		10		NE			Smooth		Light rain	
§ Marion, Off Flores Isl'd, Uruguay	30.29	769.4	52	11.1	54	SSE			4		8			0	0	Mod'ate	S	Cloudy	
§ Michigan, Erie, Pa.	29.96	761.0	52	11.1		SW			3		2		W					Clear	
§ Monocacy, Shanghai, China	29.97	761.2	63	17.2	89	E			1		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	30.18	766.6	68	20.0	84	ESE	8	3.6			10		SE	0	0			Cloudy	
Nipsic, N. 36° 00′, W. 5° 31′	29.85	758.2	65	18.3	58	W			4		10					Light	W	Misty	
§ Onward, Ancon Bay, Peru†	29.95	760.7	64	17.8	94	Calm			0		5		NW			Long	W	Fair	
§ Palos, Shanghai, China	30.01	762.2	62	16.7	100	ESE			1		10							Overcast	
§ Passaic, Washington, D. C.	30.23	767.8	62	16.7	77	SW			3		2			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.05	763.3	55	12.8	80	SW			2		8					Smooth		D. clouds	
§ Powhatan, Annapolis, Md	30.20	767.1	61	16.1	77	WSW			1		0							Clear	
§ Quinnebaug, Safi, Marocco	29.90	759.4	61	16.1	71	WSW			2		8		WSW			Long	NW	Cloudy	
§ Richmond, Shanghai, China	30.00	762.0	66	18.9	84	SE			2		0			0	0			Clear	
§ Rio Bravo, Brownsville, Texas	30.13	765.3	69	20.6	??	ENE	1	0.4			5		NE	0.04	1.0			Fair	
§ Saratoga, N. 38° 24′, W. 49° 10′	30.19	766.8	60	15.6	100	E			4		10			Mod'ate	Mod'ate	Long	E	Rainy	
§ Shenandoah, Montevideo, Uruguay	30.30	769.6	52	11.1	60	SSE			4		10					Mod'ate	S	Cloudy	
§ St. Louis, League Island, Pa.	30.17	766.3	59	15.0	82	SW	15	6.7			2		W	0	0			Clear	
Swatara, N. 5° 50′, E. 94° 11′†	29.82	757.4	84	28.9	79	SSE			2		5		SW			Mod'ate	SW	Fair	
§ Tennessee, N. 13° 32′, W. 77° 36′	29.98	761.5	78	25.6	78	ENE	14	6.3			2		ENE	2.6	66.	Smooth	NE	Clear	
§ Trenton, Smyrna, Turkey	29.89	759.2	75	23.9	68	WNW			4		2			0	0	None		Fair	
§ Tuscarora, Mare Island, Cal.	30.07	763.8	53	11.7	86	SW			2		8		Calm	0	0	Smooth		Cloudy	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.14	765.5	69	20.6	70	WSW			3		0							Clear	
§ Wabash, Boston, Mass.	30.13	765.3	50	10.0	86	SW	8	3.6			8			0.5	13.			Cloudy	
§ Wachusett, Montevideo, Uruguay	30.27	768.8	52	11.1	86	SSE			3		10		Calm	0	0	Mod'ate	S	Cloudy	
Wyoming, Constantinople, Turkey	29.95	760.7	58	14.4	76	N			1-2		2		N			Smooth	N	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 49° 28′, W. 32° 20′	30.54	775.7	54	12.2		S			1		10		SSW			Smooth	SSW	Cloudy	
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 49° 20′, W. 23° 26′	30.40	772.1	52	11.1	79	NE			7		8		ENE	0	0	Mod'ate	NE	Cloudy	
S. S. Ohio, Henry Morrison, N. 41° 40′, W. 64° 32′ *†	30.27	768.8	50	10.0	??	SW			3		5?		SW	1 h'r	1 h'r	Large	W	Cloudy?	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 39° 57′, W. 69° 10′ *†	30.26	768.6	59	15.0	100	SSW			4		2		SW	1 h'r	1 h'r	Mod'ate	SW	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 41° 03′, W. 64° 43′ *	30.03	762.7				SW			4		10		SW	Heavy	Heavy	Mod'ate	SW	Hazy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Rislus.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama, Japan †	30.09	764.3	65	18.3	100	S			3		5		S			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 40′, W. 126° 09′ †	29.95	760.7	51	10.6	100	SSW			4	ks			S	0	0	Smooth	S	D. clouds	J. A. Thompson.
S. S. Oceanic, Metcalf.																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan.																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal. †	30.12	765.0	54	12.2		W			4		10		Calm					Cloudy	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	30.02	762.5	49	9.4		NW			2		5		W					Light fog	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin.																			
§ S. S. Australia, S. 36° 35′, W. 175° 00′	30.08	764.0				ENE			3		10					Mod'ate	ENE	Hazy	F. A. Johnston.
§ S. S. China, W. B. Seabury, San Jose, Guatemala...†	29.88	758.9	73	22.8	81	N			2		10					Mod'ate	SW	Cloudy	Banneman.
S. S. City of Chester, J. M. Lacklan.																			
§ S. S. City of Panama, M. Connolly, N. 10° 10′, W. 56° 02′	29.95	760.7	81	27.2		NE			2		2		NE	0	0	Mod'ate	NE	Fair	J. M. Lacklan.
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.93	760.2	71	21.7		SW			4		8		SW	0	0	Smooth		Cloudy	R. Thompson & J. Anderson.
§ S. S. City of Tokio, J. Maury, N. 26° 09′, E. 122° 43′	30.13	765.3	72	22.2	80	NE			2		8		NE	0	0	Smooth		Cloudy	E. LeSack.
§ S. S. Colima, R. R. Searle, N. 9° 45′, W. 55° 00′	29.98	761.5	83	28.3	91	SE			0-1		5		Calm	0	0	Small	SE	Fair	F. S. Doane.
§ S. S. Dakota, D. E. Griffiths, N. 39° 44′ W. 124° 12′	30.02	762.5	55	12.8	74	SE			1		8		W	0	0	Small	W	Cloudy	D. E. Griffiths.
S. S. Idaho, N. 47° 56′, W. 124° 55′	30.03	762.7				SSW			5		8		E	0	0	Smooth		Cloudy	
§ S. S. Granada, J. M. Cavarly																			
§ S. S. Zalandia, R. C. Ghest, S. 5° 50′, W. 167° 37′	29.85	758.2				NNE			3				NE			Smooth	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 49° 37′ W. 9° 34′	29.75	755.6	44	6.7		NNW			4		5		N	Light	Light	Mod'ate	WNW	Showery	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N. 41° 27′, W. 59° 36′ †	30.49	774.4	55	12.8	87	SW			5		10		SSW	Slight	Slight	Mod'ate	SSW	Fine	W. S. Waugh.
S. S. Celtic, B. Gleadell, N. 51° 18′, W. 12° 08′ *†	30.12	765.0	47	8.3		NNE			6		10		NE	5 h'rs	5 h'rs	Mod'ate	N	Cloudy	J. Jones.
S. S. Republic, P. J. Irving, N. 40° 38′, W. 69° 40′ *†	30.17	766.3	48	8.9		SW			5		2		W	0	0	Mod'ate	WSW	Fair	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.																			
Schr. Adelie Fuller, J. Jorgensen, Cape Cod Light House, Mass	30.10	764.5	49	9.4	85	SSW	10	4.5			Haze			0.65	16.5	Short		Hazy	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis.																			J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 30′, E. 54° 10′ *†	30.08	764.0	77	25.0		SSW			1		2		SSW	0	0	Mod'ate	SW	Fair	L. L. Lewis.
Brigantine George, W. H. Champlin, N. 26° 55′, W. 65° 00′ ††	30.34	770.6	77	25.0		E			3		2		E	Showers.	Showers.	Smooth		Clear	B. F. Woodbury.
Hippolyta, N. 44° 47′, W. 39° 13′ *	30.19	766.8	62	16.7		SE			6		8		S	Drizzles.	Drizzles.	Mod'ate	SE	Fair	
Iron Cross, W. Randall.																			W. Randall.
Barque Syringa, E. Lewis.																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 4, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.93	760.3				SW			5		8			0.197	5.0	Very cloudy	Dr. Ollive.
Nemours			29.84	758.0	64.4	18.0	88	N			3		7			0.449	11.4	Very cloudy	Metge.
Algiers			29.83	757.6	68.0	20.0	74	NE			1		5			0	0	Cloudy	Nicolas.
La Calle			29.91	759.6	64.9	18 3	72	NNW			2		3			0	0	Pretty fair	Fonfrède.
Tunis			29.88	759.0															Jacques.
Sfax			30.02	762.5															Gau
Saida			29.80	756.8															Bernard.
Tebessa			29.96	760.9	73.8	23.2	17	W			6		4			0	0	Cloudy	Watrin.
Geriville					67.1	19.5	29	SSE			7		6			0	0	Cloudy	Brugniaux.
Laghouat			29.91	759.8	74.8	23.8	6	ESE			6		1			0	0	Very fair	Suart.
Biskra			29.85	758.2	82.8	28.2	41	E			1		2			0	0	Fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.01	736.9	29.55	750.5	59.9	15.5	81	W			3		8			0.449	11.4		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.02	737.0	29.77	756.2	59 4	15.2	87	E	10.8	7.5			10			0.039	1.0		Dr. Wierzbicki.
Eperies	28.79	731.2	29.65	753.0	58.6	14.8	91	Calm			0		10s			0 239	6.08		Julius Mikolik.
Gratz	28.40	721.4	29.65	753.0	50.7	10.4	95	N			4		10			0.094	2.4		Andreas Rospini.
Hermannstadt	28.26	717.8	29.64	752.8	64.9	18.3	59	S			5		10			0.045	1.16		Prof. A. Gottschling
Kremsmünster, Observatory	28.39	721.1	29.72	754.8	54.0	12.2	94	W			1		10			0	0		The Staff.
Lemberg	28.74	729.9	29.69	754.2	63.9	17.7	61	SE			4		8			Blank	Blank		Dr. T. Stanecki.
Pola	29.54	750.4	29.65	753.2	56.8	13.8	88	WNW			2		10			0.394	10.0		I.R.Hydrographic Office.
Szathmar	29.23	742.4	29.68	753.8	65.5	18.6	73	E			2		10			0.134	3.4		Pet. Pancsics, S. J.
Szegedin	29.27	743.5	29.54	750.2	70.2	21.2	67	SE			3		7			0.020	0.50		Karl Stancel.
Trieste	29.59	751.6	29.69	754.2	56.8	13.8	97	Calm			0		10			0.831	21.1	Raining	P. Busin.
Vienna	28.95	735.3	29.68	753.9	56.3	13.5	95	NNW			2		10			1.465	37.2		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels																			Royal Observatory
Furnes																			M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.05	763.3	30.15	765.8	47.0	8.3		ENE	15	6.7			4			0	0	Blue sky	W. Boswell.
Ardrossan	30.12	765.0	30.14	765.5	51	10.6		NW			2		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.92	760.0	30.16	766.1	53.1	11.7		NNE	11	4.9			4					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.04	763.0	52.2	11.2		NW	12	5.4			10					Overcast	John Hartnup.
Bolton (Sharples)	29.48	748.8	30.00	762.0	52.9	11.6		NE	44	19.7			2					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.65	753.1	30.04	763.0	50.8	10 4	69	NE			3		10			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	80	26.7		NE			2		7					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.88	758.9	29.97	761.2	52.0	11.1		N			2		10					Overcast	H. Todd.
Cardington			29.96	761.0	53.0	11.7		N			1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.81	757.2	29.94	760.5	54.1	12.3		N			1		8					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.11	764.8	30.15	765.8	50	10.0		NE			4		10					Overcast	J. Mac Gowan.
Dover	29.86	758.4	29.89	759.2	57	13.9		NE			4		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.75	755.6	29.98	761.5	52.9	11.6		SE			2		1					Misty	The Staff.
Fort Napier, Natal	27.79	705.8	29.99	761.7	77.0	25.0		NE			2		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.58	751.3	29.81	757.2	85	29.4		Calm			0		8					D. clouds	
Galway (Queen's College)			30.09	764.3	53.5	11.9		NE			2		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.67	753.6	29.72	754.9	58.7	14.8		E			3		4					D. clouds	Sgt. W. Allen.
Glasgow, (Observatory)	29.92	760.0	30.13	765.3	52.0	11.1		E			1		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.96	759.4	29.91	759.7	49	9.4		N			3		8					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.78	756 4	29.96	761.0	52.0	11.1		N			3		10			Blank	Blank	Overcast	The Staff, for G. B. Airy.
Guernsey	29.68	753.9	29.90	759.4	50	10.0		NE			2		8					D. clouds	Dr. S. E Hoskins, F.R.S.
Helston	30.13	765.3	30.25	768.3	60	15.6		ENE			4	1c				0	0	Fine	M. P. Moyle.
Holyhead	30.02	762.5	30.07	763.8	51	10.6		N			4		1					Blue sky	John Tilston.
Jersey	29.62	752.3	29.92	760.0	52.7	11.5		ENE			3		10					Misty	J. Fisher.
Kew (Observatory)	29.92	760.0	29.96	761 0	52.7	11.5		N	15	6.7			10					Gloomy	The Met'g'l Office.
Leicester (Museum)	29.74	755.4	30.00	762 0	51.2	10.7		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.86	758.4	29.94	760.5	68	20.0		NW			2		2					Blue sky	A. King.
Nairn	30.05	763.3	30.14	765.5	51	10.6		NNE			1		0					Clear	W. D. Penny.
Nassau, Bahamas			30.06	763.5	75.5	24.2		SE			2		10			Blank	Blank	Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.83	757.7	30.02	762.5	52.1	11.2		NNE			3		10k		NNE	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.48	748.8	30.00	762.0	50.8	10.4		NNE			4		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.74	755.4	30.00	762.0	54	12.2		N			2		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.86	758.4	29.94	760.5	58 6	14.8		E			3		5					D. clouds	John Merrifield.
*Roche's Point	30.00	762.0	30.10	764.5	55	12.8		E			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.82	757.4	29.98	761.5	55	12.8		ENE			1		3					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.17	766.3	47	8.3		NW	12	5.4			1					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.64	752.8	29.70	754.4	65.0	18.3		N			1		0			Blank	Blank	Gloomy	Serg't W. H. Lyne.
Sheffield	29.76	755.9	30.03	762.7	51.1	10.6		NE			2		10			0.06	1.5	Overcast	W. F. Cooper.
Silloth Rectory	30.07	763.8	30.10	764.5	52.3	11.3	68	E			5		8			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.05	763.3	53.8	12.1		NE	16	7.2			10					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.74	755.4	29.96	761.0	59.8	15.4		NE			5		5					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.94	760.5	29.96	761.0	64	17.8		S			4		4					D. clouds	W. Newcombe.
Valencia Observatory)	30.07	763.8	30.09	764.3	53.3	11.8		NE	25	11.2			3					Misty	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.01	762.2	30.05	763.3	80.0	26.7	47	S	9.8	4.4		0	1			0	0	Clear.	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.94	760.5	61.0	16.1	63	W			1		5			0	0		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.17	766.3	50.0	10.0		E			2		2k			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.82	757.4	30.01	762 2	78 0	25.6	65	SSE	8.5	3.8		2	4	WNW	SSW	0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	30.19	766.8	30.28	769.1	51.6	10.9	95	S	4	1.8			2			0.03	0.8	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.20	767.1	48	8.9		N			3	3	3	N		0	0		J. Youngclause.
North Unst, Shetland I's			30.09	764.3				NW			6	5	5	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Observer.
H. M. S. Alert			Capt. J. P. Maclear, R.N.
City of Agra			Capt. Thos. Young.
City of Cashmere			Capt. W. M. Grieve.
Barque Commewyne			Capt. Jas. Buchan.
Ship British Commodore			Capt. J. W. Thorne.
Barque Decapolis			Capt. T. M. Almond.
Barque Dochra			Capt. H Spalding.
S. S. Ethiopia			Capt. A. Campbell.
Barque Fedalma			Capt. H. L. Fox.
Brig. Fylde			Capt. L. C. Dart.
S. S. German. S. 33° 42′, E. 26° 38′			Capt. C. D. Coxwell.
S. S. Gordon Castle			Capt. Wm. Waring.
Barque Hope			Capt. Jas. Campbell.
S. S. Richmond			Capt. W. H. Stuart.
Barque Royal Alexandra, N. 46° 46′, W. 14° 35′			Capt. W. P. Hughes.
S. S. Strathleven			Capt. C. W. Pearson.
S. S. Sunbeam			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5	29.96	761.0	68.4	20.2	83	SE			2	8ck				0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced. Inches.	Barometer. Reduced. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Copenhagen	29.85	758.2	29.90	759.4	53.1	11.7	73	ESE			2		9						
Fanöe	29.84	757.8	29.85	758.3	54.0	12.2	91	E			4		10						
Godthaab (Greenland)																		Snowing	
Stykkisholm (Iceland)	29.52	749.9	29.57	751.0	41.4	5.2	72	SW			7		8						
Thorshavn (Fanöe)	29.99	761.8	30.03	762.7	46.4	8.0	83	SW			9		10						
Vestervig	29.82	757.4	29.91	759.8	55.4	13.0	80	ENE			4		10						

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced. Inches.	Barometer. Reduced. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.32	744.8	29.87	758.8	59.9	15.5	64	NE			2		2			0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.75	755.6	29.86	758.4	65.8	18.8	67	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.61	752.0	29.86	758.4	58.1	14.5	58	N			3		7k		NNE	0	0		Klein, Commandant.
Avignon, Normal School	29.70	754.4	29.78	756.4	72.7	22.6	52	SE			1		k		SSW	0	0		Giraud, Director.
Bar-sur-Seine	29.25	743.0	29.80	756.8	64.0	17.8	41	NE			1		5kn			0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.60	751.8	29.86	758.5	58.6	14.8	72	NE			1		8		ENE	0.187	4.95	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.89	733.8	29.76	755.8	66.2	19	46	NE			1		2		N	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.53	750.1	29.73	755.1	66.7	19.3	48	ESE			1		5		SE	0.079	2.0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.92	734.6	29.84	757.9	70.2	21.2	48	W			2		2k	S	S	0	0	Slightly cld'y	Marlot, Director.
Bourges, Normal School	29.26	743.3	29.81	757.1	62.2	16.8	70	N			1		5		NE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.63	752.6	29.87	758.7	58.6	14.8	80	NE			3		2		NE	0	0	Misty	Ch. de Rermaree, Dir
Caen, Normal School	29.74	755.5	29.82	757.4	55.4	13	82	NE			1		10			0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.29	744.0	29.69	754.1	70.9	21.6	44	E			2		2		E	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.48	748.9	29.80	756.8	69.1	20.6	63	W			1		5		E	0.016	0.4	Cloudy	Jadot, Director
Chartres, Normal School	29.22	742.1	29.78	756.4	62.6	17	94	N			1		7		S	0.16	4.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.42	721.9	29.73	755.2	65.5	18.6	52	E			1		0			0.012	0.3		Alluard, Director.
Commercy, Normal School	28.94	735.1	29.78	756.5	61.2	16.2	49	SE			1		kn	SE	SE	0	0	Threatening	Dr. Coullet, Director.
Commune de Gréasque*	28.71	729.3	29.85	758.3	65.8	18.8	47	SW			3		2		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.06	738.0	29.80	756.9	66.9	19.4	57	WNW			1		k			0.256	6.5		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.60	751.8	29.81	757.1	66.2	19.0	53	NE			1		5		SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.54	750.4	29.85	758.1	62.6	17	52	ESE			1		8		S	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.85	732.9	29.71	754.6	65.8	18.8	47	W			1		2k		NE			Slightly cl'dy	M. Cadoret, Director
Lorient, Naval Observatory	29.73	755.2	29.84	758.0	63.0	17.2	46	NE			3		5		NE	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.16	740.6	29.76	755.8	68.7	20.4	35	NE			1		kn		NNE	0	0		Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.54	750.2	29.80	757.0	66.7	19.3	68	SW			1		3		SW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.70	729.0	29.72	754.8	62.6	17	52	ESE			1		kn		ESE	0	0		Barbier, Director.
Mont-Louis	24.61	625.0	29.84	758.0	46.4	8.0	65	SW	5.6	2.5			8		W	0.012	0.3		M. Cave, for Dr. Fines.
Nice	29.66	753.4	29.70	754.3	68.7	20.4	64	SW			4		1	SW	SW	0	0	Clear	Capt. Boissiere, Director.
Nismes, Normal School	29.57	751.1	29.77	756.2	71.4	21.9	42	SW			1		2		SW	0	0	Slight ycl'dy	M. Boyer, Director.
Perpignan	29.61	752.0	29.71	754.7	64.9	18.3	65	NE	11.2	5.0			5	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.27	565.7			32.0	0.0							10	N	S	0.075	1.9	Snowy	M. Bayac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.74	730.1	29.77	756.2	68.0	20	47	N			1		2k	N	N	0.16	4.	Slightly cl'dy	M. Tallieu
Puy de Dome (Summit) Ob	24.95	633.8			45.7	7.6	76	ESE			3		2			0.020	0.5	Misty	Alluard, Director.
Rochefort, Naval Obs'y	29.77	756.1	29.80	756.9	67.5	19.7	50	ENE			1		10	ENE	ENE	0	0	Covered	Lt E. Devante, Director
Rouen, Normal School	29.78	756.5	29.87	758.7	61.9	16.6	59	NE			1		5		NE	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.87	758.7	29.90	759.5	59.5	15.3	66	ENE			3		1	NE	NE	0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.66	753.3	29.82	757.5	66.2	19.0	44	NE			1		5		ESE	0	0		E. Renou, Director.
Tarbes, Normal School	29.03	727.3	29.68	753.9	64.4	18	80	E											T. Huguet, Director
Toulouse, Observatory	29.05	737.8	29.76	756.0	68.2	20.1	51	NE			1		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.61	752.0	29.80	757.0	68.7	20.4	41	ENE			1		8		E	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.34	745.3	29.84	757.8	60.8	16.0	58	N			1					0.699	17.74		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.11	739.5	29.80	757.0	68.0	20	55	E			1		2			0.559	14.2	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.21	767.3	30.24	768.0	77.0	25										0.16	4.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.55	750.5			64.4	18.0	44	NE			1		5		SSW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.88	759.0	29.91	759.6	60.8	16.0	95	ESE	9.8	4.4			0			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.90	34.1	29.76	755.9	66.9	19.4	39	SW			2		4k	S		0	0		Prof. Dr. Hoh.
Berlin	29.62	752.3	29.79	756.6	56.8	13.8	86	E			1		10			0.106	2.7		Prof. Dr. Arndt.
Breslau	29.26	743.2	29.79	756.6	58.3	14.6	81	NE			2		10			0.187	4.76		Royal University Obs'y.
Carlsruhe	29.33	745.0	29.74	755.4	68.0	20.0	47	N			0		5	S		0	0		Albert Senz.
Cassel	29.15	740.5	29.76	755.8	67.1	19.5	33	NNW			4		5			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.48	748.9	29.85	758.2	69.8	21.0	20	NNE			0		8			0	0		Physical Society.
Friedrichshafen	28.35	720.1	29.75	755.7	62.1	16.7	57	SW			2		8	SW		0.118	3.0		Chief Telegrapher Wilhelm.
Hamburg	29.75	755.7	29.82	757.5	57.7	14.3	88	E			1		10			0	0		Dr. Reinhold Kleeman.
Kiel	29.82	757.4	29.84	757.8	56.5	13.6	85	NE			1		10			0.311	7.90		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.86	758.5	29.95	760.6	60.8	16.0	53	SE			7		8	SE		0	0		Prof. E. Luther.
Köslin			29.84	757.9	60.4	15.8		SE			2		4			0	0		H. Müller.
Leipsic Observatory	29.36	745.8	29.78	756.3	61.9	16.6	65	NNW			1		8	NW		0.039	1.0	Hazy	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.57	751.1	29.80	756.8	61.9	16.6	80	NNE			2		4k	N		0.181	4.6		Dr. Assmann.
Memel	29.95	760.7	30.00	761.9	64.6	18.1	37	E			4		5ks						Reinbrecht & Issermann.
Munich	27.96	710.3	29.81	757.2	59.7	15.4	57	NE			2		9	SW		0.004	0.1		Dr. C. Lang.
Neufahrwasser	29.91	759.6	29.92	760.0	53.6	12.0	68	NE			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.24	742.6	29.76	755.9	69.4	20.8	44						6			0	0		Reallehrer Dicknether.
Posen	29.55	750.6	29.84	757.9	53.8	12.1	76	NE			2		10			0.012	0.3		Prof. Dr. Magener.
Strassburg (in Alsace)	29.25	743.0	29.78	756.5	67.6	19.8	53	SSE			2		7	W				Thunder-storm	Imp. University Observatory.
Stuttgart	28.83	732.2	29.69	754.1	66.6	19.2	43	N					2	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.29	718.6	29.86	758.4	65.1	18.4	54	NNW	0.4	0.2			5k		NE	0	0		Reallehrer J. Hopfner.
Wustrow	29.83	757.6	29.85	758.2	57.6	14.2	73	NE					10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.43	747.4	29.80	757.0	77.2	25.1		SW			2.0		5					½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.56	750.8	29.61	752.1	84.0	28.9	75	SW	42	18.8			0			0	0	Blue sky	
Deesa	29.11	739.3	29.55	750.7	104.0	40.0	10	WSW	13.5	6.0			0			0	0	Misty	
Bombay	29.74	755.5	29.78	756.4	86.4	30.2	72	W	12	5.4			5		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.92	709.1	29.74	755.3	87.7	30.9	82	WNW	26	11.6			0			0	0	Blue sky	
Belgaum	27.28	693.0	29.80	756.9	79.8	26.6	66	WSW	12	5.4			0			0	0	Misty	
Lahore	28.76	730.4	29.46	748.3	102.	39.1	18	Calm	1.2	0.5			5			0	0	Blue sky	
Roorkee	28.66	728.0	29.54	750.2	87.8	31.0	38	SE	5	2.2			2			0	0		
Agra	28.95	735.3	29.49	749.0	98.6	37.0	39	E	7.1	3.2			0			0	0		
Nagpur	28.55	725.2	29.54	750.2	101.9	38.8	14	SW	5.2	2.3			5	SW		0	0	D. clouds	
Jubbulpore	28.19	716.0	29.48	748.9	102.2	39.0	11	NW	6.3	2.8			8			0	0	Overcast	
Lucknow	29.28	743.8	29.66	753.2	82.2	27.9	58	ENE	5.4	2.4			0			0	0	Blue sky	
Allahabad	29.26	743.2	29.57	751.0	86.7	30.4	45	ENE	4.6	2.1			0			0.07	1.8	Blue sky	
Patna	29.43	747.6	29.62	752.2	80.1	26.7	61	NE	3.2	1.4			6	NE	N	0	0	D. clouds	
Hazaribagh	27.54	700.1	29.57	751.0	74.8	23.8	68	ENE	12.4	5.5			3			0.15	3.8	Raining	
Cuttack	29.48	748.6	29.56	750.7	89.1	31.7	62	S	5.9	2.6			4			0	0	D. clouds	
Calcutta (Alipore)	29.68	753.7	29.70	754.3	76.2	24.6	62	NNE	19.0	8.5			10					Showery	
Goalpara	29.25	743.0	29.67	753.6	69.0	20.6	90	ESE	5.0	2.2			9		W	0.33	8.4	Gloomy	
Chittagong	29.62	752.3	29.71	754.6	83.5	28.6	77	SW	5.8	2.6			0			0	0		
Sibsagar	29.44	747.8	29.78	756.4	75.1	23.9	85	NE	3.0	1.3			10	W	W	0.27	6.9	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.28	743.7	29.69	754.0	57.7	14.3	20	Calm	0	0			10			0.177	4.5		Prof. Giovanni Clodig.
Milan	29.14	740.2	29.65	753.0	68.7	20.4	56	SSW	4.3	1.9			4	W		0	0		Prof. Schiaparelli.
Padua	29.56	750.7	29.66	753.4	66.7	19.3	60	SW	7.4	3.3			7			0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.76	730.5	29.66	753.4	66.4	19.1	49	SSE	3.1	1.4			2	E		0	0		Prof. P. F. Denza.
Genoa	29.56	750.8	29.75	755.6	64.0	17.8	67	SW	5.6	2.5			1	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.79	705.9	29.70	754.3	65.8	18.8	27	NE			4		0			0	0		Prof. D. C. Bruno.
Pesaro	29.65	753.0	29.69	754.2	62.2	16.8	67	NW	6.9	3.1			8	W		0.173	4.4		Prof. Luigi Guidi.
Florence	29.49	749.1	29.74	755.5	66.2	19.0	56	W			4		5	WSW		0.110	2.8		Cav. F. Meucci.
Leghorn	29.71	754.5	29.79	756.6	64.6	18.1	79	W	6.9	3.1			3			0	0		Prof. P. Monte.
Rome	29.61	752.2	29.79	756.6	67.3	19.6	65	W	18.6	8.3			1			0.027	0.7		Prof. P. S. Ferrari
Lecce	29.52	749.9	29.77	756.2	69.1	20.6	50	WSW	18.6	8.3			2			0.142	3.6		Prof. C. De Giorgi
Cosenza	28.95	735.2	29.82	757.5	66.0	18.9	69	NW	0.7	0.3			10			0.717	18.2		Prof. D. Conti.
Cagliari	29.68	753.9	29.87	758.7	68.0	20.0	47	NW			4		2	NW		0.343	8.7		Prof. A. Pacinotti.
Palermo	29.67	753.5	29.91	759.8	68.9	20.5	47	WSW	13.7	6.1			3	WNW		0.083	2.1		Prof. G. Ciacciatore.
Syracuse	29.78	756.4	29.32	757.5	74.5	23.6	48	WNW	7.4	3.3			3	WNW		0.020	0.5		Prof. V.G. Guliano.
SUB-SERIES																			
Naples, S. R.	29.28	743.7	29.79	756.6	65.1	18.4	71	NNW	6.9	3.1			6	NW		1.358	34.5		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					60.7	15.9	84	W	1.5	0.7			2s			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.80	756.9	30.00	762.0	60.1	15.6	85	S	0.8	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.95	760.7	30.02	762.5	56.9	13.8	96	SE	1.8	0.8		0	9s			0.020	0.51	Foggy	The Staff.
Wakayama	29.95	760.7	30.01	762.2	62.5	16.9	85	S	1.2	0.5			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.03	635.7	30.17	766.2	46.4	8.0	40	Calm			0	3cs	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.67	601.3			59.0	15.0	55	Calm	0	0		1s	0	SW		0	0	Squally	Vicente Fernandez.
Leon	24.43	620.5	30.10	764.5	60.1	15.6	62	N			1	0	0			0	0	Very hazy	Prof. M. Leal.
Mazatlan	29.67	753.6	29.93	760.2	66.0	18.9	100	E			1	0	0			0	0	Foggy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.7	30.06	763.6	53.2	11.8	76	Calm	0	0		5c	0	W		0	0	Fair	The Staff
Morelia	24.0.†	610.2†			65.8	18.8	58	S			3	3c	6k	E	S	Inap.	Inap.	Cloudy	M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.8	29.89	759.3	54.7	12.6	45	SW			1	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.43	595.0	30.21	767.4	51.8	11.0	40	Calm	0	0		1c	0	E		0.004	0.1	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.1	30.04	763.1	64.6	18.1	47	SE			1	1	1	W	SE	0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.85	758.2	29.86	758.5	77.9	25.5	92	SE			1	7	1	SE	E	0	0	Cloudy	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.57	573.2	30.14	765.5	55.9	13.3	56	Calm			0	0	0			0	0	Very clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.4 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,295.8 m., or 7,433.9 ft., Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	29.88	758.9	29.88	758.9	52.2	11.2		WNW			3					0	0		
Groningen	29.76	755.8	29.81	757.2	59.9	15.5		NW								0	0		
Helder	29.83	757.6	29.83	757.6	60.4	10.2		NNW			2					0	0		
Hellevoetsluis	29.84	757.8	29.84	757.8	55.0	12.8	76	NW			1					0	0		
Utrecht	29.80	756.8	29.84	758.0	58.1	14.5	75	NNW			2		8			0.008	0.2	Very cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.00	762.0	30.06	763.4	51.4	10.8	68	NNW	14.8	6.6			0			0	0		
Brönö	29.90	759.4	29.94	760.4	44.2	6.8	88	SW	22	10			10			0.197	5.0	Raining	
Christiania	29.82	757.3	29.96	760.9	64.4	18.0	38	SW	7	3			5			0	0		
Tromsö	29.59	751.5	29.64	752.9	42.4	5.8	76	SW	9	4			10			0.201	5.1	Raining	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.11	764.7	30.34	770.5	60.8	16.0	68	ENE			3		5			0	0		Dr. J. A. Sampaio.
Campo Major	28.67	728.3	29.66	753.4	58.3	14.6	55	W	5.6	2.5			10			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.08	763.9	30.16	766.1	60.4	15.8	46	SW	4.9	2.2			2			0.193	4.9		Capt. D. A. de Cunha.
Lisbon Observatory	29.32	744.6	29.67	753.7	58.5	14.7	55	SW	16.1	7.2			6	SW		0	0		The Staff.
Ponta Delgada (Azores)	30.15	765.8	30.22	767.7	60.8	16.0	59	NE	13.0	5.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindêllo [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. S. Nicolam, Benguela			29.95	760.8	75.2	24.0		SW			3		2		SW	2	SW		D. clouds	C. J. de Sonna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.33	770.3	75.2	24.0		ENE			2		5		ENE	2	SE	2	D. clouds	Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.96	760.9	78.8	26.0		NW			3		7			1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.11	764.8	78.8	26.0		ESE			2		10		ESE	1		1	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.85	758.3	29.87	758.8	44.1	6.7	78	W	2	1			8ks						Capt. Sseliwerstow.
Astrakhan	30.21	767.3	30.13	765.2	61.0	16.1	39	SE	2	1			8k;s					Light clouds	Capt. Wisganow.
Barnaul	29.79	741.4	29.69	754.2	40.5	4.7	100	NNE	0	0			10			Blank	Blank		Meteorological Obs.
Dorpat	29.90	759.4	30.14	765.5	62.8	17.1	38	WSW	2	1			5k						Prof. Dr. Weihrauch.
Ekaterinburg	28.76	730.4	29.73	755.1	38.7	3.7	54	WNW	22	10			10					Light snow.	Meteorological Obs.
Irkutsk																			
Kasan	29.74	755.4	30.02	762.4	51.1	10.6	48	WSW	2	1			7						Physical Cabinet.
Kertch	29.89	759.1	29.91	759.6	64.8	18.2	68	NE	7	3			0						Lagorio.
Kieff	29.39	746.6	30.03	762.8	50.9	10.5	85	E	7	3			10ks;n						Physical Cabinet.
Krotkowo*	29.65	753.1	30.13	765.4	44.1	6.7	84	NW	2	1			7kn						Cand. Fatjanow.
Lugan	29.91	759.7	30.11	764.8	64.1	18.0	30	ENE	13	6			10					Light clouds	Meteorological Obs.
Moscow	29.61	752.2	30.16	766.0	57.2	14.0	52	N	7.8	3.5			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.87	758.7	29.94	760.5	74.7	23.7	35	ESE	13	6			7cs						Kurdakof.
Nikolaièvsk, on the Amoor	30.04	763.0	30.13	765.2	30.2	—1.0	82	SE	16	7			10n						
Nukuss	29.48	748.7	29.70	754.4	75.4	24.1	43	NNE	29	13			0						
Orenburg																			
Pekin (China)	29.74	755.3	29.88	758.9	64.0	17.8	45	Calm	0	0			3k						Physical Observatory.
St. Petersburg	30.09	764.3	30.11	764.7	55.0	12.8	65	NW	13	6			1k;ks						Central Physical Obs.
Tashkend	28.25	717.6	29.73	755.2	80.6	27	41	Calm	0	0			0						Teich, A. M.
Tiflis	28.52	724.4	29.92	760.0	59.0	15.0	89	Calm	0	0			10						Physical Observatory.
Vladivostock																			
Warsaw	29.41	747.0	29.83	757.6	59.5	15.3	64	ESE	13	6			9ks						Astronomical Obs.
Wilna	29.64	752.9	30.06	763.4	59.9	15.5	55	SSE	4	2			7						Astronomical Obs.
Yeniseisk	29.71	754.5	29.99	761.8	46.8	8.2	64	SE	11	5			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.69	754.0	29.79	756.6	63.7	17.6	62	SSE	3.9	1.75		1ck				0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.66	753.4	29.72	754.8	73.2	22.9	57	SE	2.8	1.27		3	2	S		0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.78	680.3			61.2	16.2	49	SW	3.8	1.69			6			0.020	0.5	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.53	699.3	29.73	755.1	58.5	14.7	63	SW	6.7	3.00		0	8			0.146	3.7	Very cloudy	The Staff.
Murcia, Met. Obs'y	29.59	751.6	29.74	755.3	73.0	22.8	49	SW	3.1	1.39		4	5	NE		0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.69	728.7	29.58	751.3	54.0	12.2	67	SE	7.4	3.3			10			0.024	0.6	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	761.0	30.03	762.7	80.1	26.7	70	SSE	1.8	0.8		7c;cs	0	W		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.82	757.4	29.87	758.7	84.2	29.0	76	SE	2.7	1.3						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.63	752.5	29.73	755.0	63.3	17.4	57	SSE	10.6	4.7		0	10		SSE	0.644	16.4		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.03	762.8	30.12	765.1	78.1	25.6	87	SSE	7.5	3.34		4cs	2k	E	E	0.128	3.25	Cloudy	Enriquelades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.78	756.4	29.82	757.4	39.6	4.2	.....	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	29.83	757.7	29.88	759.0	57.6	14.2	55	S	.....	.....	4	.....	7	.....	.....	0	0	.....	
Hernosand	29.86	758.5	29.91	759.8	62.6	17.0	46	S	.....	.....	4	.....	2	.....	.....	0	0	.....	
Stockholm	29.88	759.0	30.06	763.5	61.2	16.2	35	SW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Wisby	29.94	760.5	30.00	762.0	62.6	17.0	48	SSW	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.91	759.8	30.00	762.0	64.4	18	34	S	15.2	6.8	.....	.....	0	.....	.....	0	0	.....	Nils Ekholm.

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

Swedish Naval Series.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia, N. 44° 24′, W. 19° 39′	.....	.....	30.01	762.2	53.4	11.9	70	N	.....	.....	7	.....	4	.....	.....	.....	.....	.....	Squally	J. P. Pahlson.
H. M. Corvette Balder, N. 57° 30′, E. 8° 54′	.....	.....	29.93	760.1	50.4	10.2	93	NE	.....	.....	2	.....	4	.....	.....	.....	.....	.....	D. clouds	Capt. A. C. Schonmeyr.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.37	720.5	29.77	756.2	61.3	16.3	53	NNE	.....	.....	2	.....	3	.....	.....	0.772	19.6	Cloudy.	The Observatory.
Zurich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.1 mm.; Thermometer, +1.5 Cent. Relative Humidity, —5 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.75	755.7	71.6	22.0	51	NE	0	0	.....	.....	8	.....	SW	0.047	1.2	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.87	758.8	72.0	22.2	.....	SW	.....	.....	2	.....	2	.....	.....	0.12	3.	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.85	758.2	74.8	23.8	73	SW	.....	.....	3	c	3s	.....	SW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	40.8	4.9	.....	NW	6	2.7	.....	0	4ks	.....	.....	0	0	Fair	Hon. J. Ferguson.
Chatham, N. B.	30.02	762.5	30.08	764.0	44.1	6.7	52	W	4	1.8	.....	2k	0	W	.....	0.02	0.5	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.98	761.5	30.02	762.5	44.5	6.9	66	NW	14	6.3	.....	0	0	.....	.....	0.110	2.79	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.95	760.7	30.14	765.5	48.2	9.0	66	E	.....	.....	2	6cs	0	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.92	760.0	30.08	764.0	38.0	3.3	.....	NE	.....	.....	2	0	2ks	.....	.....	0.04	1.0	Clear	H. A. Johnson.
Father Point, Quebec	30.14	765.5	30.17	766.3	37.0	2.8	81	NW	10	4.5	.....	2k	0	.....	.....	0.34	8.6	Clear	J. McWilliams.
Fredericton, N. B.	30.06	763.5	30.11	764.8	45.4	7.4	65	NW	9	4.0	.....	0	0	.....	.....	0.150	3.81	Clear	Prof. Harrison.
Fort Garry, Manitoba	28.92	734.6	29.75	755.6	43.0	6.1	73	NE	2	0.9	.....	1c	3s	NE	.....	.....	0	Fair	James Stewart.
Granton, Ontario	29.02	737.1	30.10	764.5	60.0	15.6	71	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.91	759.7	30.04	763.0	49.0	9.4	86	N	4	1.8	.....	.....	10ks	.....	.....	.....	0	Cloudy	A. Allison.
Hamilton, Ontario	29.74	755.4	30.10	764.5	64.5	17.9	72	W	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.76	755.9	30.09	764.3	50.5	10.3	84	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.89	759.2	29.93	760.2	42.2	5.7	92	SW	5	2.2	.....	.....	10n	.....	.....	0.17	4.3	Overcast	C. H. Rigby.
Montreal, Quebec	29.98	761.5	30.18	766.6	43.8	6.6	65	NE	16	7.2	.....	6ck	0	.....	.....	0.02	0.5	Fair	C. H. McLeod, C. E.
Moose Factory, Ontario	30.28	769.1	30.32	770.1	19.0	—17.2	83	E	.....	.....	3	.....	10s	.....	.....	0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.40	746.7	30.09	764.3	55.0	12.8	52	E	6	2.7	.....	0	2s	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A.
Parry Sound, Ontario	29.36	746.5	30.08	764.0	53.0	11.7	61	SE	12	5.4	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.13	765.3	58.2	14.6	44	W	.....	.....	1	3k	0	.....	.....	0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.43	747.5	30.13	765.3	50.1	10.1	86	S	6	2.7	.....	5c	0	NW	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.47	748.5	30.10	764.5	57.1	13.9	76	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	M. Payne.
Quebec, Quebec	29.86	758.4	30.19	766.8	40.0	4.4	82	Calm	.....	.....	0	0	3s	.....	.....	0.27	6.9	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.72	754.9	30.19	766.8	41.0	5.0	69	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.92	760.0	30.08	764.0	48.0	8.9	78	N	9	4.0	.....	7k	0	.....	.....	0.005	0.13	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.35	745.5	30.05	763.3	60.3	15.7	68	S	5	2.2	.....	3cs	0	.....	.....	Inap.	Inap.	Fair	K. Stewart.
Stratford, Ontario	28.84	732.5	30.11	764.8	56.1	13.4	69	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.90	759.4	29.94	760.5	43.0	6.1	87	N	6	2.7	.....	.....	10ks	.....	.....	0.17	4.3	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.75	755.6	30.13	765.3	56.0	13.3	64	E	15	6.7	.....	2c	0	.....	.....	0	0	Clear	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A.
Woodstock, Ontario	29.04	737.6	30.08	764.0	66.1	18.9	59	W	6	2.7	.....	0	1ks	.....	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.99	761.7	30.06	763.5	47.6	8.7	83	W	6	2.7	.....	5k	0	W	.....	0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.87	758.7	30.13	765.3	40	4.4	91	S	.....	.....	.....	10k	10s	.....	.....	0.03	0.8	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.84	757.9	44.6	7.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0.12	3.0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.06	763.5	30.14	765.5	67	19.4	64	SW	3	1.3		5k	0	NW		0	0	Fair	
Alpena, Michigan	29.41	747.0	30.06	763.5	45	7.2	68	E	4	1.8		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.06	763.5	57	13.9	93	E	10	4.5			10n		E	0.11	2.8	Light rain	
Atlantic City, New Jersey	30.27	768.8	30.28	769.1	57	13.9	94	SW	9	4.0		0	0			0	0	Clear	
Augusta, Georgia	29.91	759.7	30.11	764.8	65	18.3	78	N	8	3.6		0	8s		E	Inap.	Inap.	Fair	
Baltimore, Maryland	30.20	767.1	30.25	768.3	61	16.1	77	SW	4	1.8		2cs	Haze	Calm	Calm	0	0	Clear	
Barnegat, New Jersey	30.22	767.6	30.25	768.3	67	19.4	64	SW	16	7.2		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.92	709.2	29.77	756.1	55	12.8	61	E	6	2.7			10s		SW	0	0	Threatening	
Boerne, Texas	28.48	723.4	29.75	755.6	66	18.9	100	S	4	1.8			10s		SE	0.07	1.8	Cloudy	
Boise City, Idaho	27.06	687.3	30.02	762.5	54	12.2	43	N	6	2.7			10s		W	0	0	Cloudy	
Boston, Massachusetts	29.96	761.0	30.10	764.5	68	20.0	51	SW	9	4.0		5ck;k	0	Calm		0	0	Fair	
Brackettville, Texas	28.75	730.2	29.77	756.1	69	20.6	95	SE	5	2.2		0	5s		S	0.01	0.3	Fair	
Breckenridge, Minnesota	28.71	729.2	29.67	753.6	58	14.4	76	Calm	0	0			8ks		S	0	0	Cloudy	
Brownsville, Texas	29.87	758.7	29.92	760.0	79	26.1	87	Calm	0	0		0	0			0.54	13.7	Clear	
Buffalo, New York	29.42	747.3	30.12	765.0	53	11.7	67	SW	4	1.8		5c	Haze	Calm	Calm	0	0	Fair	
Burkes, Arizona					56	13.3	35	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.87	758.7	30.17	766.3	47	8.3	70	N	10	4.5		8cs	0	NW		0	0	Fair	
Cairo, Illinois	29.72	754.9	30.10	764.5	62	16.7	88	NE	4	1.8			10s		Calm	0.12	3.0	Cloudy	
Campo, California	27.37	695.2	29.94	760.5	37	2.8	81	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.17	766.3	30.18	766.6	68	20.0	79	SE	12	5.4			10s		S	0	0	Cloudy	
Cape Henry, Virginia	30.22	767.6	30.23	767.8	62	16.7	83	SE	2	0.9		5k	5s;hz'	SE	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.14	765.5	30.15	765.8	66	18.9	95	E	21	9.4			10s		Calm	0.03	0.8	Cloudy	
Cape May, New Jersey	30.25	768.3	30.28	769.1	60	15.6	82	S	9	4.0		0	0			0	0	Clear	
Castroville, Texas	29.11	739.4	29.79	756.7	68	20.0	95	SE	3	1.3			10s		S	0	0	Cloudy	
Cedar Keys, Florida	29.94	760.5	29.97	761.2	69	20.6	95	NW	12	5.4			10ks		NW	1.69	42.9	Cloudy	
Charleston, South Carolina	29.95	760.7	30.00	762.0	68	20.0	84	NE	10	4.5			10s		NE	0.31	7.9	Threatening	
Charlotte, North Carolina	29.30	744.2	30.11	764.8	58	14.4	88	NE	8	3.6			10s		E	0.07	1.8	Cloudy	
Chattanooga, Tennessee	29.30	744.2	30.10	764.5	59	15.0	82	NE	5	2.2			10s		S	0	0	Cloudy	
Cheyenne, Wyoming	23.95	608.3	29.89	759.2	45	7.2	39	NW	4	1.8		1c	0	NW		0.01	0.3	Clear	
Chicago, Illinois	29.39	746.5	30.06	763.5	63	17.2	62	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Chincoteague, Virginia	30.26	768.6	30.28	769.1	62	16.7	89	S	5	2.2		8cs	0	N		0	0	Cloudy	
Cincinnati, Ohio	29.50	749.3	30.15	765.8	60	15.6	71	Calm	0	0			10ks		S	0	0	Cloudy	
Cleveland, Ohio	29.43	747.5	30.14	765.5	62	16.7	53	SE	4	1.8		0	0			0	0	Clear	
Coleman City, Texas	28.14	714.7	29.77	756.1	58	14.4	100	NE	24	10.7			10n		Calm	0.74	18.8	Light rain	
Columbus, Ohio	29.31	744.5	30.14	765.5	58	14.4	64	S	2	0.9		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	28.06	712.7	29.72	751.9	56	13.3	87	SE	8	3.6		5cs	2ks	W	Calm	0.28	7.1	Fair	
Corsicana, Texas	29.49	749.0	29.95	760.7	63	17.2	94	SE	2	0.9		5cs	0	SE		0.22	5.6	Fair	
Davenport, Iowa	29.41	747.0	30.03	762.7	62	16.7	67	SW	4	1.8		0	0			0	0	Clear	
Dayton, Washington T'y					41	5.0	91	SW			1	0	8s		SW	0.09	2.3	Fair	
Deadwood, Dakota	25.18	639.6			55	12.8	45	SW	8	3.6		0	0			0	0	Clear	
Decatur, Texas	28.77	730.7	29.90	759.4	68	20.0	70	E	8	3.6			10ks		SE	0	0	Cloudy	
Delaware Breakwater, Del	30.24	768.1	30.26	768.6	62	16.7	72	SW	12	5.4		1c	0	Calm		0	0	Clear	
Denison, Texas	29.16	740.7	29.93	760.2	62	16.7	88	SE	4	1.8		0	8ks		S	0.05	1.3	Fair	
Denver, Colorado	24.68	626.9	29.90	759.4	51	10.6	34	S	3	1.3		2c	0	NW		0	0	Clear	
Des Moines, Iowa	29.11	739.4	29.98	761.5	59	15.0	70	Calm	0	0		0	0			0	0	Clear	
Detroit, Michigan	29.44	747.8	30.10	764.5	60	15.6	65	Calm	0	0		0	Haze		Calm	0	0	Clear	
Dodge City, Kansas	27.30	693.4	29.52	749.8	58	14.4	82	S	8	3.6		10ck	0	S		0	0	Cloudy	
Dubuque, Iowa	29.32	744.7	30.00	762.0	62	16.7	51	SE	3	1.3		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.21	741.9	29.89	759.2	43	6.1	75	NE	4	1.8		10cs;k	0	Calm;SW		0	0	Cloudy	
Eagle Pass, Texas	29.14	740.1	29.85	758.2	72	22.2	85	SE	2	0.9		0	0			0	0	Clear	
Eastport, Maine	30.03	762.7	30.10	764.5	47	8.3	62	NW	11	4.9		5c	0	W		0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.43	747.5	30.13	765.3	66	18.9	45	SW	5	2.2		0	0			0	0	Clear	
Escanaba, Michigan	29.34	745.2	29.98	761.5	51	10.6	65	S	6	2.7		0	0			0	0	Clear	
Florence, Arizona	28.39	721.1	29.99	761.7	61	16.1	61	NE	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.49	774.4	39	3.9	55	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.68	703.1	29.46	748.3	51	10.6	59	NW	6	2.7		10cs	0	SW		0	0	Cloudy	
Fort Custer, Montana	26.63	676.4			55	12.8	50	SW	8	3.6		5k	0	SW		0	0	Fair	
Fort Davis, Texas	25.17	639.3	30.13	765.3	57	13.9	47	W	2	0.9		0	0			0	0	Clear	
Fort Elliot, Texas	26.89	683.0	29.08	738.6	54	12.2	67	SE	6	2.7			Fog		SE	0.02	0.5	Foggy	
Fort Gibson, Indian Ter	29.46	748.3	29.98	761.5	63	17.2	72	E	6	2.7		0	0			Inap.	Inap.	Clear	
Fort Grant, Arizona	25.19	639.8	29.99	761.7	54	12.2	17	S	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.57	725.7	29.79	756.7	64	17.8	78	S	10	4.5			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.09	688.1			50	10.0	42	SW	4	1.8		0	0			Inap.	Inap.	Clear	
Fort McKavett, Texas	27.75	704.8	29.64	752.8	60	15.6	88	E	12	5.4			10n		E	0.21	5.3	Light rain	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.70	729.0	29.77	756.1	65	18.3	59	SE	12	5.4			10s		Calm	0	0	Cloudy	
Fort Stevenson, Dakota	27.91	708.9			51	10.6	78	NE	6	2.7			10s		NE	0	0	Cloudy	
Fort Verde, Arizona					53	11.7	36	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.19	716.0	29.75	755.6	51	10.6	93	SW	6	2.7			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.91	759.7	29.95	760.7	72	22.2	90	E	5	2.2		2cs	8ks	W	SE	Inap.	Inap.	Cloudy	
Grand Haven, Michigan	29.44	747.8	30.08	764.0	63	17.2	78	SE	2	0.9		0	0			0	0	Clear	
Helena, Montana					43	6.1	59	S	1	0.4		5cs	0	S		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.32	744.7	30.08	764.0	60	15.6	65	SW	1	0.4		5ck	0	S		0	0	Fair	
Indianola, Texas	29.92	760.0	29.95	760.7	73	22.8	90	E	8	3.6		8c	2s	Calm	SE	0.01	0.3	Cloudy	
Jacksboro, Texas	28.81	731.8	29.89	759.2	75	23.9	77	SE	10	4.5			10s		SE	0	0	Cloudy	
Jacksonville, Florida	29.93	760.2	29.95	760.7	70	21.1	85	NE	3	1.3			10s		NE	2.09	53.1	Cloudy	
Keokuk, Iowa	29.39	746.5	29.99	761.7	62	16.7	67	S	3	1.3		0	Sm'e		Calm	0	0	Dense smoke	
Key West, Florida	30.00	762.0	30.03	762.7	79	26.1	74	SE	4	1.8		2cs	0	Calm		0	0	Fair	
Kittyhawk, North Carolina	30.23	767.8	30.25	768.3	62	16.7	83	E	8	3.6		8cs	0	E		0	0	Cloudy	
Knoxville, Tennessee	29.13	739.9	30.12	765.0	60.5	15.8	64	NE	1	0.4		2cs	2ks	SW	Calm	0	0	Fair	
La Crosse, Wisconsin	29.25	742.9	29.97	761.2	61	16.1	66	S	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	49	9.4	57	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.57	751.1	29.91	759.7	60	15.6	94	NE	8	3.6			10s		NE	0.46	11.7	Cloudy	
Leavenworth, Kansas	29.14	740.1	29.97	761.2	58	14.4	76	Calm	0	0		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.71	754.6	30.02	762.5	60	15.6	94	Calm	0	0		0	5ks		Calm	0	0	Fair	
Los Angeles, California	29.65	753.1	29.99	761.7	55	12.8	81	W	2	0.9			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.54	750.3	30.09	764.3	61	16.1	71	NE	1	0.4		2ck	5s;sme	Calm	Calm	0	0	Fair	
Lynchburg, Virginia	29.55	750.6	30.24	768.1	63	17.2	57	S	1	0.4		8c	Sm'e	W		0	0	Fair	
Madison, Wisconsin	29.04	737.6	30.00	762.0	61	16.1	66	S	4	1.8		0	0			0	0	Clear	
Marquette, Michigan	29.20	741.7	29.86	758.4	71	21.7	33	W	19	8.5		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.36	720.3	30.10	764.5	59	15.0	100	NW	13	5.8			10n		Calm	0.13	3.3	Light rain	
Memphis Tennessee	29.69	754.1	30.02	762.5	66	18.9	79	E	4	1.8			10s		Calm	0	0	Cloudy	
Milwaukee, Wisconsin	29.32	744.7	30.03	762.7	63	17.2	57	SW	10	4.5		0	Haze			0	0	Clear	
Mobile, Alabama	30.01	762.2	30.05	763.3	65	18.3	89	NE	3	1.3		0	0			0	0	Clear	
Montgomery, Alabama	29.83	757.7	30.06	763.5	62	16.7	94	E	4	1.8			10n		Calm	0.06	1.5	Misting	
Morgantown, West Virginia	29.16	740.7	30.14	765.5	60	15.6	65	Calm	0	0			0			0	0	Clear	
Mt Washington, N H	23.88	606.5	30.24	768.1	37	2.8	100	NW	51	22.8			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.58	751.3	30.11	764.8	63	17.2	83	SE	1	0.4			10ks		SE	0.11	2.8	Cloudy	
New Haven, Connecticut	30.06	763.5	30.18	766.6	66	18.9	69	SW	10	4.5		0	Haze		Calm	0	0	Clear	
New London, Connecticut	30.14	765.5	30.18	766.6	62	16.7	72	SW	10	4.5		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	68	20.0	90	SE	3	1.3		5k	Haze	SE	Calm	0	0	Fair	
Newport, Rhode Island	30.11	764.8	30.16	766.1	54	12.2	87	SW	15	6.7		2c	Haze	Calm		0	0	Hazy	
New River, North Carolina					62	16.7	94	NE			1		10n		SE			Light rain	
New York, New York	30.04	763.0	30.22	767.6	59	15.0	81	W	12	5.4		0	0			0	0	Clear	
Norfolk, Virginia	30.17	766.3	30.23	767.8	63	17.2	78	E	2	0.9		0	5ks		SE	0	0	Fair	
North Platte, Nebraska	26.92	683.8	29.39	746.5	55	15.0	76	SE	26	11.6		5c	0	SE		0.02	0.5	Fair	
Olympia, Washington Ter	29.76	755.9	29.80	756.9	43.0	6.1	92	S	1	0.4			10s		S	0.61	15.5	Cloudy	
Omaha, Nebraska	28.78	731.0	29.84	757.9	64	17.8	68	S	2	0.9		0	0			0	0	Clear	
Oswego, New York	29.82	757.4	30.15	765.8	54	12.2	67	N	2	0.9		Haze	0			0	0	Clear	
Pembina, Dakota	28.86	733.0	29.68	753.9	46	7.8	84	W	3	1.3		2c	2s	W	W	0	0	Fair	
Pensacola, Florida	30.01	762.2	30.04	763.0	66	18.9	79	NE	5	2.2			10ks		NE	0	0	Cloudy	
Philadelphia, Pennsylvania	30.20	767.1	30.25	768.3	61	16.1	82	SW	16	7.2		0	0			0	0	Clear	
Phœnix, Arizona	28.70	729.0	30.47	773.9	60	15.6	44	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.81	452.4	30.02	762.5	24	— 4.4	48	SW	30	13.4		1cs	0	Calm		0.03	0.8	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.95	608.3	29.72	754.9	53	11.7	25	S	8	3.6		5cs	0	Calm		0	0	Fair	
Pittsburg, Pennsylvania	29.36	745.7	30.18	766.6	51	10.6	86	Calm	0	0			Fog		Calm	0	0	Dense fog	
Port Huron, Michigan	29.43	747.5	30.08	764.0	61	16.1	71	SW	6	2.7		0	0			0	0	Clear	
Portland, Maine	30.02	762.5	30.07	763.8	64	17.8	63	NE	6	2.7		Haze	0			0	0	Clear	
Portland, Oregon	29.77	756.1	29.84	757.9	46	7.8	92	S	1	0.4			10s		SW	0.09	2.3	Cloudy	
Portsmouth, North Carolina					67	19.4	84	E	10	4.5		2k	8s	E	Calm	0	0	Cloudy	
Prescott, Arizona	24.74	628.4	30.10	764.5	53	11.7	51	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.98	761.5	78	25.6	82	SW	12	5.4		1c	8ks	SW	SW	0.20	7.6	Cloudy	
Red Bluff, California	29.59	751.6	29.94	760.5	55.5	13.1	84	SE	10	4.5			10s		SW	Inap.	Inap.	Cloudy	
Rio Grande City, Texas	29.74	755.4	29.96	761.0	67	19.4	84	S	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.50	749.3	30.11	764.8	61	16.1	55	NW	6	2.7		1c	Haze	Calm	Calm	0	0	Clear	
Roseburg, Oregon	29.27	743.4	29.83	757.7	57	13.9	94	Calm	0	0			10n		Calm	Inap.	Inap.	Light rain	
Sacramento, California	29.92	760.0	30.00	762.0	45	9.4	85	SE	2	0.9			10s		Calm	0	0	Cloudy	
St. Louis, Missouri	29.50	749.3	30.06	763.5	61	16.1	71	SE	1	0.4		2ck	5ks	S		0	0	Fair	
St. Paul, Minnesota	29.04	737.6	29.84	757.9	61	16.1	66	SE	5	2.2		2c	2ks	Calm	S	0	0	Fair	
Salt Lake City, Utah	25.54	648.7	29.88	758.9	58	14.4	48	Calm	0	0		9k	0	W		0	0	Cloudy	
San Antonio, Texas	29.24	742.7	29.92	760.0	67	19.4	100		3	1.3		5ck	5ks	SE	NE	0.04	1.0	Cloudy	
San Diego, California	29.93	760.2	30.00	762.2	57	13.9	94	NW	3	1.3			10s		NW	0	0	Cloudy	
Sandusky, Ohio	29.46	748.3	30.12	765.0	63	17.2	52	SW	7	3.1		0	Haze		Calm	0	0	Clear	
Sandy Hook, New Jersey	30.18	766.6	30.20	767.3	64	17.8	73	SW	18	8.0		0	0			0	0	Clear	
San Francisco, California	29.96	761.0	30.02	762.5	53	13.3	84	SE	5	2.2			10s		SW	0	0	Threatening	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	40	4.4	65	N	1	0.4		0	0			0	0	Clear	
Savannah, Georgia	29.92	760.0	30.01	762.2	67	19.4	89	NE	9	4.0			10s		NE	0.51	13.0	Cloudy	
Shreveport, Louisiana	29.78	756.4	30.00	762.0	65	18.3	84	Calm		0		2k	2s	Calm	Calm	Inap.	Inap.	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.08	764.0	30.12	765.0	67	19.4	95	E	10	4.5			10n		Calm	0.13	3.3	Light rain	
Socorro, New Mexico	25.32	643.1	29.39	746.5	61	16.1	17	S	3	1.3		0	0			0	0	Clear	
Springfield, Illinois	29.42	747.3	30.09	764.3	59	15.0	70	S	4	1.8		0	5s		S	0	0	Fair	
Springfield, Massachusetts	30.01	762.2	30.14	765.5	64	17.8	68	S	3	1.3		0	0			0	0	Clear	
Stockton, Texas	26.84	681.7	29.84	757.9	62	16.7	88	SE	10	4.5		0	0			0	0	Clear	
Thatcher's Island, Mass	30.06	763.5	30.11	764.8	56	13.5	94	SW	4	1.8		0	5s		SW	0	0	Fair	
Toledo, Ohio	29.44	747.8	30.11	764.8	66	18.9	45	Calm	0	0		0	0			0	0	Clear	
Tucson, Arizona	27.47	697.7	30.02	762.5	65	18.3	48	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.56	750.8	30.05	763.3	43	6.1	83	E	6	2.7		0	8s		W	0.02	0.5	Cloudy	
Uvalde, Texas	29.02	737.1	29.81	757.2	68	20.0	90	E	1	0.4		5k	5s	W	E	0	0	Cloudy	
Vicksburg, Mississippi	29.79	756.7	30.05	763.3	63	17.2	94	SE	6	2.7			10s		SE	0	0	Cloudy	
Virginia City, Montana	24.10	612.1	29.58	751.3	39	3.9	64	SW	4	1.8			10s		Calm	0.09	2.3	Cloudy	
Visalia, California	29.62	752.3	29.99	761.7	48	8.9	85	SW	3	1.3		0	0			0	0	Clear	
Washington, D. C	30.14	765.5	30.26	768.6	64	17.8	73	S	11	4.9		5cs	0	Calm		0	0	Fair	
Wickenburg, Arizona					59	15.0	43	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.04	763.0	30.12	765.0	64	17.8	94	NE	9	4.0			10n		E	0.26	6.6	Light rain	
Winnemucca, Nevada	25.55	649.0	29.91	759.7	45	7.2	39	Calm	0	0			10ks		SW	0	0	Cloudy	
Wood's Holl, Massachusetts	30.13	765.3	30.17	766.3	53	11.7	86	SW	24	10.7		0	Haze			0	0	Clear	
Yankton, Dakota	28.54	724.9	29.77	756.1	65	18.3	63	SW	6	2.7			10s		SW	0	0	Cloudy	
Yuma, Arizona	29.66	753.4	29.80	756.9	60	15.6	71	W	1	0.4		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.06	560.3			55.0	12.8	82	Calm	0	0			10n			0.75	19.1	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.02	762.5	30.07	763.8	81	27.2	70	Calm	0	0		10cs	0	Calm		0	0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.					75	23.9	84	Calm	0	0		0	2ks	Calm				Fair	James Gall.
Navassa, W. I.	29.95	760.7	30.03	762.7	76	24.4	73	E	8	3.6		8ck	8cs	SE	E	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	83	28.3	79	E			2	5k	7ks	E		0.300	7.62	Cloudy	C. J. Hering.
Puerto Perrio, U.S.Col'bia ‖	29.50	749.3	30.06	763.5	74	23.3	94	N			1		10s			0.77	19.6		Francesco J. Cisneros.
Rivas, Nacaragua								ESE				2	2		ESE	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I.	30.06	763.5	30.09	764.3	78	25.6	78	Calm	0	0		0	2ks		Calm	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.04	763.0	30.09	764.3	14.0	—10.0	91	NW	8	3.6		3k	0	W		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in.. or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.10	764.5	65	18.3	89	NE	5	2.2			10		NE	0	0			Cloudy	
§ Navy Yard, Portsmouth, N. H.	30.12	765.0	66	18.9	74	Calm	0	0			10			0	0			Hazy	
Naval Hospital, Yokohama, Japan	30.07	763.8	59.5	15.3	91	Calm			0		6k; h'ze		SW	Slight	Slight			Cloudy	
§ Adams, Gulfito, Costa Rica	29.93	760.2	77	25.0	91	NNW			2		2		NNW					Fair	
§ Alaska, Callao, Peru *	29.92	760.0	63	17.2	89	SSE			1		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	30.00	762.0	65	18.3	84	WNW			1		5		WNW			Smooth		Fair	
§ Colorado, New York, N. Y.	30.19	766.8	64	17.8	78	SW	9	4.0			0			0	0			Hazy	
§ Constitution, Hampton Roads, Va	30.19	766.8	62	16.7	88	NE	2	0.9			2							Clear	
§ Enterprise, N. 29° 58′, W. 69° 57′	30.26	768.6	72	22.2	90	ESE			4		8		SE			Mod'ate	NE	Cloudy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.27	768.8	60	15.6	82	ENE	2.4	1.1			2		SSW	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.02	762.5	56	13 3	100	W	2.4	1.1			6?		SW	0	0			Cloudy?	
§ Jamestown, Sitka, Alaska *	29.45	748.0	37	2.8	100	E			1		5		N			Smooth		Fair	
Kearsarge, Boca del Toro, Chiriqui	30.01	762.2	75	23.9	86	WSW			2		10		SW			Smooth		Light rain	
§ Marion, Off Flores Isl'd, Uruguay	30.37	771.4	52	11.1	35	SSW			3		10			0	0	Mod'ate	SSW	Cloudy	
§ Michigan, Erie, Pa.	30.06	763.5	73	22.8	55	SSW			2		2		SW					Clear	
§ Monocacy, Shanghai, China	29.93	760 2	63	17.2	89	SE			1–2		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	30.03	762.7	66	18.9	94	NE	17	7.6			10		NE	0.36	9.1			Cloudy	
Nipsic. Gibraltar, Mediterranean	29.77	756.1	64	17.5	68	SSW			3		10					Smooth		Hazy	
§ Onward, Ancon Bay, Peru †	29.96	761.0	64	17.8	89	SSE			3		10		S			Long	W	Misty	
§ Palos, Shanghai, China	29.93	760.2	60	15.6	??	ESE			3		0							Clear	
§ Passaic, Washington, D. C.	30.18	766.6	63	17.2	94	SSW			3		2			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.98	761.5	60	10.0	72	SW			3		2					Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	30.24	768.1	61	16.1	88	S			2		2							Clear	
§ Quinnebaug, N. 31° 28′, W. 9° 43′	29.76	755.9	62	16.7	77	WSW			6		8		WSW			Heavy	NW	Squally	
§ Richmond, Shanghai, China	29.91	759.7	65	18.3	84	SE			2		0			0	0			Clear	
§ Rio Bravo, Brownsville, Texas †	30.18	766.6	68	20.0	??	WNW	1	0.4			8		NW	0.54	13.7			Cloudy	
§ Saratoga, N. 38° 26′, W. 47° 20′	30.18	766.6	61	16.1	94	NE			4		10		NNE	Light	Light	Mod'ate	NNE	Squally	
§ Shenandoah, Montevideo, Uruguay	30.38	771.6	52	11.1	66	SSE			1		2		S			Mod'ate	S	Fair	
§ St. Louis, League Island, Pa.	30.23	767.8	60	15.6	88	WSW	6	2.7			0			0	0			Clear	
Swatara, N. 6° 04′, E. 95° 54′ †	29.81	757.2	82	27.8	91	WSW			3		8		SW			Smooth	W	Fair	
§ Tennessee, N. 10° 16′, W. 79° 25′	30.00	762.0	80	26.7	82	N	3	1.3			5		E	0	0	Smooth		Fair	
Ticonderoga, Chosan, Corea	29.94	760.5	66	18.9	79	SSW			2		0							Clear	
§ Trenton, Stayrna, Turkey	29.81	757.2	81	27.2	78	W			4		2			0	0	None		Fair	
§ Tuscarora, Mare Island, Cal.	30.04	763.0	55	12.8	80	Calm			0		8		Calm	0	0	Smooth		Cloudy	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.20	767.1	68	20.0	90	SW			3		0							Clear	
§ Wabash, Boston, Mass.	30.08	764.0	63	17.2	62	SW	11	4.9			5			0	0			Fair	
§ Wachusett, Montevideo, Uruguay	30.33	770.4	52	11.1	79	S			2		8		S	0	0	Smooth	S	Cloudy	
Wyoming, Constantinople, Turkey	29.75	755.6	58	14.4	82	N			3		5		N			Smooth	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 50° 09′, W. 25° 20′	30.36	771.1	52	11.1		NNE			3		10		ENE			Smooth	NW	Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 50° 11′, W. 16° 26′	30.19	766.8	51	10.6	79	ENE			6		7		ENE	0	0	Mod'ate	ENE	Fair	
S. S. Ohio, Henry Morrison, N. 40° 05′, W. 70° 44′ *†	30.27	768.8	58	14.4	94	SW			2		0			0	0	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 40° 49′, W. 62° 36′ *†	30.26	768.6	65	18.3	89	SW			4		2		SW	0	0	Mod'ate	SW	Clear	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 36° 26′, W. 121° 42′ †	30.10	764.5	54	12.2	93	WNW			3		2		NW	0	0	Gentle	WNW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson, S. S. Scythia, W. H. O. Hains N. 40° 39′, W. 71° 04′ *	29.99	761.7				SW			2		2		SW	0	0	Smooth	SSW	Clear	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			C. Undütsch.
S. S. Braunschweig, C. Undutsch																			S. Risius.
S. S. Leipzig, F. Pfeiffer																			
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 33° 50′, E. 137° 09′ †	29.98	761.5	65	18.3	89	WSW			1		5		WSW			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	29.97	761.2	56	13.3	87	S			3	ck				0	0	Smooth		D. clouds	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 36° 14′, W. 120° 55′ †	30.20	767.1	54	12.2		N			2		0					Light	N	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	29.98	761.5	51	10.6		SW			3		8		SW					Foggy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin.																			F. A. Johnston.
§ S. S. Australia, S. 34° 38′, E. 173° 40′	29.72	754.9				NNE			4		10					Rough	ENE	Hazy	Banneman.
§ S. S. China, W. B. Seabury, San Jose, Guatemala...†	29.86	758.4	76	24.4	86	N			1		8		NE			Mod'ate	SW	Fair	
S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of Panama, M. Connolly, N. 13° 25′, W. 89° 04′.....†	29.98	761.5	76	24.4		N			1		8		NW	0	0	Large	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.97	761.2	63	17.2		W			6		2		WSW	0	0	Smooth		Clear	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 28° 25′, E. 126° 59′.....†	30.14	765.5	71	21.7	80	ESE			2		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 9° 03′, W. 84° 16′.....†	29.97	761.2	86	30.0	100	ESE			2		2		Calm	0.08	2.0	Small	SSE	Clear	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J M Cavarly																			
S. S. Idaho, Victoria, Vancouver I'd ...†	30.09	764.3				E			1		5		SE	0	0	Smooth		Fair	
§ S.S. Zalandia, R. C. Ghest, S. 1° 44′, W. 165° 58′.....	29.86	758.4				ENE			3				E			Smooth	NE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 48° 44′, W. 16° 43′.....†	30.08	764.0	49	9.4		NNE			5		5		NNE	Light	Light	Mod'ate	N	Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N. 42° 09′, W. 51° 52′..... †	30.40	772.1	50	10.0	100	SE			2		5		SE	0	0	Light	E	Fine	W. S. Waugh.
S. S. Celtic, B. Glendell																			J. Jones.
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr. Adele Fuller, J. Jorgensen, Off Chatham, Mass	30.11	764.8	52	11.1	79	WSW	13	5.8			Sm'e			0	0	Rough		Smoky	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis																			J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 18′, E. 53° 04′.....†	30.08	764.0	78	25.6		Calm			0		2			0	0	Smooth	SW	Fair	L. L. Lewis.
Brigantine George, W. H Champlin, N. 24° 40′, W. 65° 05′.....†	30.35	770.9	80	26.7		ESE			3		1		ESE	Showers.	Showers.			Clear	B. F. Woodbury.
Hippolyta, N. 46° 16′, W. 34° 55′.....*	30.21	767.3	65	18.3		SSE			6		5		S	0	0	Smooth		Fair	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 5, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

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

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.06	763.5				SW			5		8			0.236	6.0	Very cloudy	Dr. Ollive.
Nemours			29.81	757.2	68.4	20.2	59	WNW			3		5			0.709	18.0	Cloudy	Metge.
Algiers			29.78	756.4	68.7	20.4	65	WNW			6		2			0.780	19.8	Fair	Nicolas.
La Calle			29.80	756.8	74.7	23.7	52	S			6		3			0	0	Pretty fair	Fonfrède.
Tunis			29.82	757.5															Jacques.
Sfax			29.84	757.8															Gau.
Saida			29.76	755.9															Bernard.
Tebessa			29.88	758.9	78.3	25.7	19	SW			5		6			0	0	Cloudy	Watrin.
Geriville					63.0	17.2	38	NW			1		0			0	0	Clear	Brugniaux.
Laghouat			29.80	756.9	74.8	23.8	18	W			2		0			Inap.	Inap.	Clear	Suart.
Biskra			29.74	755.5	85.6	29.8	24	E			1		2			0	0	Fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.18	741.2	29.72	754.6	59.5	15.3	74	W			3		10			0.350	8.9	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.99	736.4	29.73	755.1	70.2	21.2	59	ESE	8.7	3.9			9			0	0		Dr. Wierzbicki.
Eperies	28.88	733.5	29.76	756.0	68.4	20.2	64	SE			1		10ks			0.126	3.20		Julius Mikolik.
Gratz	28.50	724.0	29.72	755.0	61.7	16.5	70	SSW			2		10			0.315	8.0		Andreas Rospini.
Hermannstadt	28.36	720.2	29.73	755.2	66.0	18.9	60	SSE			3		8			0.039	1.00	Rainy	Prof. A. Gottschling
Kremsmünster, Observatory	28.44	722.3	29.76	756.0	53.6	12.0	90	WSW			3		10			1.496	38.0		The Staff.
Lemberg	28.82	732.1	29.78	756.3	65.3	18.5	59	S			5		7			0.003	0.08		Dr. T. Stanecki.
Pola	29.60	754.0	29.80	756.8	65.8	18.8	66	WNW			1		6			0	0		I.R. Hydrographic Office.
Szathmar	29.32	744.8	29.77	756.1	70.2	21.2	48	E			4		9			0	0		Pet. Pancsics, S. J.
Szegedin	29.42	747.3	29.69	754.2	63.5	17.5	83	SW			1		10			0.526	13.35		Karl Stancel.
Trieste	29.69	754.1	29.79	756.7	62.6	17.0	94	W			1		9			0.138	3.5	Thunder-storm.	P. Busin.
Vienna	29.02	737.0	29.76	755.9	61.3	16.3	66	W			4		3			0.299	7.6		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 4, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.03	762.7	30.13	765.3	51.2	10.7		ESE	6	2.7			7			0	0	D. clouds	W. Boswell.
Ardrossan	30.12	765.0	30.14	765.5	51	10.6		NW			3		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.98	761.5	30.22	767.6	51.7	10.9		NNW	5	2.2			10					Overcast	S. Call.
Bidston (Liverpool Obs)			30.10	764.5	53.2	11.8		WNW	16	7.2			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.53	750.0	30.05	763.3	56.5	13.6		NE	12	5.4			3					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.69	754.1	30.09	764.3	53.9	12.2	54	NW			5		6			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.03	762.7	81	27.2		NE			3		2					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.95	760.7	30.05	763.3	47.5	8.6		N			2		10					Overcast	H. Todd.
Cardington			30.04	763.0	50.0	10.0		N			1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.90	759.4	30.04	763.0	46.1	7.8		N			1		10					Gloomy	Sapper W. Gibson, R. E.
Donaghadee	30.15	765.8	30.19	766.8	51	10.6		NE			4		10					Overcast	J. Mac Gowan.
Dover	29.94	760.5	29.97	761.2	49	9.4		NNE			3		10					Showery	J. Costello.
Falmouth (Observatory)	29.87	758.7	30.10	764.5	57.5	14.2		NNW			3		5					Misty	The Staff.
Fort Napier, Natal	27.95	709.9	30.16	766.1	73.4	23.0		NE			1		3					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.81	757.2	30.04	763.0	86	30.0		W			1		8					D. clouds	
Galway (Queen's College)			30.18	766.6	56	13.3		Calm			0		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.79	756.7	29.83	757.7	62.4	16.9		W			3		1					Blue sky	Sgt. W. Allen.
Glasgow, (Observatory)	29.92	760.0	30.12	765.0	57.5	14.2		NW			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.98	761.5	29.99	761.7	47	8.3		N			4		8					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.87	758.7	30.04	763.0	46.8	8.2		N			2		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.82	757.4	30.04	763.0	50	10.0		NNE			3		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.27	768.8	30.30	771.9	59	15.0		E			4		k			0	0	Gloomy	M. P. Moyle.
Holyhead	30.11	764.8	30.15	765.8	50	10.0		N			4		2					Blue sky	John Tilston.
Jersey	29.77	756.1	30.07	763.8	49.0	9.4		NNE			4		10					Misty	J. Fisher.
Kew (Observatory)	30.02	762.5	30.06	763.5	47.2	8.4		N	14	6.3			10					Raining	The Met'g'l Office.
Leicester (Museum)	29.77	756.1	30.03	762.7	49.0	9.4		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.79	756.7	29.87	758.7	71	21.7		SE			2		0					Blue sky	A. King.
Nairn	29.97	761.2	30.06	763.5	60	15.6		W			1		0					Clear	W. D. Penny.
Nassau, Bahamas			30.04	763.0	82.5	28.1		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.91	759.7	30.10	764.5	51.1	10.6		N			2		10kd		N	0.060	1.52	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.55	750.6	30.08	764.0	52.3	11.3		NNE			3		8					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.84	757.9	30.10	764.5	50	10.0		NNW			3		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.99	761.7	30.06	763.5	61.8	16.6		N			2		3					D. clouds	John Merrifield.
*Roche's Point	30.13	765.3	30.22	767.6	56	13.3		NNE			4		5					⅜ clouded	Wm. Kennedy.
St. Ann's Head	29.96	761.0	30.13	765.3	53	11.7		N			4		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.12	765.0	49.1	9.5		NNW	21	9.4			1					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.64	752.8	29.70	754.4	62.2	16.8		NNE			3		3					D. clouds	Serg't W. H. Lyne.
Sheffield	29.84	757.9	30.13	765.3	52.1	11.2		NNE			2		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.07	763.8	30.10	764.5	59.9	15.5	59	W			1		4			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.09	764.3	58.3	14.6		NE	15	6.7			6					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.84	757.9	30.06	763.5	50.8	10.4		N			3		10					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.08	764.0	30.11	764.8	61	16.1		N			5		4					D. clouds	W. Newcombe.
Valencia Observatory)	30.22	767.6	30.24	768.1	52.6	11.4		NNW	15	6.7			5					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.04	763.0	30.08	764.0	87.6	30.9	39	S	3.5	1.6		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.42	747.3	60.0	15.6	77	SW			3		k			0.03	0.8	Sleeting	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.15	765.8	55.1	12.8		E			1		8k			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.79	756.7	29.98	761.4	78.5	25.8	73	SW	3.2	1.4		8	2	WNW	ESE	0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	30.15	765.8	30.24	768.1	53.5	11.9	83	NNE	5	2.2			6			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.19	766.8	48	8.9		NW			4	5	3	NW		0	0		J. Youngclause.
North Unst, Shetland I's			29.93	760.2				NW			4	3	7	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from		
H. M. S. Alert,				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma,				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 02′, W. 15° 15′			Misty	Capt. W. P. Hughes.
S. S. Strathleven,				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5	29.96	761.0	69.4	20.8	83	SE			1	1c;ck	1d			0	0	Misty	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.83	757.7	29.88	758.9	56.7	13.7	60	Calm			0		10						
Fanöe	29.89	759.2	29.91	759.7	57.9	14.4	73	Calm			0		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.07	763.6	30.11	764.7	35.6	2.0	78	N			7		2					Snowing	
Thorshavn (Faröe)	29.90	759.5	29.94	760.4	44.6	7.0	81	W			7		4						
Vestervig	29.82	757.5	29.92	759.9	57.4	14.1	62	NW			2		9						

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

FRENCH SERIES.

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

Alençon, Normal School	29.43	747.6	29.98	761.6	59.0	15	55	N			2		2k		NE	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.85	758.1	29.96	760.9	55.8	13.2	50	NW			1		8		SE	0	0	Very cloudy	Vaillant, Director.
Arras, Engineer School	29.69	754.1	29.95	760.7	50.9	10.5	70	N			3		10n		N	0	0		Klein, Commandant.
Avignon, Normal School	29.70	754.3	29.78	756.3	73.9	23.3	52	NNW			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.32	744.6	29.86	758.5	60.1	15.6	63	ENE			1		5n		NE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.69	754.1	29.95	760.8	57.4	14.1	57	WNW			2		8		NNW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.92	734.5	29.78	756.3	70.5	21.4	42	E			1		5		NE	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.56	750.7	29.75	755.7	70.3	21.3	41	ENE			1		5	ENE	SW	0.004	0.1	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.94	735.0	29.85	758.2	71.6	22	45	W			1		5kn	NW	NW	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.33	744.9	29.87	758.8	59.0	15	78	NNE			1		2n		NNE			Raining	M. Gence, Director.
Brest, Naval Observatory	29.80	757.0	30.04	763.1	56.8	13.8	60	NE			3		7		NE	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.87	758.6	29.94	760.4	50.9	10.5	74	NE			1		10			0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.36	745.7	29.76	755.8	71.6	22	49	E			2		2		E	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.57	751.1	29.88	759.0	64.6	18.1	63	WNW			3		0			0	0	Clear	Jadot, Director
Chartres, Normal School	29.31	744.4	29.87	758.6	59.4	15.2	72	NW			2		2		SE	0.39	10.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.43	722.0	29.74	755.3	66.7	19.3	53	N			1		8			0.055	1.4		Allnard, Director.
Commercy, Normal School	28.98	736.1	29.82	757.3	65.5	18.6	54	WNW			1		kn	WNW	WNW	0.004	0.1		Dr. Coullet, Director.
Commune de Gréasque*	28.73	729.8	29.87	758.8	71.2	21.8	53	SW			2		5		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.05	737.8	29.79	756.6	69.1	20.6	73	NE			1		cks			0.063	1.6		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.70	754.3	29.91	759.6	63.7	17.6	53	N			4		0			0	0	Clear	Moullot, Director.
Le Mans, Normal School	29.64	752.9	29.95	760.6	58.1	14.5	55	NE			3		2		NE	0	0	Slightly cld'y	Poirrier, Director.
Lorient, Naval Observatory	28.87	733.2	29.71	754.7	66.0	18.9	53	NW			1		5kn		W			Cloudy	M. Cadoret, Director
Lons-Le-Saulnier, N. School	29.89	759.1	30.00	761.9	57.2	14.0	57	NE			3		2		NE	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.17	740.8	29.76	756.0	69.8	21 0	46	S			1		5k		NE	0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.52	749.9	29.79	756.6	65.8	18.8	65	WSW			1		3		S	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.81	731.7	29.82	757.3	65.5	18.6	47	N			1		kn		N	0	0		Barbier, Director.
Mont-Louis	24.61	625.0	29.84	758.0	47.7	8.7	82	SE	18.6	8.3			6		NW	0	0		M. Cave, for Dr. Fines.
Nice	29.80	756.8	29.83	757.7	66.6	19.2	73	SE			2		1	W	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.58	751.3	29.78	756.4	74.7	23.7	50	SW			1		2		W	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.67	753.5	29.77	756.2	62.8	17.1	75	SE	11.2	5.0			7	N	E	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.32	566.8			41.9	5.5							10		NE	0.071	1.8	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.77	730.8	29.80	756.9	71.6	22	49	N			1		2kn	N	N	0	0	Slightly cld'y	M. Tallieu
Puy de Dome (Summit) Obs	24.98	634.5			45.7	7.6	76	ENE			4		8		E	0.063	1.6		Allnard, Director.
Rochefort, Naval Obs'y	29.85	758.1	29.88	758.9	65.3	18.5	59	N			2		10	N	N	0	0	Covered	Lt. E. Decante, Director
Rouen, Normal School	29.89	759.3	29.98	761.5	52.2	11.2	72	NNW			1		10		N	0	0	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.98	761.6	30.02	762.5	53.1	11.7	75	NNE			3		5	NNE	NNE	0	0	Cloudy	Lt. Hercouet, Director
Saint Maur (near Paris)	29.76	755.9	29.93	760.1	60.6	15.9	51	NNW			2		0		N	0	0		E. Renou, Director.
Tarbes, Normal School	28.68	728.4	29.71	754.6	71.6	22	66	E											T. Huguet, Director
Toulouse, Observatory	29.08	738.6	29.80	756.8	67.6	19.8	49	E			1		2	E		0	0	Slightly cld'y	B. Baillaud, Dir.
Tours	29.69	754.2	29.89	759.2	62.6	17.0	57	NE			2		2		ENE	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.45	747.9	29.94	760.4	56.8	13.8	55	NE			2		0			0	0	Clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.08	738.5	29.76	755.8	72.5	22.5	50	NNW			1		5			0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.21	767.3	30.24	768.0	77.7	25.4										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.65	753.0			55.5	14 7	57	NNE			2		2		NE	0.138	3.5		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.83	757.6	29.85	758.2	62.6	17.0	95	NE	12.8	5.7			10n			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 303.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.98	736.0	29.84	757.8	61.5	16.4	66	NE			6		7n	N		0.327	8.3	Raining	Prof. Dr. Hoh.
Berlin	29.65	753.1	29.82	757.4	59.5	15.3	69	N			1		10			0	0		Prof. Dr. Arndt.
Breslau	29.25	743.0	29.78	756.4	57.0	13.9	93	NNE			1		10			0.215	5.46		Royal University Obs'y.
Carlsruhe	29.37	746.1	29.78	756.5	68.7	20.4	58	NE			1		9	N				Thunder-storm.	Albert Senz.
Cassel	29.24	742.6	29.84	757.9	64.4	18.0	51	NNW			5		2	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.53	750.1	29.90	759.4	70.7	21.5	28	NNE			1		8			0	0		Physical Society.
Friedrichshafen	28.37	720.7	29.77	756.1	64.0	17.8	62	SW			2		5	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.80	757.0	29.87	758.8	60.8	16.0	85	ESE			1		9			0	0		Dr. Reinhold Kleeman.
Kiel	29.88	758.9	29.89	759.3	56.5	13.6	80	N			2		8			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.75	755.7	29.84	757.8	64.4	18.0	70	E			4		7	SE		0.004	0.1		Prof. E. Luther.
Köslin			29.80	756.9	65.1	18.4		N			2		4			0	0		H. Müller.
Leipsic Observatory	29.43	747.6	29.85	758.2	58.3	14.6	74	NE			2		10	N		0	0		Prof. Dr. Bruhns, Privy Counsellor.
Magdeburg	29.64	752.8	29.86	758.5	60.6	15.9	77	NE			1		9ks	NE		0.004	0.1		Dr. Assmann.
Memel	29.84	757.9	29.89	759.1	65.8	18.8	58	SSE			0–1		10ks						Reinbrecht & Issermann.
Munich	28.01	711.4	29.86	758.4	60.1	15.6	57	NE			3		10			0.154	3.9		Dr. C. Lang.
Neufahrwasser	29.84	757.8	29.85	758.2	54.0	12.2	79	NE			1		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.28	743.8	29.81	757.1	69.8	21.0	45						1			0	0		Reallehrer Dicknether.
Posen	29.53	750.0	29.82	757.3	55.9	13.3	96	E			4		10			0.157	4.0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.28	743.8	29.82	757.3	67.8	19.9	60	NNE			1		5			0.423	10.74		Imp. University Observatory.
Stuttgart	28.86	733.0	29.72	754.9	68.0	20.0	40	E					5	E		0.024	0.6		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.35	720.1	29.92	760.0	57.4	14.1	78		1.3	0.6			10		N	0.126	3.2	Raining	Reallehrer J. Hopfner.
Wustrow	29.85	758.3	29.88	758.9	53.4	11.9	86	NE			3		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.41	747.0	29.79	756.7	78.6	25.9		W			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.60	751.9	29.65	753.1	81.4	27.4	85	SW	28	12.5			0			0	0	Blue sky	
Deesa	29.13	739.8	29.58	751.2	103.0	39.4	12	SW	17.0	7.6			0			0	0	Misty	
Bombay	29.78	756.3	29.81	757.2	86.7	30.4	70	W	11	4.9			4		W	0	0	D. clouds	
Poona (Yarrowda)	27.94	709.8	29.76	756.0	88.0	31.1	21	WNW	25	11.2			0			0	0	Blue sky	
Belgaum	27.28	692.8	29.78	756.3	82.5	28.1	59	WSW	6	2.7			0			0	0	Misty	
Lahore	28.74	730.1	29.44	747.9	103.1	39.5	23	Calm	2.0	0.9			0			0	0	Misty	
Roorkee	28.71	729.2	29.59	751.5	89.0	31.7	39	S	6	2.7			3			0	0	Misty	
Agra	29.00	736.6	29.54	750.2	100.6	38.1	28	E	8.0	3.6			0			0	0		
Nagpur	28.56	725.3	29.55	750.5	102.3	39.1	11	W	7.2	3.2			0			0	0	Blue sky	
Jubbulpore	28.21	716.4	29.50	749.4	102.5	39.2	13	N	6.6	3.0			8			0	0	Overcast	
Lucknow	29.25	743.0	29.62	752.5	86.6	30.3	52	ENE	5.3	2.4			0			0	0	Blue sky	
Allahabad	29.31	744.4	29.61	752.2	90.2	32.3	46	NE	4.1	1.8			0			0	0	Blue sky	
Patna	29.46	748.4	29.64	753.0	78.9	26.1	61	E	3.2	1.4			4	E	E	0	0	D. clouds	
Hazaribagh	27.64	701.9	29.64	752.9	76.8	24.9	61	E	9.9	4.4			0			0	0	Blue sky	
Cuttack	29.52	749.8	29.60	751.8	87.8	31.0	61	SSW	5.8	2.6			2			0	0		
Calcutta (Alipore)	29.68	754.0	29.71	754.6	75.0	23.9	86	ENE	9.0	4.0			10	SW	SW			Showery	
Goalpara	29.44	747.7	29.85	758.1	73.5	23.1	88	E	8.5	3.8			10		W	0	0	Gloomy	
Chittagong	29.67	753.6	29.76	755.8	83.9	28.8	70	W	6.1	2.7			10			0	0	Gloomy	
Sibsagar	29.47	748.6	29.81	757.3	74.5	23.6	88	N	1.3	0.6			10	SW	SW	0.04	1.0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.39	746.6	29.80	756.9	60.3	15.7	83	S	1.3	0.6			10			0.166	4.2		Prof. Giovanni Clodig.
Milan	29.23	742.4	29.73	755.2	69.4	20.8	49	SSW	6.3	2.8			5	NW		0	0		Prof. Schiaparelli.
Padua	29.66	753.4	29.77	756.1	64.8	18.2	68	N	3.8	1.7			7	SW		0.185	4.7		Prof. Dott. Lorenzoni.
Moncalieri	28.84	732.4	29.74	755.3	67.3	19.6	63	S	3.1	1.4			6	N		0.114	2.9		Prof. P. F. Denza.
Genoa	29.66	753.4	29.85	758.3	63.7	17.6	59	SW	7.4	3.3			4	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.86	707.7	29.76	756.0	64.8	18.2	62	N			2		8			0	0		Prof. D. C. Bruno.
Pesaro	29.72	755.0	29.77	756.2	70.2	21.2	43	NW	12.5	5.6			3	W		0.063	1.6		Prof. Luigi Guidi.
Florence	29.58	751.4	29.84	757.8	68.7	20.4	54	W			2		9	SW		0	0		Cav. F. Meucci.
Leghorn	29.70	754.4	29.78	756.5	65.5	18.6	63	W	1.8	0.8			10	W		0	0		Prof. P. Monte.
Rome	29.70	754.4	29.87	758.8	71.6	22.0	54	SW	8.7	3.9			9			0	0		Prof. P. S. Ferrari.
Lecce	29.63	752.7	29.88	759.0	70.3	21.3	40	E	7.4	3.3			2			0	0		Prof. C. De Giorgi
Cosenza	29.02	737.1	29.89	759.3	72.7	22.6	71	NW	0.7	0.3			2			0	0		Prof. D. Conti.
Cagliari	29.54	750.4	29.73	755.2	73.4	23.0	54	SE			4		1	W		0	0		Prof. A. Pacinotti.
Palermo	29.65	753.1	29.90	759.4	67.3	19.6	59	ENE	6.9	3.1			7			0	0		Prof. G. Cincciatore.
Syracuse	29.82	757.3	29.86	758.4	74.3	23.5	53	SE	12.5	5.6			4	SW		0	0		Prof. V.G. Guliano.
SUB-SERIES																			
Naples, S. R.	29.37	746.0	29.88	759.0	65.3	18.5	71	NE	1.3	0.6			7			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					65.5	18.6	80	W	4.9	2.2			2cks			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.76	755.9	29.96	761.0	67.2	19.6	72	SSE	5.5	2.5			0			0.090	2.29	Clear.	S. Takehayashi.
Tokei, (Yeddo) Observatory.	29.91	759.7	29.98	761.5	61.3	16.3	86	S	7.7	3.4		0	0			0	0	Clear.	The Staff.
Wakayama	29.94	760.5	29.99	761.7	67.0	19.4	70	S	7.8	3.5			0			0	0	Clear.	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Barcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.07	636.8	30.15	765.9	51.8	11.0	46	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.62	601.9			60.8	16.0	66	Calm	0	0		0	0			0	0	Squally	Vicente Fernandez.
Leon	24.44	620.8	30.05	766.3	64.9	18.3	73	N			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.74	755.3	30.00	761.5	69.3	20.7	97	E			1	5ck	0			0	0	Foggy	F. Quiljano, C. E.
Mexico, Central Observatory	23.11	586.9	30.11	764.9	54.0	12.2	60	Calm	0	0		0	0			0	0	Fine	The Staff
Morelia	24.01†	609.9†			66.2	19.0	54	SW			4	2c	4k	SE	SW	0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.98	609.1	29.96	761.0	60.4	15.8	55	Calm			0	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.6	30.26	768.7	50.5	10.3	43	Calm	0	0		1c	1ck	W	E	0.02	0.5	Clear.	Prof. P. Spina.
San Luis Potosi	24.22	615.3	30.18	766.6	59.0	15.0	53	E			1	1	1	W	E	0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.87	758.6	29.88	758.9	78.3	25.7	89	E			1	6	0	S		0	0	Cloudy	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.61	574.3	30.18	766.6	57.2	14.0	54	Calm			0	0	0			0	0	Very clear.	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	29.96	761.0	29.96	761.0	54.7	12.6		N			1					0	0		
Groningen	29.87	758.8	29.93	760.2	54.5	12.5		N								0	0		
Helder	29.95	760.6	29.95	760.6	52.3	11.3		WNW			1					0	0		
Hellevoetsluis	29.95	760.8	29.95	760.8	52.9	11.6	77	NW			1					0	0		
Utrecht	29.91	759.8	29.96	761.0	55.8	13.2	69	WNW			1		8			0	0	Very cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.93	760.3	29.99	761.7	47.8	8.8	60	WNW	5.4	2.4			8			0.173	4.4		
Brönö	29.78	756.3	29.82	757.3	41.7	5.4	91	SW	27	12			10			0.244	6.2	Raining	
Christiania	29.71	754.5	29.85	758.1	63.7	17.6	45	SW	11	5			8			0	0		
Tromsö	29.65	753.0	29.70	754.4	43.2	6.2	79	SW	7	3			10			0	0		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.11	764.7	30.34	770.5	62.6	17.0	66	ENE			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	28.73	729.8	29.74	755.3	52.9	11.6	80	SSW	4.9	2.2			8			0.752	19.1		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.91	759.7	30.00	761.9	63.7	17.6	42	NW	6.9	3.1			5			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.35	745.6	29.71	754.7	58.5	14.7	53	SSE	11.2	5.0			7	SE		0.236	6.0		The Staff.
Ponta Delgada (Azores)	30.19	766.8	30.26	768.6	62.6	17.0	49	NE	11.2	5.0			5			0.157	4.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, S. Nicolam, Benguela			29.92	760.0	76.1	24.5		SW			2		3		SW	2	SW		D. clouds	C. J. de Sonna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa.																				
Porto Praya, Cape Verde I'ds			30.34	770.5	75.2	24.0		NE			2		1		NE	1	NE		Blue sky	Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello																				A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.00	762.0	82.4	28.0		SW			2		10		SW	1		3	Overcast	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Archangel	29.65	753.1	29.67	753.6	37.2	2.9	85	NW	13	6			8ks						Capt. Sseltwerstow.
Astrakhan	30.13	765.2	30.04	763.1	59.5	15.3	24	E	27	12			0						Capt. Wisganow.
Barnaul	29.32	744.8	29.83	757.6	45.3	7.4	49	SW	4	2			10						Meteorological Obs.
Dorpat	29.75	755.6	29.98	761.6	65.8	18.8	38	SSE	4	2			3k						Prof. Dr. Weihrauch.
Ekaterinburg	28.81	731.7	29.76	755.9	50.2	10.1	36	W	13	6			4k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.62	752.4	29.89	759.1	60.1	15.6	44	WSW	9	4			8						Physical Cabinet.
Kertch	29.89	759.2	29.91	759.7	57.9	14.4	62	ENE	11	5			1					Light clouds	Lagorio.
Kieff	29.37	746.0	30.00	761.9	64.2	17.9	39	SE	9	4			2cks						Physical Cabinet.
Krotkowo*	29.60	751.8	30.07	763.6	59.9	15.5	39	NW	4	2			10						Cand. Fatjanow.
Lugan	29.87	758.7	30.07	763.8	64.9	18.3	26	ENE	34	15			3						Meteorological Obs.
Moscow	29.56	750.7	30.10	764.4	63.5	17.5	34	S	4	2			5ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.64	752.8	29.98	761.6	68.5	20.3	36	E	45	20			8k;cs						Kurdakof.
Nikolaievsk, on the Amoor	29.75	755.6	29.84	757.8	32.0	0	90	SE	11	5			10n					Snowing	
Nukuss	29.48	748.9	29.72	754.8	55.8	13.2	57	NNE	18	8			10kn						
Orenburg																			
Pekin (China)	29.76	755.8	29.90	759.4	59.9	15.5	33	S	7	3			4cs						Physical Observatory.
St. Petersburg	29.95	760.8	29.97	761.2	59.9	15.5	42	NW	13	6			1cs;ks						Central Physical Obs.
Tashkend	28.04	712.2	29.50	749.4	82.9	28.3	53	Calm	0	0			0						Teich, A. M.
Tiflis	28.40	721.3	29.80	756.8	59.0	15.0	81	SE	4	2			10						Physical Observatory.
Vladivostock																			
Warsaw	29.35	745.5	29.76	755.9	67.8	19.9	65	SE	9	4			9ks						Astronomical Obs.
Wilna	29.56	750.9	29.98	761.5	67.0	18.9	91	SSE	4	2			10					Raining	Astronomical Obs.
Yeniseisk	29.41	747.0	29.70	754.4	39.2	4.0	72	SW	18	8			9						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.68	753.8	29.78	756.5	61.2	16.2	71	E	3.4	1.50			8			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.76	755.8	29.81	757.2	70.0	21.1	59	NW	1.5	0.67			10			0.016	0.4	Covered.	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.85	681.9			50.9	10.5	72	NE	6.6	2.96			8			0	0	Cloudy	Domingo Martiny Perez
Madrid, Royal Observatory	27.53	699.3	29.73	755.1	58.5	14.7	67	E	10.4	4.66		0	10			0.059	1.5	Stormy	The Staff.
Murcia, Met. Obs'y	29.58	751.3	29.73	755.1	70.0	21.1	59	S	6.2	2.75		2	4	NE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.83	732.2	29.71	754.5	61.2	16.2	67	SE	8.1	3.6			10			0.083	2.1	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.5	30.05	763.2	78.3	25.7	78	SE	2.7	1.2		2c;ck	1k	W	SE	0.094	2.4	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.81	757.2	29.86	758.5	85.3	29.6	66	SE	5.9	2.7			1s			0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.75	755.5	29.84	758.0	61.0	16.1	60	SSW	9.4	4.2		0	9		S	0.505	12.8		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.03	762.7	30.12	765.0	80.2	26.8	79	SE	4.9	2.20		2cs	2k	SE	SE	0	0	Clear	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.83	757.7	29.87	758.7	43.9	6.6	.....	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.84	757.9	29.89	759.2	51.4	10.8	52	SW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Hernosand	29.83	757.7	29.88	759.0	50.4	10.2	65	SSW	.....	.....	2	.....	2	.....	.....	0	0	.....	
Stockholm	29.75	755.7	29.93	760.2	62.2	16.8	33	SSE	.....	.....	2	.....	1	.....	.....	0	0	.....	
Wisby	29.85	758.2	29.91	759.7	65.8	18.8	45	SSE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.80	757.0	29.89	759.2	64.0	17.8	40	SSE	11.0	4.9	.....	.....	1	.....	.....	0	0	.....	Nils Ekholm.

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

Swedish Naval Series.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 44° 04′, W. 18° 46′	.....	.....	30.17	766.2	55.8	13.2	77	NE	.....	.....	6	.....	5	.....	.....	.....	.....	.....	Misty	J. P. Pâhlson.
H. M. Corvette Balder, N. 57° 40′, E. 11° 14′	.....	.....	29.87	758.6	52.5	11.4	80	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	Blue sky	Capt. A. C. Schonméyr.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.37	720.5	29.76	756.0	64.2	17.9	50	N	.....	.....	2	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.1 mm.; Thermometer, +3.0 Cent. Relative Humidity, —5 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.78	756.3	60.3	15.7	70	NE	19	8.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.96	760.9	73.8	23.2	.....	W	.....	.....	2	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.75	755.7	75.0	23.9	74	SW	.....	.....	4	5ck	.....	SW	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	38.8	3.8	.....	Calm	0	0	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	30.10	764.5	30.17	766.3	41.9	5.5	74	NE	5	2.2	.....	3k	7ks	W	.....	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.15	765.8	30.19	766.8	41.4	5.2	75	SE	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.95	760.7	56.3	13.5	70	E	.....	.....	1	1cs	0	.....	.....	0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.99	761.7	30.16	766.1	35.0	1.7	.....	N	.....	.....	1	.....	10n	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	30.14	765.5	30.17	766.3	39.5	4.2	86	S	4	1.8	.....	.....	10n	.....	.....	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	30.07	763.8	30.14	765.5	51.7	10.9	57	S	4	1.8	.....	8ck	0	W	.....	0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.98	736.1	29.79	756.7	51.3	10.7	84	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear.	James Stewart.
Granton, Ontario	28.90	734.0	29.96	761.0	64.0	17.8	62	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	30.05	763.3	30.19	766.8	39.1	3.9	98	E	7	3.1	.....	.....	Fog	.....	.....	0	0	Foggy	A. Allison.
Hamilton, Ontario	29.53	750.0	29.90	759.4	52.1	11.2	86	S	.....	.....	1	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.62	752.3	29.96	761.0	53.1	11.7	94	SW	2	0.9	.....	5ck	0	SW	.....	0	0	Fair.	S. Woods, M. A.
Little Glace Bay, N. S.	30.21	767.3	30.25	768.3	31.2	— 0.4	87	SW	3	1.3	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.80	756.9	30.01	762.2	46.8	8.2	79	N	8	3.6	.....	3ck	3ks	W	.....	Inap.	Inap.	Fair.	C. H. McLeod, C. E
Moose Factory, Ontario	29.86	758.4	29.90	759.4	30.6	— 0.8	94	NE	.....	.....	4	.....	10n	.....	.....	Inap.	Inap.	Raining	J. R. Nason.
Norwood, Ontario	29.25	742.9	29.93	760.2	58.5	14.7	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.25	742.9	29.93	760.2	59.0	15.0	65	S	7	3.1	.....	3cs	0	SE	.....	0	0	Fair.	Rev. R. Mosley.
Peterboro, Ontario	29.22	742.2	29.96	761.0	59.7	15.4	76	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.31	744.5	30.00	762.0	56.1	13.4	93	Calm	0	0	.....	10k	0	NW	.....	0	0	Fair.	H. Morgan.
Port Stanley, Ontario	29.35	745.5	29.98	761.5	60.1	15.6	80	E	1	0.4	.....	5k	0	SE	.....	0	0	Fair.	M. Payne.
Quebec, Quebec	29.74	755.4	30.07	763.8	44.0	6.7	84	NE	.....	.....	6	0	0	.....	.....	0	0	Clear.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.48	748.8	29.94	760.5	45.5	7.5	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	W. H. McIntyre.
St. John, N. B.	29.96	761.0	30.13	765.3	46.0	7.8	81	SW	3	1.3	.....	7ck	0	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.24	742.7	29.94	760.5	61.1	16.2	70	S	11	4.9	.....	0	Sm'e	.....	.....	0	0	Smoky	K. Stewart.
Stratford, Ontario	28.72	729.5	29.97	761.2	58.9	14.9	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	30.23	767.8	30.27	768.8	36.8	2.7	55	S	1	0.4	.....	.....	10s	.....	.....	0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.62	752.3	30.00	762.0	53.0	11.7	82	SW	3	1.3	.....	5ck	Haze	SW	.....	0	0	Fair.	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.92	734.6	29.96	761.0	64.5	18.1	72	SE	3	1.3	.....	0	6ks	.....	.....	0	0	Fair.	Professor Wolverton.
Yarmouth, N. S.	30.07	763.8	30.13	765.3	50.4	10.2	84	S	5	2.2	.....	8ck	0	W	.....	0	0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.96	761.0	30.22	767.6	38	3.3	63	W	.....	.....	.....	0	0	.....	.....	0	0	Fair.	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	30.16	766.1	34.9	1.6	.....	NW	.....	.....	3	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.01	762.2	30.09	764.3	68	20.0	65	S	4	1.8		0	0			0	0	Clear.	
Alpena, Michigan	29.23	742.4	29.85	758.2	64	17.8	44	SW	8	3.6		8c	0	Calm		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.87	733.3	29.99	761.7	62	16.7	83	NE	6	2.7		5k	0	W		0.09	2.3	Fair	
Atlantic City, New Jersey	30.08	764.0	30.08	764 0	57	13.9	94	SE	8	3.6			10s		Calm	0	0	Cloudy	
Augusta, Georgia	29.86	758.4	30.06	763.5	64	17.8	83	N	3	1.3		5cs	0	N		0.03	0.8	Fair	
Baltimore, Maryland	30.04	763.0	30.08	764.0	62	16.7	77	NE	7	3.1		10cs	0	E		0	0	Cloudy	
Barnegat, New Jersey	30.07	763.8	30.09	764.3	57	13.9	87	SE	9	4.0			10s		SE	0	0	Cloudy	
Bismarck, Dakota	27.96	710.2	29.82	757.4	54	12.2	79	E	6	2.7		5c	0	Calm		0.08	2.0	Fair	
Boerne, Texas	28.52	724.4	29.80	756.9	64	17.8	100	SW	4	1.8		5k	0	S		0.37	9.4	Fair	
Boise City, Idaho	26.96	684.8	29.92	760.0	42	5.6	83	NW	8	3.6			10s		Calm	0.05	1.3	Cloudy	
Boston, Massachusetts	29.95	760.7	30.10	764.5	68	20.0	56	SW	12	5.4		2c	0	Calm		0	0	Fair	
Brackettville, Texas	28.78	731.0	29.81	757.2	66	18.9	95	SE	5	2.2		0	2s		SE	0	0	Fair	
Breckenridge, Minnesota	28.80	731.5	29.78	756.4	52	11.1	86	NE	8	3.6		2k	0	E		0	0	Fair	
Brownsville, Texas	29.88	758.9	29.92	760.0	78	25.6	86	Calm	0	0		0	0			0	0	Clear.	
Buffalo, New York	29.29	744.0	29.96	761.0	62	16.7	56	SW	4	1.8		2cs	Haze	W	Calm	0	0	Clear.	
Burkes, Arizona					62	16.7	36	Calm			0	5ck	0	W		0	0	Clear	
Burlington, Vermont	29.72	754.9	30.00	762.0	62	16.7	67	SW	5	2.2		2ck	0	W		0	0	Fair	
Cairo, Illinois	29.67	753.6	30.05	763.3	63	17.2	83	Calm	0	0		0	Fog			0.08	2.0	Clear	
Campo, California	27.38	695.4	29.94	760.5	35	1.7	80	S	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.77	756.1	29.78	756.4	66	18.9	95	NE	27	12.1			10n		W	2.38	60.5	Light rain	
Cape Henry, Virginia	29.91	759.7	29.92	760.0	61	16.1	88	NE	26	11.6			10s		NE	0.14	3.6	Cloudy	
Cape Lookout, N. Carolina	29.78	756.4	29.80	756.9	66	18.9	100	NE	20	8.9			10n		Calm	3.20	81.3	Light rain	
Cape May, New Jersey	30.02	762.5	30.05	763.3	62	16.7	77	E	12	5.4			10n		Calm	0.05	1.3	Light rain	
Castroville, Texas	29.17	740.9	29.85	758.2	68	20.0	90	SE	1	0.4			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.02	762.5	30.04	763.0	73	22.8	76	NW	7	3.1		5cs	0	Calm		0	0	Fair	
Charleston, South Carolina	29.91	759.7	29.96	761.0	67	19.4	74	NW	8	3.6		0	8s		NW	0.01	0.3	Cloudy	
Charlotte, North Carolina	29.15	740.4	29.95	760.7	61	16.1	82	N	6	2.7			10s		NE	0	0	Cloudy	
Chattanooga, Tennessee	29.26	743.2	30.04	763.0	63	17.2	89	W	2	0.9		8ck	Sm'e	N	Calm	0	0	Fair	
Cheyenne, Wyoming	23.86	606.0	29.80	756.9	48	8.9	29	W	4	1.8			10s		W	0	0	Cloudy	
Chicago, Illinois	29.27	743.4	29.94	760.5	64	17.8	68	S	4	1.8		0	Haze		Calm	0	0	Clear.	
Chincoteague, Virginia	29.98	761.5	30.00	762.0	58	14.4	100	NE	18	8.0			10n		NE	0.03	0.8	Light rain	
Cincinnati, Ohio	29.38	746.2	30.01	762.2	65	18.3	63	W	3	1.3		0	Haze		Calm	0	0	Clear	
Cleveland, Ohio	29.26	743.2	29.97	761.2	62	16.7	51	SE	6	2.7		0	0			0	0	Clear	
Coleman City, Texas	28.15	715.0	29.77	756.1	63	17.2	83	Calm	0	0		0	0			0.11	2.8	Clear	
Columbus, Ohio	29.16	740.7	29.98	761.5	60	15.6	65	SE	1	0.4		0	Fog		Calm	0	0	Clear.	
Concho, Texas	28.02	711.7	29.64	752.8	64	17.8	94	S	1	0.4		0	2s		SW	0	0	Fair	
Corsicana, Texas	29.52	749.8	29.98	761.5	65	18.3	94	S	8	3.6			Fog			0	0	Light fog	
Davenport, Iowa	29.30	744.2	29.92	760.0	63	17.2	72	SW	6	2.7		4c	0	W		0	0	Clear	
Dayton, Washington T'y					41	5.0	74	SW			2		10s		S	0.31	7.9	Cloudy	
Deadwood, Dakota	25.11	637.8			65	18.3	26	S	8	3.6			10s		SW	0	0	Cloudy	
Decatur, Texas	28.90	734.0	30.03	762.7	73	22.8	67	SE	8	3.6			10s		SW	0	0	Cloudy	
Delaware Breakwater, Del	30.04	763.0	30.06	763.5	56	13.3	94	SE	12	5.4			10n		SE	Inap.	Inap.	Light rain	
Denison, Texas	29.18	741.1	29.95	760.7	67	19.4	89	SE	5	2.2			10s		SE	0	0	Cloudy	
Denver, Colorado	24.57	624.1	29.79	756.7	56	13.0	19	SE	6	2.7		8ck	2s	SW	SW	0	0	Cloudy	
Des Moines, Iowa	29.01	736.8	29.85	758.2	65	18.3	63	SW	4	1.8		0	0			0	0	Clear.	
Detroit, Michigan	29.30	744.2	29.96	761.0	61	16.1	61	NW	4	1.8		5k	0	Calm		0	0	Fair	
Dodge City, Kansas	27.24	691.9	29.43	747.5	62	16.7	89	SE	20	8.9		0	0			0	0	Clear.	
Dubuque, Iowa	29.22	742.2	29.89	759.2	65	18.3	63	S	11	4.9		5c	Haze	S	Calm	0	0	Fair	
Duluth, Minnesota	29.15	740.4	29.81	757.2	58	14.4	82	NW	8	3.6		1k	0	NW		0.02	0.5	Clear.	
Eagle Pass, Texas	29.27	743.4	29.98	761.5	72	22.2	80	SE	4	1.8		0	0			0	0	Clear	
Eastport, Maine	30.01	762.2	30.08	764.0	48	8.9	70	S	4	1.8		2ck	Haze	W	Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.28	743.7	29.97	761.2	67	19.4	42	SW	4	1.8		0	5ks	SW		0	0	Fair	
Escanaba, Michigan	29.12	739.6	29.75	755.6	60	15.6	65	S	8	3.6		5k	0	SW		0	0	Fair	
Florence, Arizona	28.35	720.1	29.95	760.7	63	17.2	62	SW	3	1.3		0	0			0	0	Clear.	
Fort Apache, New Mexico	25.00	635 0	30.44	773.2	45	7.2	46	E	2	0.9		2cs	5s	Calm	N	0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.64	702.0	29.41	747.0	53	11.7	72	SE	8	3.6		5c	0	W		0.21	5.3	Fair	
Fort Custer, Montana	26.41	670.8			46	7.8	61	SW	2	0.9		0	0			0	0	Clear.	
Fort Davis, Texas	25.20	640.1	30.16	766.1	57	13.9	47	W	1	0.4		0	0			0	0	Clear.	
Fort Elliot, Texas	26.86	682.2	28.99	736 3	65	18.3	78	SE	20	8.9			10s		SE	0	0	Cloudy	
Fort Gibson, Indian Ter	29.42	747.3	29.94	760.5	67	19.4	74	SE	3	1.3		1c	0	Calm		0	0	Clear	
Fort Grant, Arizona	25.16	639.0	29.96	761.0	59	15.0	20	E	2	0.9		8k	0	Calm		0	0	Cloudy	
Fort Griffin, Texas	28.67	728.2	29.91	759.7	65	18.3	84	Calm	0	0		0	8s		Calm	0	0	Cloudy	
Fort Keogh, Montana	26.89	683.0			54	12.2	43	E	3	1.3		10cs	0	Calm		0	0	Cloudy	
Fort McKavett, Texas	27.67	702.8	29.53	750 0	64	17.8	89	S	9	4.0			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.72	729 5	29.80	756.9	65	18.3	94	NE	10	4.5			Fog		SE	0	0	Foggy	
Fort Stevenson, Dakota	27.92	709.2			50	10.0	78	SE	4	1.8		2c	0	Calm		0.27	6.9	Fair	
Fort Verde, Arizona					55	12.8	45	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.15	715 0	29.70	754.4	53	11.7	73	SW	1	0.4		0	5ks		Calm	0	0	Fair	
Galveston, Texas	29.94	760.5	29.98	761.5	71	21.7	90	Calm	0	0		0	Fog			0	0	Clear	
Grand Haven, Michigan	29.30	744.2	29.92	760.0	64	17.8	68	S	12	5.4		0	0			0	0	Clear.	
Helena, Montana					50	10.0	58	S	6	2.7			10s		S	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.22	742.2	29.97	761.2	66	18.9	69	Calm	0	0		0	Sm'e		Calm	0	0	Clear.	
Indianola, Texas	29.96	761.0	29.99	761.7	73	22.8	85	E	7	3.1		0	0			0.05	1.3	Clear	
Jacksboro, Texas	28.81	731.8	29.90	759.4	70	21.1	75	SE	6	2.7		0	0			0	0	Clear.	
Jacksonville, Florida	29.98	761.5	30.01	762.2	70	21.1	80	NW	1	0.4		5k	0	NW		0.36	9.1	Fair	
Keokuk, Iowa	29.30	744.2	29.89	759.2	64	17.8	73	S	3	1.3		2cs	Sm'e	Calm	Calm	0	0	Dense smoke	
Key West, Florida	30.02	762.5	30.05	763.3	81	27.2	70	SW	2	0.9		2cs	0	SW		Inap.	Inap.	Fair	
Kittyhawk, North Carolina	29.85	758.2	29.87	758.7	60	15.6	94	N	33	14.8			10n		NE	0.57	14.5	Light rain	
Knoxville, Tennessee	29.06	738.1	30.04	763.0	62	16.7	83	SW	2	0.9			10ks		SW	0	0	Cloudy	
La Crosse, Wisconsin	29.12	739.6	29.83	757.7	65	18.3	63	S	4	1.8		5k	0	W		0	0	Fair	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	54	12.2	32	S	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.53	750 0	29.87	758.7	65	18.3	78	SE	4	1.8		0	0			0	0	Clear	
Leavenworth, Kansas	29.02	737.1	29.82	757.4	68	20.0	60	S	8	3.6		4cs	0	Calm		0	0	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.69	754.1	30.02	762.5	64	17.8	89	Calm	0	0		2ck	0	NE		0	0	Fair	
Los Angeles, California	29.67	753.6	30.01	762.2	54	12.2	87	NW	1	0.4			10s		NW	0	0	Cloudy	
Louisville, Kentucky	29.46	748.3	30.01	762.2	65	18.3	78	SW	3	1.3		2k	5n	SW	Calm	Inap.	Inap.	Light rain	
Lynchburg, Virginia	29.36	745.7	30.02	762.5	65	18.3	78	NE	4	1.8			10s		Calm	0.03	0.8	Cloudy	
Madison, Wisconsin	28.91	734.3	29.86	758.4	65	18.3	68	SW	15	6.7		1c	0	W		0	0	Clear	
Marquette, Michigan	29.02	737.1	29.68	753.9	67	19.4	50	W	16	7.2		0	0			0	0	Clear	

UNITED STATES SERIES -CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.30	718.8	30.01	762.2	66	18.9	84	S	1	0.4		0	0			0.26	6.6	Clear	
Memphis, Tennessee	29.66	753.4	30.09	764.3	64	17.8	78	SE	6	2.7		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.20	741.7	29.90	759.4	63	17.2	62	SW	12	5.4		8k	0	W		0	0	Fair	
Mobile, Alabama	30.00	762.0	30.04	763.0	69	20.6	95	N	3	1.3		2c	2ks	NW	Calm	0.01	0.3	Fair	
Montgomery, Alabama	29.83	757.7	30.06	763.5	64	17.8	94	N	6	2.7		2k	8ks	N	N	0.09	2.3	Clearing	
Morgantown, West Virginia	29.05	737.9	30.02	762.5	60	15.6	77	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	23.94	608.1	30.30	769.6	43	6.1	83	NW	27	12.1		2c	0	Calm		0	0	Clear	
Nashville, Tennessee	29.53	750.0	30.05	763.3	68	20.0	74	W	3	1.3		5ck	0	SW		0.16	4.1	Fair	
New Haven, Connecticut	30.03	762.7	30.15	765.8	62	16.7	67	S	2	0.9		0	Haze		Calm	0	0	Fair	
New London, Connecticut	30.12	765.0	30.17	766.3	57	13.9	75	SW	5	2.2		4cs	Haze	Calm	Calm	0	0	Fair	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	71	21.7	90	E	4	1.8		5ck	Sm'e	Calm	Calm	0	0	Fair	
Newport, Rhode Island	30.11	764.8	30.16	766.1	56	13.3	87	S	8	3.6		5c	Haze	Calm		0	0	Fair	
New River, North Carolina					65	18.3	100	N			1		10s		NE			Cloudy	
New York, New York	29.96	761.0	30.14	765.5	61	16.1	82	E	4	1.8		Haze	Fog	Calm	Calm	0	0	Foggy	
Norfolk, Virginia	29.88	758.9	29.94	760.5	62	16.7	88	NE	16	7.2			10n		W	0.04	1.0	Light rain	
North Platte, Nebraska	26.84	681.7	29.28	743.7	62	16.7	72	S	36	16.1		10c	0	SW		0	0	Cloudy	
Olympia, Washington Ter	29.63	752.6	29.67	753.6	41.0	5.0	82	S	21	9.4			10n		Calm	0.55	14.0	Light rain	
Omaha, Nebraska	28.69	728.7	29.73	755.1	69	20.6	65	S	4	1.8		2c	0	Calm		0.02	0.5	Clear	
Oswego, New York	29.70	754.4	30.02	762.5	66	18.9	54	S	10	4.5		1ck	0	Calm		0	0	Clear	
Pembina, Dakota	28.92	734.6	29.75	755.1	51	10.6	86	SW	5	2.2		0	0			0.11	2.8	Clear	
Pensacola, Florida	30.01	762.2	30.05	763.3	69	20.6	85	NW	2	0.9		5cs;k	0	W; NW		0	0	Fair	
Philadelphia, Pennsylvania	30.06	763.5	30.11	764.8	57	13.9	94	NE	8	3.6		10cs	Haze	Calm	Calm	0	0	Cloudy	
Phœnix, Arizona	28.66	728.0	30.43	772.9	61	16.1	45	E	7	3.1		0	0			0	0	Clear	
Pike's Peak, Colorado	17.71	449.8	29.92	760.0	27	— 2.8	53	SW	62	27.7		10cs	0	SW		0	0	Cloudy	
Pilot Point, Texas	29.21	741.9	30.03	762.7	69	20.6	100	S	8	3.6			10s		Calm	Inap.	Inap.	Cloudy	
Pioche, Nevada	23.80	604.5	29.57	751.1	53	11.7	19	S	13	5.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.02	762.5	58	14.4	70	Calm	0	0		0	Haze		Calm	0	0	Clear	
Port Huron, Michigan	29.31	744.5	29.95	760.7	60	15.6	65	SW	7	3.1		8k	Haze	SW		0	0	Fair	
Portland, Maine	30.03	762.7	30.08	764.0	52	11.1	66	E	3	1.3		0	0			0	0	Clear	
Portland, Oregon	29.80	756.9	29.87	758.7	43	6.1	83	S	14	6.3			10n		SW	0.28	7.1	Light rain	
Portsmouth, North Carolina																0.80	20.8		
Prescott, Arizona	24.69	627.1	30.05	763.3	45	7.2	61	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	30.01	762.2	30.03	762.7	77	25.0	77	NW	6	2.7			10ks		SW	0	0	Threatening	
Red Bluff, California	29.68	753.9	30.04	763.0	47.5	8.6	74	NW	21	9.4		0	0			Inap	Inap.	Clear	
Rio Grande City, Texas	29.74	755.4	29.96	761.0	75	23.9	90	SE	6	2.7		0	5s		SE	0	0	Fair	
Rochester, New York	29.37	746.0	29.97	761.2	63	17.2	57	SW	8	3.6		2k	Haze	W	Calm	0	0	Clear	
Roseburg, Oregon	29.46	748.3	30.04	763.0	49	4.4	91	SW	1	0.4			10s		Calm	0.01	0.3	Cloudy	
Sacramento, California	29.97	761.2	30.04	763.0	49	9.4	64	W	13	5.8		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	29.98	761.5	63	17.2	78	S	6	2.7		1c	0	Calm		Inap.	Inap.	Clear	
St. Paul, Minnesota	28.98	736.1	29.77	756.1	61	16.1	77	Calm	0	0		5k	5ks	W	W	0.02	0.5	Cloudy	
Salt Lake City, Utah	25.28	642.1	29.62	752.3	63	17.2	52	SE	15	6.7		2c	0	Calm		0	0	Clear	
San Antonio, Texas	29.29	744.0	29.97	761.2	67	19.4	95	SE	1	0.4			10s		SE	0.03	0.8	Cloudy	
San Diego, California	29.93	760.2	30.00	762.0	59	15.0	82	NW	1	0.4			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.31	744.5	29.97	761.2	59	15.0	76	SE	3	1.3		0	Haze		Calm	0	0	Clear	
Sandy Hook, New Jersey	30.10	764.5	30.14	765.5	53	11.7	93	E	6	2.7		0	5s		Calm	0	0	Fair	
San Francisco, California	30.05	763.3	30.11	764.8	49	9.4	71	NW	7	3.1		0	1ks		NW	0.16	4.1	Clear	
Santa Fé, New Mexico	23.27	591.0	29.82	757.4	47	8.3	53	E	8	3.6		0	0			0	0	Clear	
Savannah, Georgia	29.91	759.7	30.01	762.2	67	19.4	84	N	7	3.1		1c	0	W		0.07	1.8	Clear	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	70	21.1	85	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	29.87	758.7	29.90	759.4	66	18.9	95	NW	9	4.0		10k	0	NW		1.06	26.9	Cloudy	
Socorro, New Mexico	25.34	643.6	29.41	747.0	50	10.0	32	Calm	0	0		0	5s		Calm	0	0	Fair	
Springfield, Illinois	29.34	745.2	30.00	762.0	60	15.6	85	S	6	2.7		0	0			0	0	Clear	
Springfield, Massachusetts	30.02	762.5	30.15	765.8	65	18.3	73	S	4	1.8		2c	0	SW		0	0	Fair	
Stockton, Texas	26.87	682.5	29.87	758.7	64	17.8	83	S	6	2.7		0	0			0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	57	13.9	81	S	6	2.7		5c	Haze	S		0.47	11.9	Fair	
Toledo, Ohio	29.29	744.0	29.95	760.7	64	17.8	68	NW	1	0.4		5ck	Sm'e	W		0	0	Fair	
Tucson, Arizona	27.45	697.2	30.00	762.0	66	18.9	40	SW	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.50	749.3	30.00	762.0	42.5	5.8	79	SW	8	3.6		0	2s		SW	0.03	0.8	Clear	
Uvalde, Texas	29.04	737.6	29.84	757.9	70	21.1	85	E	1	0.4		0	5s		SE	0	0	Fair	
Vicksburg, Mississippi	29.79	756.7	30.04	763.0	66	18.9	89	SE	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	23.94	608.1	29.42	747.3	40	4.4	82	S	4	1.8			10s		Calm	0.68	17.3	Cloudy	
Visalia, California	29.61	752.1	29.98	761.5	54	12.2	67	NW	7	3.1			10ks		NW	0	0	Cloudy	
Washington, D. C	29.96	761.0	30.07	763.8	62	16.7	77	N	7	3.1		1ck	8s	Calm	NE	0	0	Cloudy	
Wickenburg, Arizona					55	12.8	50	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.80	756.9	29.87	758.7	64	17.8	94	NW	12	5.4			10s		Calm	0.82	20.8	Cloudy	
Winnemucca, Nevada	25.44	646.2	29.80	756.9	40	4.4	82	SW	14	6.3			10n		SW	0.03	0.8	Light rain	
Wood's Holl, Massachusetts	30.12	765.0	30.16	766.1	55	12.8	87	SW	10	4.5		8cs	0	Calm		0	0	Fair	
Yankton, Dakota	28.50	723.9	29.73	755.1	65	18.3	73	SW	2	0.9		5ck	0	NW		0.46	11.7	Fair	
Yuma, Arizona	29.63	752.6	29.77	756.1	68	20.0	30	SW	6	2.7		5k	0	SW		0	0	Fair	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.04	559.8			56.2	13.4	72	Calm	0	0		5cs	2ks			0.05	1.3	Cloudy	Thomas Herran.
Havana, Cuba, W. I	30.04	763.0	30.08	764.0	80	26.7	74	SE	2.4	1.1		4cs	0	Calm		0.15	3.8	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I					75	23.9	82	Calm	0	0		8c	2ks	Calm				Fair	James Gall.
Navassa, W. I	29.96	761.0	30.04	763.0	76.5	24.7	69	E	12	5.4		8ck	8s	SE	E	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	82	27.8	83	E			2	5ck	6k	E		0.400	10.16	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.44	747.8	30.00	762.0	77	25.0	94	Calm			0		10s			0	0		Francesco J. Cisneros.
Rivas, Nacaragua								S					4k		S	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I	30.06	763.5	30.08	764.0	79	26.1	74	Calm	0	0		Haze	2c		Calm	0	0		Robert Mason
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.94	760 5	29.99	761.7	16.0	— 8.9	92	W	8	3.6		3k	0	W		0	0	Fair	J. Fortsecue& W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.01	762.2	69	20.6	85	NE	2	0.9			d		Calm	0	0			Clear	
§ Navy Yard, Portsmouth, N. H.	30.09	764.3	54	12.2	80	Calm	0	0			10			0	0			Hazy	
Naval Hospital, Yokohama, Japan	29.98	761.5	62.5	16.9	86	SW			2		0			0	0			Clear	
§ Adams, Between Guáito and Punta Arenas.	29.96	761.0	78	25.6	91	N			1		1		N			Smooth		Clear	
§ Alaska, Callao, Peru *	29.94	760.5	66	18.9	84	SSE			2		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.95	760.7	65	18.3	78	S			4		2		Calm	0	0	Smooth		Fair	
§ Colorado, New York, N. Y.	30.09	764.3	57	13.9	94	SE	1	0.4			0			0	0			Hazy	
§ Constitution, Hampton Roads, Va.	29.95	760.7	61	16.1	94	E	10	4.5			8							Overcast	
§ Enterprise, N. 32° 08′, W. 73° 09′	29.94	761.7	72	22.2	100	SW			6		9		SW			Rough	SW	Cloudy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.00	762.0	62	16.7	88	ENE	10.8	4.8			10		ENE	0.05	1.3			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	30.06	763.5	47	8.3	92	W	2.4	1.1			4		W	0.126	3.20			Fair	
§ Jamestown, Sitka, Alaska *	29.48	748.8	42	5.6	91	E			1		10		E			Smooth		Rainy	
Kearsarge, Boca del Toro, Chiriqui	30.03	762.7	79	26.1	91	W			0–1		2		W			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.21	767.3	49	9.4	71	N			2		0			Blank	Blank	Smooth	N	Hazy	
§ Michigan, Erie, Pa.	29.90	759.4	68	20.0	51	S			2		8		SW					Cloudy	
§ Monocacy, Shanghai, China	29.83	757.7	63	17.2	94	NE			2–3		10			0	0			Overcast	
§ New Hampshire, Port Royal, S. C.	29.97	761.2	66	18.9	89	NNW	10	4.5			8		N	0.19	4.8			Cloudy	
Nipsic, N. 36° 06′, W. 3° 58′	29.86	758.4	57	13.9	??	W			5		8					Light	W	D. clouds	
§ Onward, Ancon Bay, Peru †	29.97	761.2	64	17.8	94	NW			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.85	758.2	66	18.9	100	ENE			3		10							Rainy	
§ Passaic, Washington, D. C.	30.09	764.3	60	15.6	88	NE			2		2			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.20	767.1	50	10.0	93	SW			3		2					Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	30.06	763.5	61	16.1	88	NE			1		8		E					Cloudy	
§ Quinnebaug, Mogador, Marocco	29.95	760.7	61	16.1	88	SW			6		10		S;W			Heavy	SW	Squally	
§ Richmond, Shanghai, China	29.86	758.4	65	18.3	94	NE			3		10		NE	0	0			Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.12	765.0	70	21.1	100	SE	1	0.4			8		Calm	0	0			Fair	
§ Saratoga, N. 38° 10′, W. 44° 20′	30.25	768.3	62	16.7	88	NNE			4		2		NE	0	0	Mod'ate	E	Clear	
§ Shenandoah, Montevideo, Uruguay	30.22	767.6	47	8.3	77	N			3		0					Smooth		Clear	
§ St. Louis, League Island, Pa.	30.12	765.0	61	16.1	82	NE	6	2.7			8			0	0			Misty	
Swatara, N. 6° 07′, E. 96° 56′ †	29.81	757.2	84	28.9	87	W			2		8		W			Mod'ate	W	Fair	
§ Tennessee, Aspinwall, Panama	29.95	760.7	80	26.7	96	Calm	0	0			5		NE	0	0	Smooth		Fair	
Ticonderoga, Chosan, Corea	29.92	760.0	65	18.3	100	SW			2		10		E			Smooth		Light rain	
§ Trenton, Smyrna, Turkey	29.79	756.7	85	29.4	39	W			2		5			0	0	None		Cloudy	
§ Tuscarora, Mare Island, Cal.	30.07	763.8	50	10.0	72	WSW			3–4		0			0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.15	765.8	60	15.6	82	ESE			1		9		S					Misty	
§ Wabash, Boston, Mass.	30.12	765.0	65	18.3	68	WSW	10	4.5			2			0.01	0.3			Fair	
§ Wachusett, Montevideo, Uruguay	30.19	766.8	50.5	10.3	96	NNW			2		0			0	0	Smooth		Clear	
Wyoming, Constantinople, Turkey	29.75	755.6	57	13.9	81	NE			3–4		5		NE			Smooth	NE	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 50° 42', W. 18° 27'	30.36	771.1	54	12.2		Calm			0		2		ENE			Smooth	NE	Fair	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 51° 27', W. 9° 15'	30.27	768.8	53	11.7	73	NNW			1		5		NW	0	0	Smooth		Clear	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 41° 20', W. 56° 08' *†	30.32	770.1	52	11.1	93	E			2		2		E	1 h'r	1 h'r	Mod'ate	SW	Clear	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 33° 26', W. 118° 10' †	30.01	762.2	57	13.9	94	NNE			2		2		S	0	0	Smooth	WSW	Clear.	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Rislus.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 32° 00', E. 132° 48' †	30.03	762.7	71	21.7	71	S			4		5		S			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	29.19	766.8	52	11.1	87	SE to NNE				k				0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 33° 52', W. 118° 31' †	30.02	762.5	60	15.6		NE			1		0					Mod'ate	NE	Clear.	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California, G. Dobney, San Francisco, Cal. †	30.03	762.7	45	7.2		W			3		0							Clear	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin.																			F. A. Johnston.
§S. S. Australia, S. 34° 03′, E. 169° 09′	29.68	753.9				SSW			7		5					Heavy	SW	Fair	Banneman.
§S. S. China, W. B. Seabury. N. 14° 06′, W. 91° 43′ †.	29.90	759.4	80	26.7	87	E			2		2		NE			Long	SW	Clear	
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of Panama, M. Connolly. San Jose, Guatemala †	29.98	761.5	74	23.3		NW			1		2		NW	0	0	Mod'ate	NE	Fair	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 37° 33′, W. 125° 36′ †	30.09	764.3	50	10.0	72	WNW			4		1		WNW			Mod'ate	W	Clear	
§S. S. City of Sidney, H. C. Dearborn. Sydney, N. S. W. *†	30.13	765.3	66	18.9		W			6		2		W	0	0	Smooth		Clear	E. LeSack.
§S. S. City of Tokio, J. Maury. N. 30° 54′, E. 131° 12′ †	30.19	766.8	70	21.1	80	ESE			2		0			0	0	Smooth		Clear	F. S. Doane.
§S. S. Colima, R. R. Searle, N. 7° 12′, W. 80° 26′ †	29.96	761.0	80	26.7	100	ENE			2		2		Calm	0	0	Smooth	S	Clear	
§S. S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§S. S. Granada, J. M. Cavarly																			
S. S. Idaho, Tacoma, Washington Ter. †	30.04	763.0				SE			1		8		NE	0	0	Smooth		Cloudy	
§S. S. Zealandia, R. C. Ghest, N. 2° 42′, W. 164° 16′	29.90	759.4				ENE			3				NNE			Smooth	NE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes, N. 47° 24′, W. 23° 40′ †	30.36	771.1	53	11.7		NE			1		5		E	Light	Light	Smooth		Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			W. S. Waugh.
S. S. Britanic, H. Perry, N. 44° 31′, W. 48° 56′ †	30.18	766.6	47	8.3	100	NW			6		10		N	0	0	Mod'ate	NE	Overcast	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			Mehaffey.
Schr Adele Fuller, J. Jorgensen, Handkerchief Light Ship, Mass.	30.19	766.8	54	12.2	80	SW	4	1.8			Fog			0	0	Smooth		Foggy	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 05′, E. 52° 55′ *†	30.04	763.0	79	26.1		SSW			1		5		S	0	0	Smooth	SSE	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin, N. 22° 15′, W. 64° 45′ †	30.33	770.4	80	26.7		ESE			5		1		ESE	0	0	Mod'ate	SE	Clear	
Hippolyta, N. 47° 09′, W. 31° 12′ *	30.07	763.8	62	16.7		SSE			6		8		S	0	0	Mod'ate	NE; SSE	Fair	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

Note.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 6, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

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

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mogador, Marocco			30.15	765.9				W			4		6			0.295	7.5	Cloudy	Dr. Ollive.
Nemours			29.80	756.8	64.9	18 3	90	WNW			2		6			0.110	2.8	Cloudy	Metge.
Algiers			29.72	754.8	62.6	17.0	67	W			5		2			Inap.	Inap	Fair	Nicolas.
La Calle			29.69	754.2	63.5	17.5	88	ENE			5		3			0	0	Pretty fair	Fonfrède.
Tunis			29.70	754.3															Jacques
Sfax			29.66	753.3															Gau.
Saida			29.82	757.3															Bernard.
Tebessa			29.74	755.4	75.2	24.0	14	WSW			6		0			0	0	Clear	Watrin.
Geriville					62.8	17.1	40	NW			3		10			0.157	4.0	Covered	Brugniaux.
Laghouat			29.74	755.5	65.1	18.4	29	W			6		5			Inap.	Inap.	Cloudy	Suart.
Biskra			29.68	753.8	82.0	27.8	43	SE			2		0			Inap.	Inap	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet: Tebessa, 1,088? m., or 3,570?.feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.17	740.9	29.70	754.3	70.7	21.5	48	SW			5		5			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.98	736.2	29.73	755.1	65.5	18.6	68	SE	4.0	1.8			10			0.197	5.0		Dr. Wierzbicki.
Eperies	28.89	733.9	29.75	755.7	61.2	16.2	88	S			2		10ks		N	0.236	6.00		Julius Mikolik.
Gratz	28.47	723.2	29.69	754.2	63.0	17.2	72	S			3		7			0	0		Andreas Rospini.
Hermannstadt	28.40	721.4	29.78	756.4	68.0	20.0	36	SSE			5		10			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.37	720.5	29.67	753.6	61.9	16.6	70	W			1		3			0.185	4.7		The Staff.
Lemberg	28.79	731.3	29.74	755.5	66.0	18.9	29	S			4		0			0	0		Dr. T. Stanecki.
Pola	29.69	754.1	29.80	756.8	66.7	19.3	76	SSE			1		3			0	0		I.R.Hydrographic Office.
Szathmar	29.34	745.3	29.79	756.6	72.0	22.2	43	S			3		4			0	0		Pet. Pancsics, S. J.
Szegedin	29.48	748.8	29.75	755.7	62.6	17.0	82	SE			2		10			0.591	15.0		Karl Stancel.
Trieste	29.69	754.1	29.79	756.7	63.7	17.6	88	Calm			0		1			0.083	2.1		P. Busin.
Vienna	28.99	736.3	29.72	754.9	64 8	18.2	60	SW			2		8			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 5, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	30.02	762.5	30.12	765.0	47.0	8.3		NNW	21	9.4			4			0	0	Squally	W. Boswell.
Ardrossan	30.09	764.3	30.10	764.5	53	11.7		NW			3		4					Blue sky	G. Carrick.
Armagh, (Observatory)	29.95	760.7	30.18	766.6	52.0	11.1		NNW	11	4.9			10					Overcast	S. Call.
Bidston (Liverpool Obs)			30.10	764.5	52	11.1		WNW	15	6.7			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.53	750.0	30.04	763.0	54.8	12.7		NW	6	2.7			3					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.65	753.1	30.04	763.0	54.5	12.5	57	NE			1		6			0.01	0.3	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	81	27.2		NE			2		3					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.95	760.7	30.04	763.0	57.5	14.2		NNE			1		1					Blue sky	H. Todd.
Cardington			30.04	763.0	58.0	14.4		NE			1		1					Blue sky	John McLaren.
Chatham (School M. E.)	29.90	759.4	30.03	762.7	48.1	8.9		NE			1		9					Gloomy	Sapper W. Gibson, R. E.
Donaghadee	30.13	765.3	30.17	766.3	53	11.7		N			5		3					D. clouds	J. Mac Gowan.
Dover	29.94	760.5	29.97	761.2	49	9.4		NE			5		7					¾ clouded	J. Costello.
Falmouth (Observatory)	29.82	757.4	30.05	763.3	57.2	14.0		NNW			3		1					Foggy	The Staff.
Fort Napier, Natal	28.02	711.7	30.22	767.6	74.2	23.4		NW			2		3					Blue sky	Cbrp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.76	754.4	29.93	760.2	87	30.6		S			1		10					D. clouds	
Galway (Queen's College)			30.18	766.6	50	10.0		N			2		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.74	755.4	29.79	756.7	58.6	14.8		SW			5		6					D. clouds	Sr't. W. Allen.
Glasgow, (Observatory)	29.89	759.2	30.09	764.3	55.1	12.8		N			2		7k					D. clouds	D. G. Maclean.
Great Yarmouth	30.04	763.0	30.05	763.3	51	10.6		NE			4		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.86	758.4	30.03	762.7	52.3	11.3		NE			3		10					Overcast	The Staff, for G.B.Airy.
Guernsey	29.77	756.1	30.00	762.0	48	8.9		NNE			3		10					Gloomy	Dr.S.E.Hoskins, F.R.S.
Helston	30.21	767.3	30.34	770.6	60	15.6		N			4	2c				0	0	Very fine	M. P. Moyle.
Holyhead	30.10	764.5	30.14	765.5	50	10.0		N			4		1					Blue sky	John Tilston.
Jersey	29.70	754.4	29.99	761.7	48.8	9.3		NNE			4		10					Misty	J. Fisher.
Kew (Observatory)	30.00	762.0	30.03	762.7	52.0	11.1		NE	16	7.2			7					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.81	757.2	30.06	763.5	56.0	13.3		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.71	754.6	29.78	756.4	71	21.7		SE			3		0					Blue sky	A. King.
Nairn	30.06	763.5	30.15	765.8	52	11.1		NNW			3		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.05	763.3	75.5	24.2		SE			0		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.88	758.9	30.07	763.8	59.5	15.3		NE			2	c	7k		NE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.54	750.3	30.07	763.8	56.4	13.6		NNE			3		8					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.81	757.2	30.07	763.8	57	13.9		ENE			3		3					Blue sky	The Staff, for E. J. Stone, Esq.
Plymouth	29.96	761.0	30.03	762.7	61.2	16.2		NE			3		2					D. clouds	John Merrifield.
*Roche's Point	30.11	764.8	30.21	767.3	52	11.1		NNE			3		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.94	760.5	30.11	764.8	53	11.7		N			4		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.13	765.3	43.3	6.3		NNW	30	13.4			8					Showery	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.71	754.6	29.78	756.4	57.0	13.9		NE			2		10					Drizzling	Serg't W. H. Lyne.
Sheffield	29.81	757.2	30.09	764.3	57.6	14.2		NE			1		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.04	763.0	30.07	763.8	58.9	14.9	56	W			1		10			0	0	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.09	764.3	55.0	12.8		W	9	4.0			7					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.83	757.7	30.05	763.3	63.5	17.5		NE			3		4					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.06	763.5	30.09	764.3	59	15.0		N			6		5					D. clouds	W. Newcombe.
Valencia (Observatory)	30.20	767.1	30.23	767.8	53.8	12.1		N	22	9.8			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.03	762.7	30.07	763.8	91.3	32.9	23	W	4.4	2.0		0	0			0	0	Clear.	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.94	760.5	50.0	10.0	70	W			2		7k			0.70	17.8	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.13	765.3	54.5	12.5		E			3		5k			0	0	Fair	Andrew Gibb.
Mauritius (Observatory)	29.84	757.9	30.03	762.8	76.0	24.4	71	SE	8.0	3.6		8	2			0	0	Overcast	C. Meldrum.
Melbourne (Observatory)	30.05	763.3	30.14	765.5	51.7	10.9	78	N	7	3.1			5			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.23	767.8	47	8.3		NNE			4	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.93	760.2				NW			7	5	7	N		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Direction from—		
H. M. S. Alert				Capt. J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Sommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 08′, W. 14° 31′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5	29.96	761.0	68.9	20.5	77	NE			1	6c				0	0	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.70	754.4	29.75	755.6	54.7	12.6	45	NNW			4		7						
Fanöe	29.86	758.5	29.88	759.0	51.6	10.9	65	NW			6		5						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.11	764.9	30.16	766.0	41.0	5.0	75	E			4		3						
Thorshavn (Faröe)	30.13	765.4	30.17	766.3	37 0	2.8	70	N			3		10						
Vestervig	29.75	755.6	29.84	758.0	48.6	9.2	67	NW			6		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.34	745.2	29.89	759.2	57.2	14	73	NE			4		8n		N	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	29.80	757.0	29.91	759.8	56.8	13.8	84	N			1		5		N	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.65	753.1	29.91	759.7	53.2	11.8	78	NE			2	c	10k		E	0	0		Klein, Commandant.
Avignon, Normal School	29.58	751.4	29.66	753 4	57.7	14.3	89	E			1		10		SE	0.807	20.5	Raining	Giraud, Director.
Bar-sur-Seine	29.17	740.9	29.71	754.6	65.3	18.5	49	E			2		8kn		E	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.62	752.4	29.80	759.2	54.9	12.7	71	NNE			2		10		N	0	0	Covered	Frère Eugene Marie.
Besançon, Normal School	28.81	731.7	29.66	753.3	68.2	20.1	44	NE			4		2		N	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.47	748.4	29.66	753.4	63.5	17.5	57	NE			2		5		NNE	0	0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.78	730.9	29.65	753.2	71.6	22	48	N			1		5kn	N	N	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.19	741.4	29.73	755.2	57.2	14	84	NE			3		5kn		NE	0.205	5.2	Raining	M. Gence, Director.
Brest, Naval Observatory	29.77	756.1	30.01	762.2	49.3	9.6	79	NE			3		10		NE	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.79	756.6	29.86	758.4	53.6	12	76	NE			3		10			0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.22	742.1	29.63	752.6	53.6	12	98	E			1		10		E	0	0	Covered	September, Director.
Châlons-sur-Marne, N. Sch'	29.63	752.5	29.95	760.6	52.3	11.3	69	NW			3		2		NE	Inap.	Inap.	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.33	744.9	29.89	759.3	57.2	14	86	NE			2		3		SW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.32	719.3	29.64	752.8	61.7	16.5	66	N			1		10		NE	0.047	1.2		Alluard, Director.
Commercy, Normal School	28.91	734.2	29.74	755.4	64.8	18.2	42	NE			4		kn	NE	NE	0.193	4.9		Dr. Coullet, Director.
Commune de Gréasque*	28.59	726.3	29.74	755.3	55.9	13.3	88	SE			3		10		SE	0.20	5.		L. Kina, Director.
Grenoble, Normal School	28.89	733.7	29.63	752.5	66.6	19.2	77	NE			1		ck			0.020	0.5		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.61	752.1	29.82	757.4	59.4	15.2	62	N			4		5		E	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.54	750.2	29.84	757.9	59.0	15	55	NE			3		8	SSE	NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.73	729.6	29.57	751.0	73.2	22.9	63	NW			1		5k		SE			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.85	758.1	29.96	760.9	54.3	12.4	61	N			3		8	N	NE	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.03	737.3	29.62	752.4	68.7	20.4	45	N			1		5ck		NNE	0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.41	746.9	29.67	753.7	59.9	15.5	77	SSE			2		10		SSE	0.431	10.95	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.68	728.4	29.68	753.5	64.2	17.9	49	NNE			3		kn		NNE	0	0		Barbier, Director.
Mont-Louis	24.47	621.5	29.71	754.5	37.8	3.2	84	WNW	3.8	1.7			10			0.858	21.8		M. Cave, for Dr. Fines.
Nice	29.72	754.9	29.75	755.7	65.5	18.6	77	E			2		5	E	E	0	0	Cloudy	Capt. Boissière, Director.
Nismes, Normal School	29.44	747.7	29.64	752.8	55.6	13.1	82	NW			3		5		N	0.16	4.	Cloudy	M. Boyer, Director.
Perpignan	29.50	749.3	29.61	752.0	58.5	14.7	65	NW	13.0	5.8			8	SW	N	0.583	14.8		Dr. Fines.
Pic du Midi (Plantade) H. P	22.18	563.4			30.2	— 1.0							10		NE	2.169	55.1	Threatening	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.65	727.8	29.71	754.7	54.3	12.4	72	S			6		10	S	S	0.181	4.6	Thunder-storm	M. Tallieu
Puy de Dome (Summit) Ob	24.85	631.2			42.1	5.6	100	NE			4		10			0.134	3.4	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.80	757.0	29.84	757.8	67.1	19.5	52	ENE			2		2	ENE	ENE	0	0	¾ covered	Lt E. Decante, Director
Rouen, Normal School	29.81	757.2	29.90	759.4	55.8	13.2	70	ENE			1		10		N	0	0	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.90	759.4	29.93	760.1	48.6	9.2	96	NNE			4		8	NNE	NNE			Raining	Lt. Hercouet, Director
Saint Maur (near Paris)	29.67	753.5	29.83	757.7	59.0	15.0	71	NE			2		10		NE	0.016	0.4	Covered	E. Renou, Director.
Tarbes, Normal School	28.55	725.1	29.61	752.1	55.4	13	100	W											T. Huguet, Director
Toulouse, Observatory	28.97	735.8	29.68	753.9	55.6	13.1	90	SE			2		10			0.110	2.8	Raining	B. Baillard, Dir.
Tours	29.63	752.5	29.82	757.5	60.8	16.0	61	ENE			2		10		ENE	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.35	745.5	29.84	758.0	54.0	12.2	78	NE			3		10			0	0	Covered	Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	30.01	736.8	29.70	754.3	68.9	20.5	55	NNW			1		5			0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.18	766.5	30.21	767.2	75.9	24.4										0.24	6.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.56	750.8			56.8	13.8	71	NNE			2		10			Inap.	Inap		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.97	761.1	29.99	761.7	57.2	14.0	88	N	2.7	1.2			0			0.772	19.6	Clear	Marc Dechevreus, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,264.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,082.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 183 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.93	34.9	29.79	756.6	58.5	14.7	67	NE			6		8n	NE		0.043	1.1		Prof. Dr. Hoh.
Berlin	29.60	751.9	29.77	756.2	64.0	17.8	57	N			1		8			0	0		Prof. Dr. Arndt.
Breslau	29.19	741.3	29.71	754.6	63.5	17.5	73	SE			1		9			0.028	0.72	Raining	Royal University Obs'y
Carlsruhe	29.34	745.1	29.75	755.7	61.5	16.4	79	NE			1		9	N		0.039	1.0		Albert Senz.
Cassel	29.20	741.6	29.80	756.9	60.4	15.8	58	N			4		7	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.51	749.5	29.87	758.8	63.1	17.3	52	NNE			2		10			0.016	0.4		Physical Society.
Friedrichshafen	28.29	718.5	29.68	753.8	63.7	17.6	47	NE			5		3	NE		0.209	5.3		Chief Telegrapher Wilhelm.
Hamburg	29.76	756 0	29.84	757.8	59.0	15.0	58	NW			3		5			0	0		Dr. Reinhold Kleeman.
Kiel	29.81	757.2	29.83	757.6	56.3	13.5	71	N			2		5			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.60	751.8	29.68	753.8	62.2	16.8	85	S			2		10	S		0.201	5.1		Prof. E. Luther.
Köslin			29.71	754.6	59.9	15.5		N			2		3			0.028	0.7		H. Müller.
Leipsic Observatory	29.36	745.7	29.77	756.2	60.4	15.8	59	N			1		9	NNE		0.169	4.3		Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29 57	751.1	29.80	756.8	63.3	17.4	60	NW			4		7ks	WNW		0	0		Dr. Assmann.
Memel	29.62	752.4	29.67	753.6	55.6	13.1	89	NNW			1–2		10ks					Showery	Reinbrecht & Issermann.
Munich	27.93	709.5	29.78	756.4	59.2	15.1	65	NW			3		7	NW		0.031	0.8		Dr. C. Lang.
Neufahrwasser	29.68	753.8	29.69	754.2	54.3	12.4	82	N			2		10			0.008	0.2		A. Lothes.
Neustadt (Palatinate)																			Reallehrer Dicknether.
Posen	29.42	747.3	29.71	754.5	56.1	13.4	100	N			2		10			0.610	15.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.21	742.0	29.74	755.5	65.7	18.7	57	ENE			1		3	E		0	0		Imp. University Observatory.
Stuttgart	28.82	732.1	29.70	754.4	58.1	14.5	73	NE					9	E		0.024	0.6	Raining	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.29	718.5	29.85	758.3	54.0	12.2	94	NE	1.1	0.5			10		NE	0.446	11.3	Raining	Reallehrer J. Hopfner.
Wustrow	29.78	756.4	29.80	757.0	54.1	12.3	67	NW			4		4s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.39	746.6	29.78	756.3	77.2	25.1		S			2.0		5k					½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.66	753.4	29.72	754.8	83.6	28.7	80	SW	25	11.2			7		SW	0	0	Squally	
Deesa	29.22	742.0	29.67	753.6	100.1	37.8	22	SW	16.6	7.4			2	SSW		0	0	D. clouds	
Bombay	29.80	756.8	29.84	757.8	85.6	29.8	74	NW	16	7.2			3	WNW		0	0	D. clouds	
Poona (Yarrowda)	27.97	710.5	29.80	756.8	86.8	30.4	24	WNW	24	10.7						0	0	Blue sky	
Belgaum	27.30	693.4	29.79	756.7	84.5	29.2	26	WNW	10	4.5			0			0	0	Misty	
Lahore	28.86	733.1	29.57	751.1	99.2	37.3	31	E	8.5	3.8			0			0	0	Misty	
Roorkee	28.82	731.9	29.69	754.2	89.8	32.1	39	NW	9	4.0			1			0	0		
Agra	29.11	739.5	29.66	753.2	98.6	37.0	23	E	9.6	4.3			0			0	0		
Nagpur	28.61	726.6	29.60	751.8	103.5	39.7	12	NW	7.1	3.2			1			0	0	Blue sky	
Jubbulpore	28.30	718.9	29.61	752.0	100.9	38.3	14	N	5.0	2.2			7			0	0	Overcast	
Lucknow	29.29	741.4	29.66	753.3	85.6	29.8	58	ENE	6.3	2.8			0			0	0	Blue sky	
Allahabad	29.39	746.6	29.70	754.3	91.2	32.9	41	ENE	5.5	2.5			0			0	0	Blue sky	
Patna	29.56	750.7	29.74	755.3	85.8	29.9	53	E	2.1	0.9			0			0	0	Blue sky	
Hazaribagh	27.71	703.9	29.70	754.4	81.8	27.7	46	ENE	9.1	4.1			0			0	0	Blue sky	
Cuttack	29.67	753.6	29.75	755.7	77.3	25.2	77	WSW	7.7	3.4			10			0.65	16.5	Thunder-storm	
Calcutta (Alipore)	29.74	755.3	29.76	755.8	80.2	26.8	77	SE	6.0	2.7			10	SE		0	0	Overcast	
Goalpara	29.38	746.2	29.79	756.6	75.7	24.3	71	SSE	10.5	4.7			2			0	0	D. clouds	
Chittagong	29.74	755.3	29.83	757.6	73.8	23.2	85	NE	6.5	2.9			8			0	0	Gloomy	
Sibsagar	29.48	748.7	29.82	757.4	72.2	22.3	95	NW	1.5	0.7			10	W	W	0.07	1.8	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.38	746.3	29.79	756.6	66.7	19.3	70	SE	4.3	1.9			5			0.138	3.5		Prof. Giovanni Clodig.
Milan	29.24	742.8	29.75	755.7	65.7	18.7	56	SW	4.9	2.2			10	W		0.201	5.1		Prof. Schiaparelli.
Padua	29.66	753.3	29.76	756.0	67.6	19.8	64	SE	4.9	2.2			9	S		0.186	4.7		Prof. Dott. Lorenzoni.
Moncalieri	28.86	733.0	29.76	755.9	55.4	13.0	77	N	3.8	1.7			9			0.677	17.2		Prof. P. F. Denza.
Genoa	29.59	751.6	29.78	756.4	59.2	15.1	84	SE	6.3	2.8			10	SE		0.197	5.0		Prof. G. M. Garibaldi.
Mondovi	27.86	707.5	29.76	755.8	56.5	13.6	81	NE			2		10			0.150	3.8		Prof. D. C. Bruno.
Pesaro	29.73	755.1	29.77	756 2	64.6	18.1	81	E	13.0	5.8			7	SSW		0	0		Prof. Luigi Guidi.
Florence	29.52	749.7	29.77	756.1	71.6	22.0	53	E			2		10			0	0		Cav. F. Meucci.
Leghorn	29.69	754.1	29.77	756.2	66.6	19.2	72	SSW	2.5	1.1			10	W		0.004	0.1		Prof. P. Monte.
Rome	29.61	752.1	29.78	756.5	74.7	23.7	45	SSW	11.2	5.0			9			0	0		Prof. P. S. Ferrari.
Lecce	29.60	751.9	29.85	758.2	74.8	23.8	29	WNW	0	0			0			0	0		Prof. C. De Giorgi
Cosenza	28.96	735.6	29.84	757.8	75.2	24.0	75	NW	1.8	0.8			1			0	0		Prof. D. Conti.
Cagliari	29.46	748.3	29.65	753.1	69.3	20.7	67	S			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.49	749.1	29.74	755.4	73.6	23.1	40	ENE	10.5	4.7			4			0	0		Prof. G. Cincciatore.
Syracuse	29.77	756.2	29.82	757.3	68.9	20.5	65	ESE	3.8	1.7			10	WSW		0	0		Prof. V.G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.26	743.1	29.76	756.0	74.5	23.6	42	SW	0.7	0.3			0			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					64.0	12.2	92	NNE	3.4	1.5			10s			1.045	26.54	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.58	751.3	29.78	756.4	67.1	13.9	88	NE	4.0	1.8			1s			0.700	17.78	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.62	752.3	29.69	754.1	64.4	18.0	93	S	16.1	7.2		0	10s			2.330	59.18	Cloudy	The Staff.
Wakayama	29.67	753.6	29.72	754.9	53.8	12.1	98	NW	17.3	7.7			10n			1.340	34.03	Rainy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.06	636.9	30.17	766.2	50.9	10.5	40	Calm			0	2c	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.60	601.9			60.8	16.0	60	Calm	0	0		3s	s	W		0	0	Squally	Vicente Fernandez.
Leon	24.44	620.7	30.06	763.5	64.0	17.8	71	N			1	1c	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.76	755.9	30.02	762.5	68.0	20.0	97	NE			1	9ck	0	SW		0	0	Very cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.10	586.7	30.06	763.6	56.5	13.6	68	Calm	0	0		3c	0			0	0	Hazy	The Staff
Morelia	24.03†	610.3†			66.0	18.9	52	SW			4	4c	8k	E	S	0	0	Covered	M. Fena, M. D.
Pabellon (Aguascalientes)	23.99	609.3	29.97	761.1	59.2	15.1	55	SW			1	1s	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.6	30.24	768.2	51.8	11.0	49	Calm	0	0		1c	0	N		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.28	616.7	30.19	766.7	63.7	17.6	49	SE			1	1	3	W	E	0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.89	759.1	29.90	759.4	79.7	26.5	78	Calm			0	1	0	S		0	0	Clear	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.0 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	29.97	761.2	29.97	761.2	53.2	11.8		NNE			4					0	0		
Groningen	29.89	759.2	29.95	760.6	51.1	10.6		N								0	0		
Helder	29.98	761.4	29.98	761.4	48 7	9.3		N			4					0.016	0.4		
Hellevoetsluis	29.95	760.8	29.95	760.8	51.8	11.0	73	NE			2					0	0		
Utrecht	29.92	759.9	29.97	761.1	51.4	10.8	71	NNE			3		8			0	0	Very cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.75	755.7	29.81	757.1	41.4	5.2	72	NNW	7.8	3.5			3			0.063	1.6	Sleeting	
Brönno	29.51	749.5	29.55	750.5	41.7	5.4	78	NW	9	4			8			0.232	5.9		
Christiania	29.44	747.7	29.58	751.3	58.1	14.5	20	W	9	4			5			0	0		
Tromsö	29.43	747.5	29.48	748.9	42.4	5.8	67	NE	9	4			5			0.165	4.2		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.22	756.7	30.43	772.9	62.2	16.8	65	NE			2		2			0	0		Dr. J. A. Sampaio.
Campo Major	28.78	730.9	29.78	756.3	56.1	13.4	66	WNW	10.5	4.7			10			0.039	1.0		Dr. A. M. R. dos Santos
Funchal (Madeira)	30.08	764.0	30.17	766.2	64.9	18.3	57	SE	6.9	3.1			3			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.52	749.7	29.87	758.8	60.3	15.7	57	NNW	16.1	7.2			7	NNW		0.043	1.1		The Staff.
Ponta Delgada (Azores)	30.32	770.1	30.39	771.9	63.3	17.4	49	NE	3.1	1.4			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. S. Nicolam, Benguela			29.94	760.4	75.6	24.2		WSW			2		2		WSW	2	WSW		D clouds	C. J. de Sousa Barcellos, Q. M.
Rio Duro																				J.T.d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.35	770.9	75.6	24.2		NNE			2		2		NNE	1	ENE		D. clouds	Antonio Sarmento, Q.M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.95	760.5	76.1	24.5		NW			3		7			1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.02	762.4	82.2	27.9		SW			2		10		SW	1		2	Overcast	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.79	756.7	29.81	757.2	41.2	5.1	71	SE	4	2			8ks						Capt. Sselliwerstow.
Astrakhan	30.11	764.8	30.03	762.7	61.2	16.2	31	ESE	16	7			10s						Capt. Wisganow.
Barnaul	29.24	742.7	29.74	755.4	44.6	7.0	51	Calm	0	0			6						Meteorological Obs.
Dorpat	29.44	747.8	29.68	753.9	55.4	13.0	94	SW	7	3			10n					Light rain	Prof. Dr. Weihrauch.
Ekaterinburg	28.63	727.3	29.59	751.6	46.2	7.9	45	WNW	18	8			8k;ks;n						Meteorological Obs.
Irkutsk																			
Kasan	29.61	752.2	29.87	758.8	64.2	17.9	32	W	7	3			3						Physical Cabinet.
Kertch	29.83	757.7	29.85	758.2	54.0	12.2	84	ENE	13	6			5						Lagorio.
Kieff	29.31	744.4	29.93	760.2	63.5	17.5	36	SE	9	4		3ck							Physical Cabinet.
Krotkowo*	29.52	749.9	29.98	761.6	64.0	17.8	33	NW	7	3			9						Cand. Fatjanow.
Lugan	29.84	757.9	30.04	763.0	64.4	18.0	41	ESE	13	6			4						Meteorological Obs.
Moscow	29.45	747.9	29.98	761.5	62.4	16.9	47	S	10.1	4.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.89	759.1	29.96	760.9	68.0	20.0	31	ENE	18	8			4k						Kurdakof.
Nikolaievsk, on the Amoor	29.45	748.1	29.54	750.3	32.0	0	96	Calm	0	0			10n					Snowing	
Nukuss	29.65	753.0	29.88	758.9	56.7	13.7	69	NNE	13	6			10kn						
Orenburg																			
Pekin (China)	29.72	755.0	29.87	758.6	59.4	15.2	36	S	7	3			1k						Physical Observatory.
St. Petersburg	29.67	753.6	29.69	754.0	56.8	13.8	81	SSE	20	9			10n					Light rain	Central Physical Obs.
Tashkend	28.21	716.5	29.61	752.1	79.5	26.4	56	Calm	0	0			3			Blank	Blank		Teich, A. M.
Tiflis	28.43	722.2	29.85	758.1	52.9	11.6	91	Calm	0	0			10					Raining	Physical Observatory.
Vladivostock																			
Warsaw	29.27	743.4	29.67	753.7	69.3	20.7	63	SSW	11	5			9ks						Astronomical Obs.
Wilna	29.34	745.1	29.74	755.4	68.9	20.5	39	S	16	7			1					Light clouds	Astronomical Obs.
Yeniseisk	29.42	747.2	29.71	754.6	39.4	4.1	85	S	2	1			10					Rain & snow	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.56	750.8	29.67	753.5	63.1	17.3	59	S	2.9	1.31			2k			0.105	2.67		Antonio Rave, Director
Bilbao, Met. Obs'y	29.80	757.0	29.90	759.5	54.5	12.5	86	NW	3.6	1.63			10			0.031	0.8	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.81	680.9			49.8	9.9	75	N	5.4	2.43			9			0.138	3.5	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.47	697.7	29.71	754.7	52.2	11.2	79	NE	3.0	1.33		0	10			1.012	25.7	Raining	The Staff.
Murcia, Met. Obs'y	29.51	749.5	29.65	753.2	75.0	23.9	52	S	2.2	0.97		4	4	NE		0.197	5.00	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.03	737.3	29.93	760.2	51.8	11.0	74	NNE	18.6	8.3			10			0.244	6.2	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	761.0	30.03	762.6	77.6	25.3	81	SE	5.4	2.4		4c;ck	1k	W		2.362	60.0	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.85	758.3	29.91	759.6	84.5	29.2	79	ENE	4.4	2.0			8kn		E	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.70	754.3	29.79	756.8	60.3	15.7	71	WNW	4.5	2.0		3	6	NW	W	0.400	10.2		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.04	763.0	30.13	765.3	78.4	25.8	84	SE	0	0		0	3k		SE	0.020	0.50	Clear	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.43	747.6	29.47	748.6	37.4	3.0	.....	SW	.....	.....	2	.....	10	.....	.....	0.157	4.0	.....	
Umea	29.47	748.4	29.52	749.7	51.8	11.0	68	NW	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	
Hernosand	29.47	748.6	29.52	749.9	54.3	12.4	48	WNW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Stockholm	29.41	747.1	29.59	751.6	64.8	18.2	40	SW	.....	.....	2	.....	4	.....	.....	0	0	.....	
Wisby	29.57	751.1	29.63	752.6	57.6	14.2	67	W	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.41	747.1	29.50	749.3	64.4	18.0	39	SW	15.2	6.8	.....	.....	4	.....	WSW	0	0	.....	Nils Ekholm.

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

Swedish Naval Series.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	0–10.	0–10.	From—	From—	Sea or swell: Height scale 0-9	Sea or swell: Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 48° 48′, W. 17° 14′	.....	.....	30.30	769.6	54.0	12.2	74	NE	.....	.....	4	.....	10	.....	.....	.....	.....	.....	Overcast	J. P. Pahlson.
H. M. Corvette Balder, N. 55° 59′, E. 12° 12′	.....	.....	29.71	754.6	49.6	9.8	76	W	.....	.....	3	.....	0	.....	.....	.....	.....	.....	Blue sky	Capt. A. C. Schonmeyr.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Geneva	28.26	717.7	29.66	753.4	61.0	16.1	62	NE	.....	.....	1	.....	9	.....	.....	0.244	6.2	Covered	The Observatory.
Zurich	28.08	713.3	29.68	753.9	66.2	19.0	54	NE	.....	.....	4	.....	3	.....	.....	0.063	1.6	Partly cl'dy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.7 mm.; Thermometer, +1.0 Cent Relative Humidity, +4 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.82	757.4	47.1	8.4	74	N	17	7.5	.....	.....	10	.....	N	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.92	759.9	76.5	24.7	.....	NW	.....	.....	1	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.76	756.0	73.0	22.8	63	SW	.....	.....	3	.....	2s	.....	SW	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	36.8	2.7	.....	NE	1	0.4	.....	.....	10n	.....	.....	0.06	1.5	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.68	753.9	29.74	755.4	37.7	3.2	95	N	3	1.3	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.73	755.1	29.78	756.4	46.3	7.9	99	S	6	2.7	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain	H. J. Cundall, C. E
Cornwall, Ontario	29.42	747.3	29.61	752.1	49.2	9.6	70	W	.....	.....	3	0	2s	.....	.....	0	0	Clear	James Smith, M. A
Dalhousie, N. B.	29.59	751.6	29.76	755.9	34.0	1.1	.....	E	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.67	753.6	29.69	754.1	36.0	2.2	90	NE	30	13.4	.....	.....	10n	.....	.....	0.06	1.5	Threatening	J. McWilliams.
Fredericton, N. B.	29.61	752.2	29.66	753.4	51.1	10.6	92	NE	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.69	728.7	29.50	749.3	52.0	11.1	86	E	26	11.6	.....	5k	5ks	SW	.....	0.330	8.38	Cloudy.	James Stewart.
Granton, Ontario	28.85	732.8	29.96	761.0	46.0	7.8	84	NW	.....	.....	2	1c	0	NW	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.50	749.3	29.63	752.6	49.0	9.4	97	E	20	8.9	.....	.....	10n	.....	.....	0.511	12.98	Heavy rain	A. Allison.
Hamilton, Ontario	29.61	752.1	29.98	761.5	54.9	12.7	72	N	.....	.....	1	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.46	748.3	29.79	756.7	54.5	12.5	85	W	7	3.1	.....	2k	0	Calm	.....	0.03	0.8	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.87	758.7	29.92	760.0	40.8	4.9	95	S	3	1.3	.....	.....	10n	.....	.....	.....	.....	Raining	C. H. Rigby.
Montreal, Quebec	29.35	745.5	29.54	750.3	57.0	13.9	81	W	10	4.5	.....	.....	10ks	.....	.....	0	0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	30.17	766.3	30.20	767.1	25.8	— 3.4	90	N	.....	.....	3	0	0	.....	.....	0.20	5.1	Clear	J. R. Nason.
Norwood, Ontario	29.06	738.1	29.76	755.9	45.0	7.2	61	NW	12	5.4	.....	3k	0	N	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.25	742.9	29.96	761.0	38.0	3.3	68	NW	16	7.2	.....	0	0	.....	.....	0.04	1.0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.08	738.6	29.83	757.7	45.7	7.6	68	W	.....	.....	3	2k	0	.....	.....	0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.23	742.4	29.92	760.0	54.1	12.3	93	NW	5	2.2	.....	10c	0	NW	.....	Inap.	Inap.	Fair	H. Morgan.
Port Stanley, Ontario	29.30	744.2	29.94	760.5	53.1	11.7	67	NW	12	5.4	.....	Haze	0	.....	.....	0	0	Hazy	M. Payne.
Quebec, Quebec	29.29	744.0	29.62	752.3	37.0	2.8	100	NE	.....	.....	4	.....	10n	.....	.....	0.01	0.3	Heavy rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.39	746.5	29.86	758.4	36.0	2.2	70	NW	12	5.4	.....	.....	10s	.....	.....	0.10	2.5	Clear	W. H. McIntyre.
St. John, N. B.	29.42	747.3	29.59	751.6	49.0	9.4	100	NE	10	4.5	.....	.....	10n	.....	.....	0.480	12.19	Raining	G. Murdock, C. E.
Saugeen, Ontario	29.25	742.9	29.98	761.5	41.0	5.0	65	N	15	6.7	.....	7cs	0	.....	.....	0	0	Fair	K. Stewart.
Stratford, Ontario	28.65	727.7	29.94	760.5	43.9	6.6	88	NW	10	4.5	.....	2cs	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.90	759.4	29.94	760.5	42.5	5.8	96	S	2	0.9	.....	.....	10n	.....	.....	.....	.....	Light rain	T. C. Hill, C. E.
Toronto, Ontario	29.53	750.0	29.92	760.0	45.6	7.6	63	NW	19	8.5	.....	0	0	.....	.....	0	0	Clear.	Magnetic Observatory
Windsor, N. S.	28.86	733.0	29.92	760.0	52.3	11.3	66	W	11	4.9	.....	6c	0	W	.....	0	0	Fair	Prof. John E. Oram, M. A
Woodstock, Ontario	29.40	746.7	29.46	748.3	52.4	11.3	96	E	6	2.7	.....	.....	Fog	.....	.....	1.87	47.5	Rain & fog	Professor Wolverton.
Yarmouth, N. S.																			Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.00	762.0	30.26	768.6	35	1.7	90	S	.....	.....	.....	10	.....	.....	.....	0	0	.....	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	29.96	761.0	41.0	5.0	.....	SW	.....	.....	2	.....	.....	.....	.....	1.20	30.5	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.62	752.3	29.69	754.1	65	18.3	68	SW	4	1.8		0	5s		W	0	0	Fair	
Alpena, Michigan	29.38	746.2	30.04	763.0	39	3.9	73	W	7	3.1			8s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.89	733.8	30.01	762.2	65	18.3	73	W	7	3.1		0	0			0	0	Clear	
Atlantic City, New Jersey	29.81	757.2	29.82	757.4	64	17.8	83	SW	10	4.5		0	Haze		Calm	0	0	Clear	
Augusta, Georgia	29.91	759.7	30.11	764.8	64	17.8	83	NW	1	0.4		0	Fog		Calm	0	0	Clear	
Baltimore, Maryland	29.82	757.4	29.87	758.7	69	20.6	56	NW	9	4.0		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	29.76	755.9	29.78	756.4	67	19.4	69	W	14	6.3		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.66	702.6	29.51	749.5	55	12.8	68	NW	25	11.2		2c	0	SW		0	0	Fair	
Boerne, Texas	28.48	723.4	29.76	755.9	65	18.3	94	S	6	2.7		0	5ks		S	0	0	Fair	
Boise City, Idaho	27.31	693.7	30.27	768.8	36	2.2	80	N	1	0.4			10s		W	0.05	1.3	Cloudy	
Boston, Massachusetts	29.55	750.6	29.70	754.4	60	15.6	65	W	1	0.4		5c	0	Calm		0	0	Fair	
Brackettville, Texas	28.76	730.5	29.79	756.7	66	18.9	95	E	10	4.5			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.39	721.1	29.31	744.5	65	18.3	73	SE	34	15.2		0	0			Inap.	Inap.	Clear	
Brownsville, Texas	29.86	758.4	29.91	759.7	73	22.8	81	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.18	741.1	29.87	758.7	49	9.4	78	SW	6	2.7		5c	Haze	NW	Calm	0	0	Fair	
Burkes, Arizona					60	15.6	49	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.28	743.7	29.56	750.8	61	16.1	71	SW	11	4.9		8cs	0	W		0.03	0.8	Fair	
Cairo, Illinois	29.64	752.8	30.02	762.5	70	21.1	70	S	4	1.8		0	Haze			0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	31	−0.6	89	W	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.03	762.7	30.04	763.0	66	18.9	89	E	9	4.0		0	Haze			Inap.	Inap.	Clear	
Cape Henry, Virginia	29.92	760.0	29.93	760.2	64	17.8	73	SW	15	6.7		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.03	762.7	30.05	763.3	66	18.9	95	W	6	2.7		2c	Haze	Calm	Calm	0.05	1.3	Fair	
Cape May, New Jersey	29.80	756.9	29.83	757.7	61	16.1	76	SW	20	8.9		0	0			0.02	0.5	Clear	
Castroville, Texas	29.16	740.7	29.84	757.9	70	21.1	80	S	4	1.8			10ks		S	0	0	Cloudy	
Cedar Keys, Florida	30.06	763.5	30.08	764.0	72	22.2	85	W	3	1.3		5cs	0	Calm		0	0	Fair	
Charleston, South Carolina	30.01	762.2	30.07	763.8	70	21.1	75	NW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.18	741.1	29.98	761.5	66	18.9	74	SW	4	1.8		0	Sm'e		Calm	0	0	Clear	
Chattanooga, Tennessee	29.26	743.2	30.05	763.3	62	16.7	83	Calm	0	0		0	Sm'e		Calm	Inap.	Inap.	Clear	
Cheyenne, Wyoming	23.80	604.5	29.74	755.4	41	5.0	19	NW	24	10.7		0	0			0	0	Clear	
Chicago, Illinois	29.20	741.7	29.86	758.4	64	17.8	68	SE	8	1.3		Haze	Haze	Calm	Calm	0	0	Hazy	
Chincoteague, Virginia	29.89	759.2	29.91	759.7	61	16.1	96	SW	19	8.5		0	0			0.01	0.3	Clear	
Cincinnati, Ohio	29.39	746.5	30.04	763.0	64	17.8	73	S	2	0.9		5cs	Haze	Calm	Calm	0	0	Fair	
Cleveland, Ohio	29.25	742.9	29.96	761.0	57.5	14.2	63	NW	4	1.8		10cs	0	NW		0	0	Fair	
Coleman City, Texas	28.13	714.5	29.75	755.6	64	17.8	78	S	4	1.8		0	0			0	0	Clear	
Columbus, Ohio	29.14	740.1	29.96	761.0	63	17.2	67	W	1	0.4		2c	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	28.00	711.2	29.62	752.3	66	18.9	79	S	9	4.0		0	0			0	0	Clear	
Corsicana, Texas	29.52	749.8	29.97	761.2	66	18.9	84	S	8	3.6		0	0			0	0	Clear	
Davenport, Iowa	29.17	740.9	29.78	756.4	67	19.4	69	S	9	4.0		5cs	0	Calm		0	0	Fair	
Dayton, Washington T'y					37	2.8	53	SW			2	5c	0	Calm		0.09	2.3	Fair	
Deadwood, Dakota	25.13	638.3			44	6.7	68	Calm	0	0		0	5s		W	0.05	1.3	Fair	
Decatur, Texas	28.76	730.5	29.89	759.2	70	21.1	61	SW	4	1.8		0	0			0	0	Clear	
Delaware Breakwater, Del	29.83	757.7	29.85	758.2	64	17.8	78	SW	24	10.7		Haze	0			0.07	1.8	Clear	
Denison, Texas	29.13	739.9	29.89	759.2	70	21.1	85	S	6	2.7		0	0			0	0	Clear	
Denver, Colorado	24.60	622.3	29.72	754.9	51	10.6	28	NE	6	2.7		0	0			0	0	Clear	
Des Moines, Iowa	28.77	730.7	29.59	751.6	72	22.2	67	SW	7	3.1		2c	0	NW		0	0	Clear	
Detroit, Michigan	29.29	744.0	29.95	760.7	53	11.7	67	E	8	3.6		5ck	2s	E	Calm	0	0	Fair	
Dodge City, Kansas	27.05	687.1	29.20	741.7	66	18.9	69	S	12	5.4		5c	0	S		0	0	Fair	
Dubuque, Iowa	29.08	738.6	29.74	755.4	69	20.6	65	SE	7	3.1		5k;Hz	Haze	S;Calm	Calm	0.01	0.3	Fair	
Duluth, Minnesota	29.12	739.6	29.80	756.9	38	3.3	91	NE	21	9.4			10n		NE	0.50	12.7	Thunder-storm	
Eagle Pass, Texas	29.25	742.9	29.96	761.0	73	22.8	81	SE	6	2.7			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.47	748.5	29.53	750.0	46	7.8	100	NE	20	8.9			10n;fog		NE	0.21	5.3	Light rain	
Edinburg, Texas					74	23.3	90	Calm			0	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.24	742.7	29.94	760.5	57	13.9	52	Calm	0	0		0	0			0	0	Clear	
Escanaba, Michigan	29.40	746.7	30.07	763.8	41	5.0	74	NW	4	1.8			10n		N	Inap.	Inap.	Light rain	
Florence, Arizona	28.37	720.6	29.97	761.2	64	17.8	63	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.93	633.2	30.38	771.6	44	6.7	52	NE	2	0.9		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.54	699.5	29.31	744.5	48	8.9	56	NW	18	8.0		1cs	0	NW		0.03	0.8	Clear	
Fort Custer, Montana	26.65	676.9			43	6.1	66	SW	5	2.2		0	2s		W	0.05	1.3	Fair	
Fort Davis, Texas	25.23	640.8	30.09	764.3	68	20.0	51	W	2	0.9		1cs	0	W		0	0	Clear	
Fort Elliot, Texas	26.76	679.7	28.89	733.8	64	17.8	78	S	10	4.5		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.36	745.7	29.87	758.7	71	21.7	71	SE	6	2.7		0	0			0	0	Clear	
Fort Grant, Arizona	25.14	638.5	29.94	760.5	59	15.0	15	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.61	726.7	29.83	757.7	66	18.9	89	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.04	686.8			45	7.2	60	SW	15	6.7		5k	0	SW		0.09	2.3	Fair	
Fort McKavett, Texas	27.65	702.3	29.51	749.5	64	17.8	79	S	7	3.1		4c	0	N		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.63	727.2	29.68	753.9	69	20.6	85	S	16	7.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.51	698.7			54	12.2	73	W	24	10.7		2c	0	W		0	0	Fair	
Fort Verde, Arizona					59	15.0	76	SE			4	0	Fog		Calm	0	0	Fair	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.15	715.5	29.73	755.1	46	7.8	69	S	4	1.8		0	5ks		Calm	0	0	Fair	
Galveston, Texas	29.93	760.2	29.97	761.2	73	22.8	81	SE	6	2.7		2ck	0	S		0	0	Clear	
Grand Haven, Michigan	29.26	743.2	29.89	759.2	60	15.6	88	E	4	1.8			10s		Calm	0	0	Cloudy	
Helena, Montana					36	2.2	61	S	8	3.6			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.19	741.4	29.94	760.5	67	19.4	69	S	3	1.3		8c	0	Calm		0	0	Fair	
Indianola, Texas	29.95	760.7	29.98	761.5	73	22.8	85	SE	6	2.7		0	0			0	0	Clear	
Jacksboro, Texas	28.78	731.0	29.88	758.9	70	21.1	75	S	6	2.7		0	0			0	0	Clear	
Jacksonville, Florida	30.05	763.3	30.07	763.8	67	19.4	79	E	1	0.4		0	0			0	0	Clear	
Keokuk, Iowa	29.16	740.7	29.74	755.4	73	22.8	59	SW	20	8.9		2cs	0	Calm		0	0	Clear	
Key West, Florida	30.02	762.5	30.05	763.3	79	26.1	78	SE	2	0.9		0	8ks		SE	0.03	0.8	Cloudy	
Kittyhawk, North Carolina	30.00	762.0	30.03	762.7	65	18.3	84	W	12	5.4		0	0			0.01	0.3	Clear	
Knoxville, Tennessee	29.08	738.6	30.06	763.5	62	16.7	83	Calm	0	0		0	0			0.02	0.5	Clear	
La Crosse, Wisconsin	28.97	735.8	29.87	758.6	67	19.4	69	S	12	5.4			10s			0.51	13.0	Cloudy	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	52	11.1	41	Calm	0	0		0	5s		Calm	0	0	Fair	
Laredo, Texas	29.46	748.3	29.79	756.7	71	21.7	71	SE	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	28.85	732.8	29.64	752.8	71	21.7	66	S	19	8.5		1cs	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.63	752.6	29.96	761.0	69	20.6	80	Calm	0	0		2k	0	NE		0	0	Fair	
Los Angeles, California	29.68	753.9	30.02	762.5	50	10.0	86	W	3	1.3			9s		W	0	0	Cloudy	
Louisville, Kentucky	29.45	748.0	29.99	761.7	64	17.8	68	SW	1	0.4		8c	Sm'e	Calm	Calm	Inap.	Inap.	Fair	
Lynchburg, Virginia	29.32	744.7	29.97	761.2	72	22.2	54	SW	1	0.4		0	Haze			0	0	Clear	
Madison, Wisconsin	28.85	732.8	29.79	756.7	63	17.2	78	SE	5	2.2		5c	6	W		0.10	2.5	Fair	
Marquette, Michigan	29.32	744.7	30.04	763.0	39	3.9	91	E	3	1.3			10n		Calm	Inap.	Inap.	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.27	718.0	29.98	761.5	66	18.9	84	SE	5	2.2		0	0			0	0	Clear	
Memphis, Tennessee	29.64	752.8	29.97	761.2	71	21.7	66	SE	7	3.1		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.17	740.9	29.90	759.4	45	7.2	92	N	9	4.0			Fog			0.16	4.1	Foggy	
Mobile, Alabama	30.01	762.2	30.05	763.3	67	19.4	95	S	3	1.3			Fog		Calm	0	0	Foggy	
Montgomery, Alabama	29.85	758.2	30.08	764.0	70	21.1	84	SE	2	0.9		0	Fog		Calm	0.03	0.8	Clear	
Morgantown, West Virginia	28.98	736.1	29.94	760.5	62	16.7	67	Calm	0	0		0	Haze			0	0	Clear	
Mt. Washington, N. H.	23.51	597.1	29.87	758.7	40	4.4	82	NW	36	16.1		8k	2ks	NW	NW	0	0	Fair	
Nashville, Tennessee	29.52	749.8	30.04	763.0	68	20.0	74	SW	1	0.4		1cs	Haze	Calm	Calm	0	0	Clear	
New Haven, Connecticut	29.60	751.8	29.72	754.9	66	18.9	69	SW	3	1.3		8ck	0	SW		0	0	Fair	
New London, Connecticut	29.66	753.4	29.71	754.6	62	16.7	72	SW	6	2.7		3ck	Haze	W	Calm	0	0	Fair	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	72	22.2	85	NE	7	3.1		Haze	Haze	Calm	Calm	0	0	Hazy	
Newport, Rhode Island	29.67	753.6	29.72	754.9	58	14.4	82	SW	6	2.7		10k	0	SW		0.11	2.8	Cloudy	
New River, North Carolina					70	21.1	84	SW			1	0	0					Clear	
New York, New York	29.60	751.8	29.77	756.1	60	15.6	82	NW	7	3.1		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	29.80	759.2	29.95	760.7	69	20.6	70	SW	7	3.1		0	Haze		Calm	0.01	0.3	Clear	
North Platte, Nebraska	26.73	678.9	29.17	740.9	59	15.0	28	NW	16	7.2		2c	0	W		0	0	Clear	
Olympia, Washington Ter.	30.17	766.3	30.21	767.3	42.0	5.6	91	SW	4	1.8			10s		SW	0.49	12.4	Cloudy	
Omaha, Nebraska	28.42	721.9	29.43	747.5	73	22.8	67	S	22	9.8		8c	2s	W	S	0	0	Cloudy	
Oswego, New York	29.47	748.5	29.79	756.7	46	9.4	71	W	14	6.3		0	0			0	0	Clear	
Pembina, Dakota	28.64	727.4	29.44	747.8	56	13.3	75	SE	24	10.7		0	5s		S	0.01	0.3	Fair	
Pensacola, Florida	30.03	762.7	30.06	763.5	68	20.0	84	Calm	0	0		1cs	0	W		Inap.	Inap.	Clear	
Philadelphia, Pennsylvania	29.76	755.9	29.82	757.4	61	16.1	82	W	6	2.7		0	Haze		Calm	0	0	Clear	
Phœnix, Arizona	28.65	727.7	30.40	772.1	65	18.3	44	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.60	447.0	29.81	757.2	21	— 6.1	29	SW	58	25.9		1cs	0	Calm		0	0	Clear	
Pilot Point, Texas	29.18	741.1	29.99	761.7	75	23.9	86	S	11	4.9		0	0			0	0	Clear	
Ploche, Nevada	24.00	609.6	29.77	756.1	32	0.0	30	N	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.14	740.1	29.92	760.0	61	16.1	61	NW	3	1.3		0	0			0	0	Clear	
Port Huron, Michigan	29.31	744.5	29.98	761.5	42	5.6	83	N	16	7.2			10s		NW	0	0	Cloudy	
Portland, Maine	29.58	751.3	29.63	752.6	58	14.4	70	NW	4	1.8			0			0	0	Clear	
Portland, Oregon	30.21	767.3	30.28	769.1	42	5.6	87	SW	2	0.9		Haze	9s	Calm	W	0.02	0.5	Cloudy	
Portsmouth, North Carolina					65	18.3	89	SW	11	4.9		2cs	0	Calm		0	0	Clear	
Prescott, Arizona	24.62	625.3	29.98	761.5	56	13.3	19	S	7	3.1		0	0			0	0	Clear	
Punta Rassa, Florida	30.07	763.8	30.08	764.0	71	21.7	80	W	13	5.8			10n		S	0.52	13.2	Light rain	
Red Bluff, California	29.85	758.2	30.22	767.6	44.0	6.7	76	NW	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas	29.72	754.9	29.93	760.2	72	22.2	85	SE	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.21	741.9	29.81	757.2	54	12.2	55	NW	20	8.9		0	0			0	0	Clear	
Roseburg, Oregon	29.75	755.6	30.35	770.9	34	1.1	95	Calm	0	0		1k	0	Calm		0.13	3.3	Clear	
Sacramento, California	30.12	765.0	30.19	766.8	52	11.1	60	N	10	4.5		0	0			0	0	Clear	
St. Louis, Missouri	29.35	745.5	29.91	759.7	68	20.0	70	S	12	5.4		5c	0	Calm		0	0	Fair	
St. Paul, Minnesota	28.73	729.7	29.51	749.5	66	18.9	79	SE	19	8.5		2ck	0	SW		0.47	11.9	Clear	
Salt Lake City, Utah	25.64	651.2	29.97	761.2	37	2.8	63	SE	2	0.9		5k	0	Calm		0.15	3.8	Fair	
San Antonio, Texas	29.27	743.4	29.95	760.7	69	20.6	90	S	3	1.3			10ks		S	0	0	Cloudy	
San Diego, California	29.96	761.0	30.03	762.7	48	8.9	85	E	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.30	744.2	29.95	760.7	61	16.1	66	SE	6	2.7		5c	Haze	W	Calm	0	0	Fair	
Sandy Hook, New Jersey	29.78	755.1	29.76	755.9	64	17.8	73	W	20	8.9		0	0			0	0	Clear	
San Francisco, California	30.18	766.6	30.25	768.3	49	9.4	67	N	10	4.5		0	0			0	0	Clear	
Santa Fé, New Mexico	28.18	588.8	29.73	755.1	49	9.4	31	E	5	2.2		0	0			0	0	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	72	22.2	76	Calm	0	0		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.76	755.9	29.98	761.5	71	21.7	85	S	2	0.9		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.04	763.0	30.07	763.8	68	20.0	90	Calm	0	0		0	0			0.17	4.3	Clear	
Socorro, New Mexico	25.29	642.4	29.36	745.7	59	15.0	23	SW	4	1.8		0	0			0	0	Clear	
Springfield, Illinois	29.26	743.2	29.91	759.7	65	18.3	73	S	8	3.6		5c	0	W		0	0	Fair	
Springfield, Massachusetts	29.57	751.1	29.70	754.4	56	13.3	87	Calm	0	0			Fog		Calm	0	0	Dense fog	
Stockton, Texas	26.83	681.5	29.83	757.7	67	19.4	84	SE	18	8.0		5cs	0	Calm		0	0	Fair	
Thatcher's Island, Mass.	29.59	751.6	29.64	752.8	57	13.9	94	NW	16	7.2		10ck	0	W		0	0	Cloudy	
Toledo, Ohio	29.26	743.2	29.92	760.0	64	17.8	68	Calm	0	0		2cs	Haze	SW	Calm	0	0	Hazy	
Tucson, Arizona	27.44	697.0	29.99	761.7	68	20.0	30	E	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.88	758.9	30.39	771.9	41	5.0	69	W	2	0.9		0	0			0	0	Clear	
Uvalde, Texas	28.90	736.1	29.77	756.1	68	20.0	90	SE	1	0.4		1k	0	S		0	0	Clear	
Vicksburg, Mississippi	29.78	756.4	30.04	763.0	66	18.9	84	SE	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.13	612.9	29.61	752.1	25	— 3.9	87	E	20	8.9			10n		Calm	0.29	5.8	Light snow	
Visalia, California	29.75	755.6	30.13	765.3	45	7.2	84	W	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.78	756.4	29.90	759.4	66	18.9	74	S	2	0.9		0	Fog		Calm	0	0	Clear	
Wickenburg, Arizona					52	11.1	47	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.98	761.5	30.05	763.3	66	18.9	89	Calm	0	0		0	0			0.06	1.5	Clear	
Winnemucca, Nevada	25.75	654.0	30.11	764.8	28	— 2.2	54	NE	2	0.9		0	0			0.02	0.5	Clear	
Wood's Holl, Massachusetts	29.67	753.6	29.71	754.6	55	12.8	87	W	16	7.2		1cs	0	Calm		0.59	15.0	Clear	
Yankton, Dakota	28.16	715.3	29.34	745.2	73	22.8	63	SW	14	6.3		5c	0	Calm		0	0	Fair	
Yuma, Arizona	29.70	754.4	29.85	758.2	64	17.8	43	NW	3	1.3		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.06	560.3			60.5	15.8	72	Calm	0	0		5k	0			0	0	Fair	Thomas Herran.
Havana, Cuba, W. I.	30.01	762.2	30.06	763.5	77	25.0	82	Calm	0	0		8cs	0	Calm		1.77	45.0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	79	26.1	79	SE	9	4.0		0	2k	Calm		0	0	Fair	James Gall.
Navassa, W. I.	29.98	761.5	30.06	763.5	78	25.6	70	E	7	3.1		5k	5s	S	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	79	26.1	87	E			2		8ks	E		0.600	15.24	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.45	748.0	30.00	762.0	80	26.7	85	Calm			0		10s			0.11	2.8		Francesco J. Cisneros
Rivas, Nacaragua								SE					4k		SE	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I.	30.04	763.0	30.07	763.8	80	26.7	70	Calm	0	0		4k	0	SW		0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.88	758.9	29.93	760.2	20.0	— 6.7	93	SW	13	5.8		3k	2s	E	E	0	0	Cloudy	J. Fortscue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.67 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.14	765.5	68	20.0	95	NE	4	1.8			0			0	0			Clear	
§ Navy Yard, Portsmouth, N. H.	29.69	754.1	55	12.8	68	NW	6	2.7			5?			0	0			Cloudy?	
Naval Hospital, Yokohama, Japan	29.74	755.4	65.5	18.6	86	SW			6		6ks		SW	0	0			Threatening	
§ Adams, Punta Arenas, Costa Rica	29.95	760.7	83	28.3	83	NW			2		8		NW					Cloudy	
§ Alaska, Ancon, Peru *	29.96	761.0	62	16.7	88	Calm			0		0					Smooth		Clear	
§ Alert, Yokohama, Japan	29.72	754.9	68	20.0	79	S			5		10		S	0	0	Smooth		Squally	
§ Colorado, New York, N. Y.	29.73	755.1	62	16.7	77	SW	7	3.1			0			0	0			Clear.	
§ Constitution, Hampton Roads, Va.	29.92	760.0	64	17.8	83	SW	4	1.8			0							Clear.	
§ Enterprise, N. 34° 30′, W. 74° 30′?	30.05	763.3	70	21.1	80	NW			1		5?		NW			Mod'ate		Clear?	
§ Franklin, Off Navy Yard, Norfolk, Va	29.99	761.7	62	16.7	83	SW	9.6	4.3			2		SW	0.03	0.8			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.20	767.1	46	7.8	100	W	3.6	1.6			8		W	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.67	753.6	39	3.9	91	E			2		10							Cloudy	
Kearsarge, Boca del Toro, Chiriqui	30.00	762.0	80	26.7	78	W			1		5		W			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.08	764.0	55	12.8	74	NW			4		2		NW	Blank	Blank	Smooth		Fair	
§ Michigan, Erie, Pa.	29.96	761.0	68	20.0	79	WSW			2		0							Clear	
§ Monocacy, Shanghai, China	29.95	760.7	60	15.6	82	NNE			0–1		0							Clear	
§ New Hampshire, Port Royal, S. C.	29.94	760.5	68	20.0	90	WNW	9	4.0			0			0	0			Clear	
Nipsic, N. 37° 04′, W. 0° 45′	29.70	754.4	66	18.9	68	WNW			5		5					Mod'ate	W	D. clouds	
§ Onward, Ancon Bay, Peru †	29.97	761.2	62	16.7	88	Calm			0		5		NE			Long	W	Fair	
§ Palos, Shanghai, China	30.01	762.2	61	16.1	88	NNE			1		0							Clear	
§ Passaic, Washington, D. C.	29.97	761.2	65	18.3	89	SW			2		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.16	766.1	50	10.0	72	NW			1		0					Smooth		Blue sky	
§ Powhatan, Annapolis, Md.	29.87	758.7	64	17.8	78	WNW			2		0							Clear.	
§ Quinnebang, Mogador, Marocco	30.02	762.5	63	17.2	78	W			2		5		SW			Heavy	NW	Fair	
§ Richmond, Shanghai, China	29.98	761.5	63	17.2	78	NE			2		10?		SSE	0.1	3.			Clear	
§ Rio Bravo, Brownsville, Texas †	30.16	766.1	72	22.2	100	ENE	1	0.4			2		S	0	0			Fair.	
§ Saratoga, N. 38° 33′, W. 40° 25′	30.37	771.4	61	16.1	94	NE			3		8		NE	Light	Light	Smooth	E	Clearing	
§ Shenandoah, Montevideo, Uruguay	30.04	763.0	54	12.2	74	WNW			2		5		NW			Smooth		Fair	
§ St. Louis, League Island, Pa.	29.83	757.7	57	13.9	63	W	10	4.5			0			0	0			Clear	
Swatara, N. 5° 55′, E. 98° 15′ †	29.90	759.4	82	27.8	91	WNW			3		2		WNW			Smoot	W	Clear	
Ticonderoga, Strait of Corea	29.92	760.0	57	13.9	100	E			2		5					Smooth		Fair	
§ Trenton, Tenedos, Archipelago	29.75	755.6	75	23.9	48	NNE			4		2?			0	0	None		Cloudy?	
§ Tuscarora, Mare Island, Cal.	30.23	767.8	47	8.3	92	W			2		0			0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	29.75	755.6	64	17.8	83	W			3		0							Clear.	
§ Wabash, Boston, Mass.	29.69	754.1	62	16.7	66	NW	2	0.9			5			0	0			Fair	
§ Wachusett, Montevideo, Uruguay	30.02	762.5	54	12.2	93	NW			2		2		N	0	0	Smooth	N	Clear.	
Wyoming, Tenedos, Asiatic Turkey	29.77	756.1	62	16.7	72	N			4		5		N			Smooth	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 27′, W. 11° 37′	30.25	768.3	49	9.4		NNE			5		10		NNE			Smooth		Hazy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent Liverpool, Eng.	30.17	766.3	58	14.4	58	NW			3		3		NW	0	0			Clear	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge N. 42° 04′, W. 49° 54′ *†	30.36	771.1	53	11.7	93	SSE			3		5		SSE	0	0	Mod'ate	SSE	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
‡ S. S. Newborn, W. Metzger, N. 39° 08′, W. 116° 40′ †	30.06	763.6	55	12.8	93	NNW			2		5		NW	0	0	Short	W	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
‡ S. S. Belgic, L. Meyer, N. 29° 50′, E. 128° 42′ †	29.74	755.4	68	20.0	79	N			6		10		N			Mod'ate	N	Overcast	D. A. Joyce.
‡ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	30.26	768.6	56	13.3		W			4		k			0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
‡ S. S. Ancon, E. Alexander, N. 32° 29′, W. 117° 29′ †	30.20	767.1	58	14.4		ESE			1		0					Light	SE	Clear	
‡ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
‡ S. S. State of California, G. Debney, San Francisco, Cal. †	30.18	766.6	42	5.6		NW			2		0							Clear	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin.																			F. A. Johnston.
§ S. S. Australia, S. 33° 23′, E. 164° 23′	29.66	753.4				SSW					5					Long	SW	Fair	Banneman.
§ S. S. China, W. B. Seabury, Champerico, Guatemala†	29.89	759.2	80	26.7	87	SW			1		0					Heavy	SW	Clear	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of Panama, M. Connolly, N. 14° 58′. W. 94° 40′†.	29.98	761.5	78	25.6		WNW			1		2		NW	½ h'r	½ h'r	Mod'ate	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 37° 14′, W. 130° 25′†.	30.34	770.6	53	11.7	80	W			3		2		W			Mod'ate	W	Clear	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.*†	30.21	767.3	64	17.8		E			2		10		NE	0	0	Smooth		Misty	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 33° 42′, E. 135° 51′†.	29.94	760.5	64	17.8	78	SSW			4		8		SSW	Blank	Blank	Smooth		Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama	29.95	760.7	80	26.7	100	NW			2		2		NW	0	0			Clear	
§ S. S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S. S. Granada, J. M Cavarly																			
S. S. Idaho, Nanaimo, Vancouver I'd†	30.24	768.1				NE			1		8		SW	0	0	Smooth		Cloudy	
§ S. S. Zealandia, R. C. Ghest, N. 7° 16′, W. 162° 46′.	29.86	758.4				NE			4				NE			Mod'ate	NE	Squally	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 45° 59′. W. 29° 50′†.	30.26	768.6	59	15.0		SSW			3		8		SW	Light	Light	Smooth		Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			W. S. Waugh.
S. S. Britanic, H. Perry, N. 47° 16′, W. 35° 51′†.	30.36	771.1	49	9.4	??	N			5		5		N	0	0	Mod'ate	NNW	Fine	J. Jones.
S. S. Celtic, B. Gleadell.																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.																			Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Vineyard Haven, Mass.	29.73*	755.1	57	13.9	63	W	15	6.7			2s			0.63	16.0			Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 08′, E. 50° 10′.*†	30.20	767.1	74	23.3		SSW			6		2		SSW	0	0	Rough	SSW	Fair	B. F. Woodbury.
Brigantine George, W. H Champlin, N. 21° 15′, W. 64° 46′. †.	30.30	769.6	82	27.8		E			5		1		ESE	0	0	Mod'ate	SE	Clear	
Hippolyta, N. 48° 01′, W. 26° 31′.*	30.07	763.8	62	16.7		SSE			6		8		S			Mod'ate	ENE	Fair	
Iron Cross, W. Randall.																			W. Randall.
Barque Syringa, E. Lewis.																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 7, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:48 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.17	766.3				W			3		3			0	0	Pretty fair.	Dr. Ollive.
Nemours			29.89	759.3	64.4	18.0	92	WNW			5		10			0.402	10.2	Covered	Metge.
Algiers			29.71	754.6	59.4	15.2	74	W			5		10			0.126	3.2	Covered	Nicolas.
La Calle			29.58	751.3	63.5	17.5	63	NW			4		5			0	0	Cloudy	Fonfrède.
Tunis			29.53	750.0															Jacques.
Sfax			29.67	753.5															Gau.
Saida			29.89	759.1															Bernard.
Tebessa			29.68	753.8	63.3	17.4	26	WSW			6		6			0.150	3.8	Cloudy	Watrin.
Geriville					46.8	8.2	29	NNW			1		10			0.118	3.0	Covered	Brugniaux.
Laghouat			29.79	756.6	63.3	17.4	27	NW			4		5			Inap.	Inap.	Cloudy.	Suart.
Biskra			29.69	754.1	70.2	21.2	57	WNW			3		4			Inap.	Inap.	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 690? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.08	738.7	29.60	751.9	75.9	24.4	51	E			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.03	737.4	29.78	756.4	61.9	16.6	71	W	3.4	1.5			9			0.035	0.9		Dr. Wierzbicki.
Eperies	28.91	734.4	29.77	756.2	61.5	16.4	73	S			2		10ks		N	0.063	1.60		Julius Mikolik.
Gratz	28.43	722.0	29.62	752.4	67.6	19.8	60	SSW			3		6			0.020	0.5		Andreas Rospini.
Hermannstadt	28.39	721.0	29.76	755.9	69.3	20.7	41	SE			4		0			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.32	719.3	29.63	752.5	59.5	15.3	83	ENE			2		10			0.098	2.5		The Staff.
Lemberg	28.78	731.0	29.73	755.1	67.8	19.6	52	SW			2		3			Blank	Blank		Dr. T. Stanecki.
Pola	29.49	749.0	29.69	751.8	67.3	19.6	60	SE			3		8			0.197	5.0		I.R. Hydrographic Office.
Szatlmar	29.35	745.6	29.80	756.9	73.8	23.2	40	SE			3		4			0	0		Pet. Pancsics, S. J.
Szegedin	29.45	747.9	29.71	754.7	71.6	22.0	56	S			4		0			0	0		Karl Stancel.
Trieste	29.56	750.9	29.67	753.5	69.1	20.6	80	Calm			0		4			0.035	0.9		P. Busin.
Vienna	28.98	736.1	29.72	754.9	62.2	16.8	70	NE			1		9			0.701	17.8		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels																			Royal Observatory
Furnes																			M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 5, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.02	762.5	30.12	765.0	44.2	6.8		NW	23	10.3			9			0.010	0.25	Overcast	W. Boswell.
Ardrossan	30.12	765.0	30.14	765.5	51	10.6		WNW			2		5					Blue sky	G. Carrick.
Armagh, (Observatory)	29.94	760.5	30.18	766.6	52.8	11.6		N	6	2.7			3					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.14	765.5	54.2	12.3		WNW	9	4.0			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.59	751.6	30.11	764.8	49.3	9.6		NE					10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.74	755.4	30.14	765.5	47.4	8.6	59	NW			1		8			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	80	26.7		NE			2		6					Gloomy	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.03	762.7	30.13	765.3	49.9	9.9		N			2		10					Overcast	H. Todd.
Cardington			30.12	765.0	52.0	11.1		NE			1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.98	761.5	30.11	764.8	49.1	9.5		NE			1		9					Gloomy	Sapper W. Gibson, R. E.
Donaghadee	30.14	765.5	30.18	766.6	50	10.0		NNW			3		0					Blue sky	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	50	10.0		ENE			4		3					½ clouded	J. Costello.
Falmouth (Observatory)	29.93	760.2	30.16	766.1	52.0	11.1		SSE			2		10					Misty	The Staff.
Fort Napier, Natal	27.88	708.1	30.09	764.3	80.6	27.0		NE			1		3					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.81	757.2	30.04	763.0	88	31.1		Calm			0		8					D. clouds	
Galway (Queen's College)			30.15	765.8	52	11.1		Calm			0		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.77	756.1	29.82	757.4	63.7	17.6		W			5		2					Blue sky	Sgt. W. Allen.
Glasgow, (Observatory)	29.93	760.2	30.13	765.3	49.9	9.9		W			2		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.11	764.8	30.12	765.0	47	8.3		NNE			4		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.95	760.7	30.13	765.3	52.0	11.1		N			4		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.89	759.3	30.12	765.0	51	10.6		NE			3		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.28	769.1	30.40	772 1	58	14.1		ESE			4		3k			0	0	Gloomy	M. P. Moyle.
Holyhead	30.12	765.0	30.16	766.1	51	10.6		NW			3		2					Blue sky	John Tilston.
Jersey	29.84	757.9	30.14	765.5	52.0	11.1		NNE			3		3					D. clouds	J. Fisher.
Kew (Observatory)	30.09	764.3	30.13	765.3	52.0	11.1		NNE	16	7.2			8					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.85	758.2	30.10	764.5	50.0	10.0		N			1		9					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.40	746.7	29.48	748.8	72.8	22.7		N			3		0					Blue sky	A. King.
Nairn	30.06	763.5	30.16	766.1	46	7.8		NNW			3		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.07	763.8	75.0	23.9		SE			1		10n					Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.95	760.7	30.14	765.5	52.3	11.3		NNW			1	c	7k		N	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.62	752.3	30.15	765.8	50.0	10.0		N			2		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.91	759.7	30.17	766.3	52	11.1		N			2		8					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	30.05	763.3	30.13	765.3	56.8	13.8		E			4		10					Overcast	John Merrifield.
*Roche's Point	30.14	765.5	30.24	768.1	55	12.8		SSW			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.99	761.7	30.16	766.1	53	11 7		S			1		0					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.12	765.0	44.5	6.9		NW	22	9.8			9					Showery	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.79	756.7	29.86	758.4	65.0	18.3		NE			1		3					D. clouds	Serg't W. H. Lyne.
Sheffield	29.89	759.2	30.18	766.6	49.9	9.9		NNE			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.12	765.0	30.15	765.8	47.0	8.3	73	Calm			0		10			0	0	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.15	765.8	49.2	9.6		SW	0	0			10					Threatening	Rev. S. J. Perry.
Stratfield Turgiss	29.91	759.7	30.13	765.3	55.3	12.9		NE			3		4					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.10	764.5	30.13	765.3	59	15.0		S			4		5					D. clouds	W. Newcombe.
Valencia (Observatory)	30.18	766 6	30.21	767.3	52.4	11.3		NW	15	6.7			5					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.06	763.5	30.10	764.5	76.0	24.4	63	SSE	7.2	3.2		0	1			0	0	Clear.	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.62	752.3	40.0	4.4	71	W			3		7kn			0.50	12.7	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.16	766.1	48.1	8.9		E			1		9k	NW		0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.87	758.7	30.06	763.4	75.4	24.1	57	SSE	21.0	9.4		1	4		SSE			Squally	C. Meldrum.
Melbourne (Observatory)	29.69	754.1	29.78	756.4	59.0	15.0	57	N	24	10.7			7			0	0	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.19	766.8	50	10.0		NW			3	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.98	761.5				W			7		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from		
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 47° 24′, W. 11° 44′			D. clouds	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.25	666.7	29.97	761.2	69.4	20.8	77	SE			2	1k	3c	E		0	0	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.70	754.3	29.74	755.5	51.3	10.7	44	NW			4		4						
Fanöe	29.86	758.4	29.88	758.9	47.8	8.8	59	NW			6		6						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.92	760.0	29.97	761.1	50.0	10.0	89	SE			2		8					Raining	
Thorshavn (Faröe)	30.09	764.2	30.12	765.1	43.7	6.5	83	N			2		6						
Vestervig	29.72	754.8	29.81	757.2	45.1	7.3	61	NW			6		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.50	749.2	30.05	763.2	55.4	13	66	N			4		5k		N	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.93	760.2	30.04	763.0	57.6	14 2	95	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.76	755.8	30.02	762.4	51.6	10.9	43	NE			4		5k		NE	0	0		Klein, Commandant.
Avignon, Normal School	29.47	748.6	29.55	750.6	66.0	20	51	N			4		0			0.016	0.4	Very clear	Giraud, Director.
Bar-sur-Seine	29.32	744.8	29.87	758.8	56.8	13.8	42	N			3		8kn		NE	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.75	755.6	30.02	762.4	54.0	12.2	41	NE					8		NE	0.020	0.50	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.93	734.7	29.82	757.4	50.0	10	85	NE			2		10		N	0.579	14.7	Covered	A. Carré, Director.
Bordeaux	29.62	752.3	29.82	757.3	61.2	16.2	57	ENE			2		5	NW	NNE	0	0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.88	733.6	29.80	756 9	54.3	12.4	86	N			4		10n	N	N	0.08	2.	Covered	Marlot, Director.
Bourges, Normal School	29.34	745.1	29.88	759.0	55.0	12.8	75	NNE			3		5kn		NNE	0.283	7.2	Cloudy	M. Gonce, Director.
Brest, Naval Observatory	29.87	758.7	30.11	764.9	57.2	14.0	58	NE			2		3k		NE	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.95	760.6	30.02	762.5	51.4	10.8	64	NE			4		2		NE	0	0	Slightly cld'y	M. Bietrix, Director.
Carcassonne, N. School	29.22	742.3	29.63	752.6	66.2	19	63	W			3		8	W	W	1.10	28.	Very cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.53	750.0	29.85	758.1	49.1	9.5	66	NE			1		5		NE	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.35	745.4	29.91	759.6	56.3	13.5	89	N			1		4		S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.45	722.5	29.81	757.1	48.6	9.2	89	NNW			2		10		N	0.406	10.3		Alluard, Director.
Commercy, Normal School	29.03	737.3	29.89	759.1	51.4	10.8	50	N			4		kn	N	N	0.102	2.6		Dr. Coullet, Director.
Commune de Gréasque*	28.43	722.0	29.57	751.0	68.2	20.1	58	NW			2		8		NW	0 567	14.4		L. Kina, Director.
Grenoble, Normal School	28.88	733.6	29.63	752.5	63.0	17.2	70	NW			2		kn		SW	0.091	2.3		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.77	756.2	29.98	761.6	60.8	16.0	47	N			3		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.70	754.3	30.00	762.1	54.3	12.4	50	NNE			4		5		NNE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.85	732.9	29.73	754.8	50.5	10.3	82	NE			3		5k		SE			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.99	761.7	30.10	764.5	57.6	14.2	48	NE			4		2		NE	0	0	¼ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.12	739.6	29.73	755.2	56.1	13.4	88	N			2		10		NW	0.374	9.5	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.22	742.2	29.48	748.9	68.9	20 5	57	NW			1-2		10		E	1.089	27.65	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.83	732.2	29.89	759.2	44.4	6.9	77	NNE			4		n		NNE	0	0		Barbier, Director.
Mont-Louis	24.50	622.2	29.73	755.2	45.3	7.4	66	W	7.4	3.3			5		E	0.138	3.5		M. Cave, for Dr. Fines.
Nice	29.56	750.7	29.59	751.5	61.9	16.6	67	N			4		10	N	N			Light rain	Capt. Boissière, Director.
Nismes, Normal School	29.34	745.2	29.54	750.3	70.0	21.1	40	NW			4		2		N	0.39	10.	Slightly cld'y	M. Boyer, Director.
Perpignan	29.50	749.2	29.60	751.9	64.2	17.9	60	NW	20.6	9.2			4	NNW	NW	0.035	0.9		Dr. Fines.
Pic du Midi (Plantade) H. P	22.25	565.2			36.0	2.2							10		W	4.824	122.5	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.61	726.7	29.65	753.1	62.6	17	53	N			4		5ks	N	N	0.24	6.	Cloudy	M. Taillen
Puy de Dome (Summit) Obs	24.90	632.4			36.1	2.3	100	N			6		10			0.177	4.5	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.91	759.8	29.95	760.6	65.8	18.5	46	N			2		10	N	N	0	0	Covered	Lt E. Devante, Director
Rouen, Normal School	29.95	760.6	30.03	762.8	56.5	13.6	43	N			3		5		N	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.06	763.5	30.09	764.2	54.9	12.7	60	NE			4		1	NE	NE	0.038	0.96	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.81	757.2	29.98	761.4	57.2	14.0	40	NNE			3		3		NNE	0	0	Slightly cld'y	E. Renou, Director.
Tarbes, Normal School	28.68	728.4	29.76	755.8	51.8	11	86	W											T. Huguet, Director
Toulouse, Observatory	29.02	737.1	29.73	755.2	61.7	16.5	69	NNW			4		10			0.138	3.5	Covered	B. Bailland, Dir.
Tours	29.76	755.8	29.95	760.8	57.6	14.2	47	NE			3		8		NE	0.114	2.9	¾ covered	M. de Tastes.
Versailles, Observatory	29.49	749.1	29.98	761.6	53.6	12 0	40	NE			6					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.07	738.3	29.78	756.3	54.5	12.5	87	NNW			1		8		N	0.20	5.	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.20	767.1	30.23	767.8	79.2	26.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.70	754.3			52.9	11.6	41	NNE			3		6		NNE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.89	759.2	29.91	759.8	59.7	15.4	76	SE	13.7	6.1			0			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,686.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.95	735.4	29.81	757.1	47.1	8.4	74	N			8		9n	N		0.169	4.3	Raining	Prof. Dr. Hoh.
Berlin	29.66	753.3	29.83	757.6	56.5	13.6	36	NW			4		8			0	0		Prof. Dr. Arndt.
Breslau	29.30	744.1	29.82	757.5	53.6	12.0	54	NNW			3		9			0.368	9.36	Raining	Royal University Obs'y.
Carlsruhe	29.39	746.6	29.83	757.6	43.9	6.6	98	NW			2		10	N		0.528	13.4	Raining	Albert Senz.
Cassel	29.27	743.5	29.87	758.8	50.4	10.2	31	NE			3		5			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.60	751.9	29.97	761.2	48.7	9.3	60	NNE			3		10			0.100	2.7	Raining	Physical Society.
Friedrichshafen	28.23	717.1	29.63	752.6	60.1	15.6	65	NNE			5		6	NE		1.658	42.1	Raining	Chief Telegrapher Wilhelm.
Hamburg	29.84	757.9	29.91	759.7	50.4	10.2	65	NW			4		9			0	0		Dr. Reinhold Kleeman.
Kiel	29.84	758.0	29.86	758.4	51.6	10.9	42	NW			4		4			0.011	0.28		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.67	753.7	29.76	755.8	48.2	9.0	58	NW			5		8	W		0.322	8.2		Prof. E. Luther.
Köslin			29.80	757.0	53.4	11.9		NW			4		2			0	0		H. Müller.
Leipsic Observatory	29.47	748.6	29.90	759.4	50.4	10.2	58	N			1		10			0.004	0.1		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.65	753.2	29.88	758.9	54.3	12.4	50	NW			5		6ks	NW		0	0		Dr. Assmann.
Memel	29.65	753.2	29.70	754.4	46.4	8.0	83	NW			4		10n						Reinbrecht & Issermann.
Munich	27.87	707.9	29.71	754.7	54.5	12.5	77	NW			4		10	NW		0.055	1.4		Dr. C. Lang.
Neufahrwasser	29.76	755.8	29.77	756.2	55.0	12.8	35	WNW			3		4			0.024	0.6		A. Lothes.
Neustadt (Palatinate)	29.32	744.7	29.84	758.0	46.4	8.0	79	NNE			2		10			0.197	5.0		Reallehrer Dicknether.
Posen	29.50	749.3	29.79	756.6	54.3	12.4	46	NW			4		2			0.268	6.8		Prof. Dr. Magener.
Strassburg (in Alsace)	29.31	744.4	29.87	758.6	44.6	7.0	100	NNW			2		10	NNE				Raining	Imp. University Observatory.
Stuttgart	28.82	732.1	29.72	754.8	49.1	9.5	87	N					10			0.638	16.2	Raining	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.28	718.3	29.85	758.1	46.0	7.8	91	NNE	4.0	2.2			10		NE	0.043	1.1	Raining	Reallehrer J. Hopfner.
Wustrow	29.83	757.6	29.85	758.2	49.8	9.9	58	W			5		3s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.49	749.1	29.87	758.8	73.8	23.2		S			0.5		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.68	753.9	29.73	755.2	83.0	28.3	82	SW	34	15.2			8		WNW	0	0	D. clouds	
Deesa	29.22	742.2	29.68	753.8	97.7	36.5	32	WSW	17.0	7.6			6	W		0	0	Misty	
Bombay	29.80	757.0	29.84	758.0	85.4	29.7	71	NW	15	6.7			0			0	0	Blue sky	
Poona (Yarrowda)	27.96	710.3	29.78	756.4	89.7	32.1	24	W	23	10.3			0			0	0	Blue sky	
Belgaum	27.29	693.0	29.78	756.4	84.3	29.1	54	W	8	3.6			0			0	0	Misty	
Lahore	28.86	733.1	29.57	751.0	103.3	39.6	19	W	6.0	2.7			3			0	0	Misty	
Roorkee	28.76	730.5	29.63	752.6	93.0	33.9	35	SE	5	2.2			3			0	0	Squally	
Agra	29.06	738.1	29.60	751.8	103.6	39.8	26	E	7.0	3.1			0			0	0		
Nagpur	28.63	727.1	29.62	752.3	104.7	40.4	12	W	5.1	2.3			2	W		0	0	D. clouds	
Jubbulpore	28.30	718.8	29.61	752.0	100.7	38.2	19	NW	4.2	1.9			3			0	0	D. clouds	
Lucknow	29.32	744.7	29.69	754.0	93.2	34.0	37	E	2.5	1.1			0			0	0	Blue sky	
Allahabad	29.35	745.4	29.65	753.1	95.3	35.2	30	Calm	2.1	0.9			0			0	0	Blue sky	
Patna	29.53	750.2	29.71	754.7	89.0	31.7	50	E	2.4	1.1			4	E	E	0	0	D. clouds	
Hazaribagh	27.71	703.8	29.68	753.9	86.8	30.4	34	N	6.1	2.7			1			0	0		
Cuttack	29.60	751.7	29.68	753.7	88.8	31.6	66	S	8.9	1.7			2			0.33	8.4	D. clouds	
Calcutta (Alipore)	29.70	754.3	29.72	754.8	85.5	29.7	68	Calm					0			0	0	Blue sky	
Goalpara	29.36	745.7	29.77	756.0	80.1	26.7	64	ESE	4.7	2.1			2			0	0	D. clouds	
Chittagong	29.66	753.4	29.75	755.7	81.9	27.7	70	SSE	5.2	2.3			8			0	0	D. clouds	
Sibsagar	29.52	749.7	29.86	758.3	75.6	24.2	86	ENE	1.4	0.6			6			0.10	2.5	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.27	743.4	29.67	753 7	66.0	18.9	57	N	2.5	1.1			8			0.079	2.0		Prof. Giovanni Clodig.
Milan	29.14	740.2	29.66	753.3	56.8	13.8	90	NE	5.6	2.5			10			0.426	10.8		Prof. Schiaparelli.
Padua	29.57	751.1	29.68	753.8	62.8	17.1	69	N	16.1	7.2			10	SSE		0.098	2.5		Prof. Dott. Lorenzoni.
Moncalieri	28.73	729.8	29.63	752.7	58.3	14.6	78	E	8.7	3.9			10			0.906	23.0		Prof. P. F. Denza.
Genoa	29.37	745.9	29.56	750.7	63.9	17.7	55	N	8.1	3.6			10	SE		0.252	6.4		Prof. G. M. Garibaldi.
Mondovi	27.74	704.7	29.65	753.0	48.9	9.4	92	W			4		10			0.657	16.7		Prof. D. C. Bruno.
Pesaro	29.55	750.6	29.60	751.8	64.0	17.8	78	E	8.7	3.9			10	SSW		0	0		Prof. Luigi Guidi.
Florence	29.28	743.8	29.54	750.2	69.1	20.6	53	NE			4		10	S		0.016	0.4		Cav. F. Meucci.
Leghorn	29.43	747.5	29.51	749.6	62.4	16.9	81	NE	12.5	5.6			10	WSW		0.146	3.7		Prof. P. Monte.
Rome	29.35	745.5	29.52	749 9	73.6	23.1	44	S	23.7	10.6			3			0	0		Prof. P. S. Ferrari
Lecce	29.46	748.3	29.71	754.6	75.9	24.4	31	SSW	28.0	12.5			0			0	0		Prof. C. De Giorgi.
Cosenza	28.71	729.1	29.58	751.3	75.2	24.0	75	SE	34.9	15.6			10			0	0		Prof. D. Conti.
Cagliari	29.28	743.7	29.47	748.5	65.7	18.7	50	SW			4		7	W		0.591	15.0		Prof. A. Pacinotti.
Palermo	29.28	743.8	29.53	750.1	68.7	20.4	57	NNW	8.7	3.9			10			0	0		Prof. G. Ciacciatore.
Syracuse	29.48	748.7	29.52	749.8	67.1	19.5	82	E	3.8	1.7			9	S		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.04	737.5	29.54	750.4	69.8	21.0	49	SSW	6.9	3.1			10	SW		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					51.9	11.1	73	NNE	6.9	3.1			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.79	756.6	30.00	762.0	53.0	11.7	81	SSW	0.6	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.79	756.6	29.86	758.4	46.8	8.2	94	ENE	1.8	0.8		0	2s			0.930	23.62	Fair	The Staff.
Wakayama	29.86	758.4	29.91	759.7	53.0	11.7	69	E	4.3	1.9			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.06	636.5	30.10	766.1	49.6	9.8	35	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.69	601.7			60.4	15.8	55	Calm	0	0		0	0			0	0	Squally	Vicente Fernandez.
Leon	24.42	620.2	30.05	763.2	63.0	17.2	63	N			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	20.73	755.0	29.98	761.6	67.8	19.9	100	E			1	0	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.07	585.9	30.07	763.7	53.6	12.0	66	W	0.7	0.3		2c	5k		SW	0	0	Hazy	The Staff
Morelia	23.99†	609.3†			66.6	19.2	48	SW			5	3c	8k	SE	S	0	0	Covered	M. Fena, M. D.
Pabellon (Aguascalientes)	23.97	608.7	29.94	760.5	59.0	15.0	47	SE			1	1c	0	SW		0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.5	30.21	767.3	53.6	12.0	47	Calm	0	0		1s	0	N		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.34	618.1	30.26	768.7	62.8	17.1	72	SE			1	0	0			0	0	Hazy	G. Barroeta, M. D.
Tiacotalpam	29.84	758.0	29.85	758.3	80.2	26.8	72	E			1	3	2	S	E	0	0	Fair	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.59	573.9	30.17	766.4	56.5	13.6	43	Calm			0	2ck	0	SW		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.07	763.8	30.07	763.8	50.4	10.2		N			4					0.008	0.2		
Groningen	29.93	760.2	29.98	761.6	48.4	9.1		N								0	0		
Helder	30.03	762.8	30.03	762.8	45.3	7.4		NNW			4					0.012	0.3		
Hellevoetsluis	30.04	763 1	30.04	763.1	51.3	10.7	57	NNW			2					0	0		
Utrecht	29.98	761.6	30.03	762.8	51.6	10.9	41	N			3		5			0.091	2.3	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.76	755.8	29.81	757.2	40.3	4.6	87	NNW	17.7	7.9	.....	.....	3	.....	.....	0.110	2.8	Raining	
Brönno	29.63	752.5	29.67	753.5	41.2	5.1	78	SW	9	4	.....	.....	6	.....	.....	0	0	.....	
Christiania	29.45	748.0	29.60	751.7	49.8	9.9	26	WSW	7	3	.....	.....	9	.....	.....	0	0	.....	
Tromsö	29.58	751.2	29.63	752.6	37.4	3.0	73	NNE	7	3	.....	.....	10	.....	.....	0.047	1.2	.....	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.24	768.2	30.46	773.6	63.0	17.2	72	ENE	.....	.....	3	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.96	735.6	29.95	760.6	66.9	19.4	38	Calm	0	0	.....	.....	4	.....	.....	0.118	3.0	.....	Dr. A. M. R. dos Santos
Funchal (Madeira)	30.19	766.9	30.28	769.1	65.5	18.6	45	SW	8.7	3.9	.....	.....	1	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.66	753.3	30.02	762.4	59.5	15.3	48	NNW	28.6	12.8	.....	.....	4	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.38	771 6	30.45	773.4	63.7	17.6	65	SE	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mosamedes, Benguela	.....	.....	29.92	760.0	76.1	24.5	.....	W	.....	.....	2	.....	2	.....	W	1	W	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds	.....	.....	30.39	771.8	77.0	25.0	.....	NNE	.....	.....	1	.....	3	.....	NE	1	NE	.....	Blue sky	Antonio Sarmento, Q.M.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando	.....	.....	29.94	760.5	78.8	26.0	.....	W	.....	.....	4	.....	2	.....	W	1	.....	.....	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China	.....	.....	30.03	762.8	77.9	25.5	.....	E	.....	.....	3	.....	10	.....	E	1	SE	.....	Raining.	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.58	751.3	29.60	751.8	53.4	11.9	68	ESE	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	30.08	764.1	30.00	762.0	59.0	15.0	47	ESE	9	4	.....	10cp	.....	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.17	740.9	29.66	753.4	46.9	8.3	82	SW	4	2	.....	.....	10	.....	.....	.....	Light clouds		Meteorological Obs.
Dorpat	29.37	745.9	29.61	752.0	57.0	13.9	87	SE	4	2	.....	.....	10n	.....	.....	.....	Light rain		Prof. Dr. Weihrauch.
Ekaterinburg	28.98	736.1	29.94	760.5	51.1	10.6	29	NW	22	10	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.75	755.6	30.01	762.2	68.4	20.2	32	WSW	4	2	.....	.....	8	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.88	759.0	29.90	759.5	50.9	10.5	100	ENE	4	2	.....	.....	9	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.28	743.6	29.89	759.2	65.7	18.7	41	SSE	16	7	.....	ck	3ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.68	753.8	30.13	765.4	69.1	20.6	33	WNW	2	1	.....	.....	9	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.78	756.3	29.98	761.4	66.4	19.1	29	ESE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.43	747.4	29.95	760.8	67.6	19.8	31	SSW	10	4.5	.....	.....	6ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.88	758.9	29.95	760.7	55.0	12.8	34	ENE	9	4	.....	.....	5k;ks	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.42	747.2	29.50	749.4	33.8	1.0	83	Calm	0	0	.....	.....	10n	.....	.....	.....	Snowing		
Nukuss	29.67	753.7	29.90	759.5	66.0	18.9	58	ENE	9	4	.....	.....	7kn	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pekin (China)	29.26	743.2	29.40	746.8	68.5	20.3	48	Calm	0	0	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.54	750.4	29.56	750.8	62.1	16.7	67	SSW	18	8	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28 32	719.3	29.82	757.3	76.3	24.6	66	Calm	0	0	.....	.....	10	.....	.....	Blank	Blank	.....	Teich, A. M.
Tiflis	28.50	723.8	29.88	758.9	66.4	19.1	60	S	4	2	.....	.....	6ks	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.33	744.9	29.75	755.6	53.1	11.7	80	WNW	11	5	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.23	742.4	29.63	752.6	64.9	18.3	72	SSE	9	4	.....	.....	8	.....	.....	.....	Heavy clouds		Astronomical Obs.
Yeniseisk	29.52	749.9	29.82	757.3	43.2	6.2	47	W	2	1	.....	.....	2	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.50	749.3	29.60	751.9	67.1	19.5	56	SSW	2.6	1.17	.....	.....	3	.....	.....	0	0	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	29.96	760.9	30.02	762.4	52.0	11.1	95	NW	7.1	3.17	.....	.....	10	.....	.....	0.457	11.6	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26 97	685.0	.....	.....	49.8	9.9	73	N	18.3	8.17	.....	.....	9	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez
Madrid, Royal Observatory	27.61	701.3	29.82	757.3	58.8	14.9	53	N	5.2	2.33	.....	0	8	.....	.....	0.098	2.5	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.57	751.0	29.72	754.8	67.6	19.8	58	WNW	8.1	3.61	.....	3	5	SE	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.17	741.0	30.08	763.9	54.7	12.6	69	NE	14.3	6.4	.....	.....	10	.....	.....	0.004	0.1	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	760.9	30.02	762.6	75.3	24.1	85	Calm	0	0	.....	6ck	4sk	SW	.....	1.004	25.5	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.3	29.91	759.6	82.7	28.2	77	NE	3.5	1.6	.....	.....	6k	.....	E	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.85	758.2	29.95	760.7	62.1	16.7	71	WSW	6.3	2.8	.....	0	7	.....	SW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	762.0	30.09	764.3	79.2	26.2	83	SE	4.7	2.10	.....	2c	2k	SE	SE	0	0	Clear	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.8	29.56	750.8	42.8	6.0	.....	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	29.55	750.5	29.60	751.8	52.2	11.2	45	S	.....	.....	2	.....	9	.....	.....	0.228	5.8	.....	
Hernosand	29.53	750.0	29.58	751.3	52.2	11.2	48	NE	.....	.....	4	.....	8	.....	.....	0	0	.....	
Stockholm	29.38	746.3	29.56	750.8	52.9	11.6	53	WNW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Wisby	29.52	749.8	29.58	751.3	51.8	11.0	45	W	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.43	747.4	29.51	749.6	44.8	7.1	80	E	7.2	3.2	.....	.....	10	.....	.....	0.047	1.20	.....	Nils Ekholm.

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

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
SWEDISH NAVAL SERIES.																				
Barque Australia, N. 43° 52′, W. 15° 15′	.....	.....	30.32	770.2	54.3	12.4	78	N	.....	.....	4	.....	4	.....	.....	.....	.....	.....	D. clouds	J. P. Pahlson.
H. M. Corvette Balder, N. 55° 51′, E. 15° 11′	.....	.....	29.68	753.8	45.0	7.2	76	WSW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	Blue sky	Capt. A. C. Schonmeyr.

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.25	717.5	29.66	753.4	59.0	15.0	65	NNE	.....	.....	3	.....	9	.....	.....	0.240	6.1	Covered	The Observatory.
Zurich	28.09	713.4	29.71	754.6	59.4	15.2	76	NW	.....	.....	3	.....	10	.....	.....	0.787	20.0	Raining	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —7.2 mm.; Thermometer, —0.2 Cent. Relative Humidity, +7 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.92	755.9	61.9	16.6	46	NE	6	2.5	.....	.....	6	.....	NE	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.80	757.0	76.1	24.5	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.84	757.9	73.9	23.3	62	SW	.....	.....	3	.....	3ks	.....	SW	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	34.7	1.5	.....	NW	7	3.1	.....	0	1s	.....	.....	0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	29.94	760.5	30.01	762.2	36.2	2.3	61	NW	12	5.4	.....	0	0	.....	.....	0.08	2.0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	29.87	758.7	29.91	759.7	33.7	0.9	76	N	18	8.0	.....	.....	9s	.....	.....	1.120	28.45	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.94	760.5	30.14	765.5	44.8	7.1	67	E	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.85	758.2	30.02	762.5	34.0	1.1	.....	NW	.....	.....	2	0	0	.....	.....	0.22	5.6	Clear.	H. A. Johnson.
Father Point, Quebec	30.10	764.5	30.13	765.3	31.9	— 0.1	84	NW	10	4.5	.....	0	0	.....	.....	0.23	5.8	Clear.	J. McWilliams.
Fredericton, N. B.	29.99	761.7	30.05	763.3	39.5	4.2	53	NW	6	2.7	.....	0	0	.....	.....	0.310	7.07	Clear.	Prof. Harrison.
Fort Garry, Manitoba	28.88	733.5	29.69	754.1	49.0	9.4	71	SW	8	3.6	.....	5k	5ks	SW	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	28.92	734.6	30.01	762.2	52.0	11.1	66	E	.....	.....	2	4cs	0	Calm	.....	0	0	Fair	James Grant.
Halifax, N. S.	29.77	756.1	29.90	759.4	38.4	3.6	70	N	16	7.2	.....	0	5ks	.....	.....	1.345	34.17	Fair	A. Allison.
Hamilton, Ontario	29.71	754.6	30.09	764.3	45.7	7.6	87	W	.....	.....	1	0	6ks	.....	.....	0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.80	756.9	30.14	765.5	46.8	8.2	82	NE	4	1.8	.....	10cs	0	Calm	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.71	754.6	29.75	755.6	32.9	0.5	93	N	8	3.6	.....	.....	10n	.....	.....	0.91	23.1	Overcast	C. H. Rigby.
Montreal, Quebec	29.97	761.2	30.18	766.6	44.0	6.7	67	NE	7	3.1	.....	0	0	.....	.....	0.07	1.8	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	30.22	767.6	30.25	768.3	26.2	— 3.2	86	N	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.40	746.7	30.10	764.5	47.0	8.3	63	SE	3	1.3	.....	.....	9s	.....	.....	0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.37	746.0	30.07	763.8	47.2	8.4	66	E	21	9.4	.....	5k	5ks	SE	.....	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.38	746.2	30.14	765.5	48.7	9.3	70	E	.....	.....	1	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.35	745.5	30.05	763.3	50.1	10.1	86	NE	9	4.0	.....	10k	0	NW	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.36	745.7	30.00	762.0	57.4	13.9	61	E	8	3.6	.....	4c	0	E	.....	0	0	Fair	M. Payne.
Quebec, Quebec	29.82	757.4	30.16	766.1	36.0	2.2	80	W	.....	.....	3	0	0	.....	.....	0.41	10.4	Clear.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.71	754.6	30.19	766.8	37.5	3.1	76	SW	2	0.9	.....	8c	0	SW	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.83	757.7	30.00	762.0	38.0	3.3	63	N	12	5.4	.....	0	0	.....	.....	0.200	5.08	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.26	743.2	29.97	761.2	48.1	8.9	92	SE	17	7.6	.....	.....	10n	.....	.....	0.46	11.7	Light rain	K. Stewart.
Stratford, Ontario	28.73	729.7	30.01	762.2	50.0	10.0	71	E	12	5.4	.....	0	5s	.....	.....	0	0	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.75	755.6	29.79	756.7	34.8	1.6	72	N	8	3.6	.....	.....	10s	.....	.....	0.94	23.9	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.72	754.9	30.11	764.8	43.8	6.6	93	NE	16	7.2	.....	.....	10n	.....	.....	0.65	16.5	Light rain	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.95	735.3	30.01	762.2	51.9	11.1	68	.....	.....	.....	.....	7ck	0	.....	.....	0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.92	760.0	29.98	761.5	40.4	4.7	68	N	10	4.5	.....	5k	0	N	.....	0.70	17.8	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.45	748.0	29.71	754.6	44	6.7	84	W	.....	.....	.....	.....	10n	.....	.....	0.60	15.2	Stormy	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	29.59	751.6	36.7	2.6	.....	NW	.....	.....	3	.....	.....	.....	.....	0	0	.....	The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.10	764.5	30.18	766.6	53	11.7	48	N	8	3.6		8c	0	Calm		0	0	Fair	
Alpena, Michigan	29.27	743.4	29.92	760.0	44	6.7	84	SE	21	9.4			10s		Calm	0.60	15.2	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.96	735.6	30.07	763.8	69	20.6	65	S	3	1.3		0	0			0	0	Clear	
Atlantic City, New Jersey	30.15	765.8	30.16	766.1	57	13.9	69	E	14	6.3		0	0			0	0	Clear	
Augusta, Georgia	29.98	761.5	30.18	766.6	67	19.4	84	Calm	0	0		0	Fog		Calm	0	0	Clear	
Baltimore, Maryland	30.12	765.0	30.17	766.3	64	17.8	73	SE	6	2.7		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	30.14	765.5	30.16	766.1	56	13.3	63	E	12	5.4		5ck	0	NW		0	0	Fair	
Bismarck, Dakota	27.98	710.7	29.83	757.7	49	9.4	57	W	6	2.7		10c	0	S		0	0	Cloudy	
Boerne, Texas	28.45	722.6	29.73	755.1	66	18.9	95	SW	4	1.8		5k	0	S		0	0	Fair	
Boise City, Idaho	27.18	689.1	30.09	764.3	43	6.1	79	NW	2	0.9			10s		W	0	0	Cloudy	
Boston, Massachusetts	30.02	762.5	30.17	766.3	50	10.0	45	E	13	5.8		2c	0	Calm		0.01	0.3	Fair	
Brackettville, Texas	28.74	730.0	29.76	755.9	69	20.6	90	E	5	2.2			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.79	731.3	29.77	756.1	53	11.7	67	NW	12	5.4			10n		NW	0.02	0.5	Light rain	
Brownsville, Texas	29.82	757.4	29.86	758.4	78	25.6	78	SE	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.34	745.2	30.04	763.0	51	10.6	65	E	12	5.4			10s		SW	0	0	Cloudy	
Burkes, Arizona					54	12.2	32	NE			1	0	0			0	0	Clear	
Burlington, Vermont	29.89	759.2	30.18	766.6	44	6.7	52	N	7	3.1		0	0			Inap.	Inap.	Clear	
Cairo, Illinois	29.62	752.3	30.00	762.0	75	23.9	64	S	12	5.4		0	0			0	0	Clear	
Campo, California	27.44	697.0	30.01	762.2	37	2.8	81	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.09	764.3	30.10	764.5	69	20.6	80	W	14	6.3		0	Haze			0	0	Hazy	
Cape Henry, Virginia	30.10	764.5	30.11	764.8	64	17.8	63	NE	16	7.2		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.10	764.5	30.12	765.0	68	20.0	90	W	7	3.1		0	Haze		Calm	0	0	Clear	
Cape May, New Jersey	30.13	765.3	30.16	766.1	61	16.1	61	E	13	5.8		0	0			0	0	Clear	
Castroville, Texas	29.10	739.1	29.78	756.4	69	20.6	90	SE	4	1.8			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.07	763.8	30.10	764.5	75	23.9	81	E	7	3.1		5cs	0	Calm		0	0	Fair	
Charleston, South Carolina	30.06	763.5	30.11	764.8	70	21.1	61	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.26	743.2	30.05	763.3	70	21.1	66	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.31	744.5	30.10	764.5	65	18.3	84	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	29	−1.7	45	NW	10	4.5		0	0			0.08	2.0	Clear	
Chicago, Illinois	29.13	739.9	29.78	756.4	70	21.1	66	SW	11	4.9		0	0			0	0	Clear	
Chincoteague, Virginia	30.13	765.3	30.15	765.8	59	15.0	83	NE	22	9.8		0	0			0	0	Clear	
Cincinnati, Ohio	29.42	747.3	30.06	763.5	67	19.4	74	SE	4	1.8		0	0			0	0	Clear	
Cleveland, Ohio	29.26	743.2	29.95	760.7	71	21.7	53	S	10	4.5		1c	0	NW		0	0	Clear	
Coleman City, Texas	28.11	714.0	29.73	755.1	65	18.3	78	S	12	5.4		5ck	0	Calm		0	0	Fair	
Columbus, Ohio	29.20	741.7	30.01	762.2	66	18.9	69	S	4	1.8		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	27.97	710.4	29.58	751.3	67	19.4	84	S	8	3.6			10s		Calm	0	0	Cloudy	
Corsicana, Texas	29.47	748.5	29.92	760.0	66	18.9	59	S	8	3.6		5cs	0	Calm		0	0	Fair	
Davenport, Iowa	29.10	739.1	29.70	754.4	72	22.2	67	S	22	9.8		0	0			0	0	Clear	
Dayton, Washington T'y					44	6.7	67	SW			1		10n		Calm	0.05	1.3	Light rain	
Deadwood, Dakota	25.26	641.6			38	3.3	38	Calm	0	0		8c	0	W		0	0	Fair	
Decatur, Texas	28.76	730.5	29.88	758.9	73	22.8	63	S	12	5.4		5k	0	S		0	0	Fair	
Delaware Breakwater, Del.	30.15	765.8	30.17	766.3	59	15.0	82	E	8	3.6		0	Haze			0	0	Clear	
Denison, Texas	29.11	739.4	29.87	758.7	70	21.1	85	S	10	4.5		5cs	0	SW		0	0	Fair	
Denver, Colorado	24.79	629.6	30.01	762.2	36	2.2	80	S	3	1.3		0	0			0.18	4.6	Clear	
Des Moines, Iowa	28.76	730.5	29.58	751.3	72	22.2	67	SW	6	2.7		0	8s		SW	Inap.	Inap.	Cloudy	
Detroit, Michigan	29.26	743.2	29.92	760.0	58	14.4	76	S	2	0.9		2cs	0	Calm		0	0	Clear	
Dodge City, Kansas	27.18	690.4	29.42	747.3	48	8.9	63	N	40	17.9		0	0			0	0	Clear	
Dubuque, Iowa	28.99	736.3	29.64	752.8	75	23.9	56	S	12	5.4		5c	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.06	738.1	29.74	755.4	40	4.4	91	W	6	2.7			10n		NE	0.19	4.8	Light rain	
Eagle Pass, Texas	29.14	740.1	29.85	758.2	72	22.2	80	SE	4	1.8			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.96	761.0	30.03	762.7	40	4.4	56	W	14	6.3		0	0			0.09	2.3	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.32	744.7	30.02	762.5	54	12.2	74	NE	1	0.4		5k	0	NW		0	0	Fair	
Escanaba, Michigan	29.10	739.1	29.74	755.4	45	7.2	76	E	11	4.9		0	5ks		SW	0.72	18.3	Fair	
Florence, Arizona	28.48	723.4	30.08	764.0	56	13.3	46	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.05	636.3	30.49	774.4	36	2.2	39	E	1	0.4		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.70	703.6	29.51	749.5	42	5.6	34	SW	14	6.3		1c	0	SW		0	0	Clear	
Fort Custer, Montana	26.71	678.4			45	7.2	24	SW	8	3.6		0	0			0	0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765.3	68	20.0	14	W	20	8.9		1cs	0	W		0	0	Clear	
Fort Elliot, Texas	26.81	681.0	28.99	736.3	56	13.3	35	NW	28	12.5		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.32	744.7	29.83	757.7	72	22.2	71	S	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	54	12.2	12	N	6	2.7		0	Haze			0	0	Light haze	
Fort Griffin, Texas	28.59	726.2	29.82	757.4	67	19.4	84	Calm	0	0		0	2s		Calm	0	0	Fair	
Fort Keogh, Montana	27.12	688.8			38	3.3	30	SW	10	4.5		0	0			0	0	Clear	
Fort McKavett, Texas	27.62	701.5	29.47	748.5	66	18.9	79	S	4	1.8			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.62	726.9	29.68	753.9	69	20.6	80	S	16	7.2		10ck	0	SW		0	0	Cloudy	
Fort Stevenson, Dakota	27.92	609.2			45	7.2	76	SW	6	2.7		5k	0	SW		0	0	Fair	
Fort Verde, Arizona					41	5.0	41	NW			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.11	714.0	29.64	752.8	59	15.0	65	S	3	1.3		0	2ks		Calm	0	0	Fair	
Galveston, Texas	29.88	758.9	29.92	760.0	73	22.8	90	SE	4	1.8		0	5ks			0	0	Fair	
Grand Haven, Michigan	29.15	740.4	29.77	756.1	65	18.3	68	S	28	12.5		0	0			0	0	Clear	
Helena, Montana					36	2.2	50	SW	2	0.9		5c	0	SW		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.20	741.7	29.94	760.5	72	22.2	58	SE	4	1.8		0	0			0	0	Clear	
Indianola, Texas	29.90	759.4	29.93	760.2	75	23.9	77	SE	4	1.8		1c	2ks	Calm	SE	0	0	Fair	
Jacksboro, Texas	28.64	727.4	29.72	754.9	70	21.1	75	S	16	7.2		0	0			0	0	Clear	
Jacksonville, Florida	30.09	764.3	30.12	765.0	73	22.8	76	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.11	739.4	29.68	753.9	75	23.9	64	S	18	8.0		1cs	Haze	Calm	Calm	0	0	Clear	
Key West, Florida	30.01	762.2	30.05	763.3	78	25.6	82	SE	9	4.0		8k	0	SE		0.05	1.3	Cloudy	
Kittyhawk, North Carolina	30.09	764.3	30.12	765.0	64	17.8	83	NE	7	3.1		2cs	Haze	NE	Calm	0	0	Fair	
Knoxville, Tennessee	29.13	739.9	30.12	765.0	65	18.3	76	SW	2	0.9		0	0			0	0	Clear	
La Crosse, Wisconsin	28.87	733.3	29.55	750.6	73	22.8	67	W	12	5.4			10s		Calm	0	0	Threatening	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	56	13.3	35	NW	2	0.9		0	5s		Calm	0	0	Fair	
Laredo, Texas	29.50	749.3	29.83	757.7	70	21.1	85	SE	4	1.8			10s		SE	0	0	Cloudy	
Leavenworth, Kansas	28.80	731.5	29.58	751.3	74	23.3	55	S	19	8.5		4cs	2ks	W	S	0	0	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.64	752.8	29.94	760.5	68	20.0	84	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.69	754.1	30.03	762.7	53	11.7	73	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.48	748.3	30.02	762.5	71	21.7	66	S	3	1.3		0	Sm'e			0	0	Clear	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	71	21.7	58	S	1	0.4		0	Sm'e		Calm	0	0	Dense smoke	
Madison, Wisconsin	28.72	729.5	29.65	753.1	70	21.1	70	S	10	4.5		5c	0	W		0	0	Fair	
Marquette, Michigan	29.05	737.9	29.75	755.6	46	7.8	84	SE	8	3.6		5c	0	SE		1.71	43.4	Fair	

UNITED STATES SERIES -CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Mason, Texas	28.27	718.0	29.97	761.2	68	20.0	79	SW	2	0.9	.....	0	5s	.....	SW	0	0	Fair	
Memphis, Tennessee	29.94	752.8	29.97	761.2	71	21.7	71	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.00	736.6	29.68	753.9	70	21.1	66	SW	18	8.0	.....	1cs	Haze	Calm	.....	0	0	Clear	
Mobile, Alabama	30.02	762.5	30.06	763.5	71	21.7	95	SE	5	2.2	.....	0	5s	.....	SE	0	0	Fair	
Montgomery, Alabama	29.87	758 7	30.10	764.5	72	22.2	80	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.09	738.9	30.05	763.3	68	20.0	65	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Mt Washington, N H	23.78	604.0	30.14	765.5	28	— 2.2	44	NW	18	8.0	.....	0	2ks	.....	NW	0.03	0.8	Clear	
Nashville, Tennessee	29.53	750.0	30.05	763.3	72	22.2	67	S	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
New Haven, Connecticut	30.04	763.0	30.16	766.1	54	12.2	55	NE	8	3.6	.....	5cs	0	N	.....	0	0	Fair	
New London, Connecticut	30.10	764.5	30.15	765.8	58	14.4	48	N	6	2.7	.....	1cs	0	W	.....	0	0	Clear	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	74	23.3	81	E	10	4.5	.....	0	1ks	.....	Calm	0	0	Clear	
Newport, Rhode Island	30.09	764.3	30.14	765.5	52	11.1	54	NE	6	2.7	.....	5c;k	0	Calm;NE	.....	0	0	Fair	
New River, North Carolina	.....	.....	.....	.....	69	20.6	71	W	.....	.....	1	Haze	0	Calm	.....	.....	.....	Clear	
New York, New York	29.99	761.7	30.17	766.3	55	12.8	56	E	15	6.7	.....	2cs	2s	NW	Calm	0	0	Fair	
Norfolk, Virginia	30.07	763.8	30.13	765.3	68	20.0	26	E	12	5.4	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.04	686.8	29.63	752.6	41	5.0	91	NW	20	8.9	.....	.....	10n	.....	NW	0.05	1.3	Light rain	
Olympia, Washington Ter	29.92	760.0	29.96	761.0	42.6	5.6	91	S	6	2.7	.....	0	8s	.....	W	0.66	16.8	Cloudy	
Omaha, Nebraska	28.44	722.4	29.47	748.5	65	18.3	63	N	6	2.7	.....	.....	10s	.....	SW	0 01	0.3	Cloudy	
Oswego, New York	29.85	758.2	30.17	766.3	50	10.0	72	Calm	0	0	.....	8cs	0	W	.....	0	0	Fair	
Pembina, Dakota	28.81	731.8	29.63	752.6	46	7.8	77	S	2	0.9	.....	.....	10s	.....	W	0	0	Cloudy	
Pensacola, Florida	30.05	763.3	30.08	764.0	73	22.8	85	SE	7	3.1	.....	9c;k	0	Calm;SE	.....	0	0	Fair	
Philadelphia, Pennsylvania	30.10	764.5	30.16	766.1	59	15.0	54	E	8	3.6	.....	1c	0	Calm	.....	0	0	Clear	
Phœnix, Arizona	28.82	732.0	30.64	778.2	50	10.0	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.54	445.5	29.75	755.6	4	—15.6	100	W	20	8.9	.....	.....	10n	.....	W	0.04	1.0	Light snow	
Pilot Point, Texas	29.15	740.4	29.96	761.0	74	23.3	68	S	16	7.2	.....	8c	0	SW	.....	0	0	Fair	
Pioche, Nevada	24.03	610.4	29.80	756.9	36	2.2	21	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pittsburg, Pennsylvania	29.26	743.2	30.05	763.3	59	15.0	88	Calm	0	0	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Port Huron, Michigan	29.27	743.4	29.92	760.0	54	12.2	61	SE	5	2.2	.....	10cs	0	NW	.....	0	0	Cloudy	
Portland, Maine	30.07	763.8	30.12	765.0	46	7.8	47	N	12	5.4	.....	0	0	.....	.....	0.16	4.1	Clear	
Portland, Oregon	29 97	761.2	30.05	763.3	44.5	6.9	84	SW	6	2.7	.....	Haze	5ks	Calm	W	0.29	7.4	Fair	
Portsmouth, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Prescott, Arizona	24.79	629.6	30.15	765.8	20	— 1.7	45	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	74	23.3	76	E	9	4.0	.....	8cs	0	E	.....	0.09	2.3	Fair	
Red Bluff, California	29.81	757.2	30.17	766.3	56.0	13.3	72	SE	2	0.9	.....	0	5s	.....	W	Inap.	Inap.	Fair	
Rio Grande City, Texas	29.67	753.6	29.88	758.9	74	23.3	90	SE	10	4.5	.....	.....	10s	.....	SE	0	0	Cloudy	
Rochester, New York	29.49	749.0	30.12	765.0	47	8.3	92	SE	5	2.2	.....	.....	10n	.....	Calm	0.30	7.6	Heavy rain	
Roseburg, Oregon	29.58	751.3	30.16	766.1	45.5	7.5	92	S	1	0.4	.....	5k	5ks	W	W	0.24	6.1	Cloudy	
Sacramento, California	30.12	765.0	30.20	767.1	51	10.6	79	SE	6	2.7	.....	0	2s	.....	Calm	0	0	Clear	
St. Louis, Missouri	29.32	744.7	29.87	758.7	67	19.4	64	S	14	6.3	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	28.77	730.7	29.57	751.1	52	11.1	86	NW	8	3.6	.....	2k	5s	NW	W	0.21	5.3	Fair	
Salt Lake City, Utah	25.66	651.8	29.99	761.7	36	2.2	45	SE	4	1.8	.....	2c	0	Calm	.....	0	0	Clear	
San Antonio, Texas	29.24	742.7	29.92	760.0	70	21.1	90	SE	2	0.9	.....	.....	10ks	.....	S	0	0	Cloudy	
San Diego, California	29.96	761.0	30.04	763 0	52	11.1	79	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.31	744.5	29.95	760.7	69	20.6	61	SW	16	7.2	.....	0	Haze	.....	Calm	0	0	Clear	
Sandy Hook, New Jersey	30.13	765.3	30.16	766.1	52	11.1	78	NE	5	2.2	.....	2ck	0	Calm	.....	0	0	Fair	
San Francisco, California	30.20	767.1	30.27	768.8	52	11.1	82	SW	8	3.6	.....	0	1s	.....	NW	0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	36	2.2	53	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	73	22.8	81	S	1	0.4	.....	0	Fog	.....	Calm	0	0	Clear	
Shreveport, Louisiana	29.75	755.6	29.97	761.2	69	20.6	80	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.10	764.5	30.14	765.5	70	21.1	80	W	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Socorro, New Mexico	25.44	646.2	29.50	749.3	46	7.8	26	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Springfield, Illinois	29.22	742.2	29.86	758.4	70	21.1	61	S	15	6.7	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.04	763.0	30.18	766.6	52	11.1	47	NE	10	4.5	.....	5cs	0	N	.....	0	0	Fair	
Stockton, Texas	29.87	682.5	29.87	758.7	66	18.9	89	SW	8	3.6	.....	2cs	0	Calm	.....	0	0	Fair	
Thatcher's Island, Mass	30.11	764.8	30.16	766.1	48	8.9	85	E	25	11.2	.....	2c	0	E	.....	0	0	Fair	
Toledo, Ohio	29.25	742.9	29.91	759.7	69	20.6	70	SW	12	5.4	.....	0	Haze	.....	Calm	0	0	Light haze	
Tucson, Arizona	27.54	699.5	30.09	764.3	67	19.4	17	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.59	751.6	30.09	764.3	47.5	8.6	70	W	22	9.8	.....	0	7ks	.....	W	0	0	Cloudy	
Uvalde, Texas	28.94	735.1	29.73	755.1	71	21.7	90	Calm	0	0	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.78	756.4	30.03	762.7	69	20.6	85	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.13	612.9	29.61	752.1	27	— 2.8	64	Calm	0	0	.....	.....	10s	.....	Calm	0.08	2.0	Cloudy	
Visalia, California	29.78	756.4	30.16	766.1	48	8.9	85	Calm	0	0	.....	0	1s	.....	Calm	0	0	Clear	
Washington, D. C	30.05	763.3	30.16	766.1	64	17.8	53	E	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	51	10.6	34	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.05	763.3	30.12	765.0	73	22.8	67	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	36	2.2	90	SW	12	5.4	.....	.....	10n	.....	SW	0.01	0.3	Light rain	
Wood's Holl, Massachusetts	30.12	765.0	30.15	765.8	48	8.9	49	NE	16	7.2	.....	5c	0	Calm	.....	0.01	0.3	Fair	
Yankton, Dakota	28.48	723.4	29.73	755.1	58	14.4	42	NW	16	7.2	.....	.....	10s	.....	NW	0	0	Cloudy	
Yuma, Arizona	29.81	757.2	29.96	761.0	54	12.2	38	W	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.03	559.6	.....	.....	64.0	17.8	66	Calm	0	0	.....	2k	0	.....	.....	0	0	Fair	Thomas Herran.
Havana, Cuba, W. I	30.02	762.5	30.07	763.8	76	24.4	86	SE	2.4	1.1	.....	8cs	4ks	Calm	SE	0.61	15.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	77	25.0	72	Calm	0	0	.....	5c	2ks	Calm	.....	0	0	Fair	James Gall.
Navassa, W. I	29.97	761.2	30.05	763.3	79	26.1	64	E	7	3.1	.....	2k	5s	.....	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	79	26.1	87	E	.....	.....	2	.....	8ks	E	.....	0.250	6.35	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.40	746.7	29.95	760.7	83	28.3	85	Calm	.....	.....	0	.....	8s	.....	.....	0	0	.....	Francesco J. Cisneros.
Rivas, Nicaragua	.....	.....	.....	.....	75.2	24	.....	ENE	.....	.....	.....	2cs	4d	SW	ENE	0	0	Covered	Carl Flint.
Santiago de Cuba, W. I	30.05	763.3	30.07	763.8	79	26.1	74	Calm	0	0	.....	0	8ks	.....	SE	0	0	.....	Robert Mason
St. Thomas, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A	29.64	752.8	29.69	754.1	22.0	— 5.6	93	SE	14	6.3	.....	.....	9s	.....	SE	0	0	Threatening	J. Fortscue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,383 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,100 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.16 in., or 105.7 mm.; Lake City, 4.33 in., or 110.0 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.08	764.0	74	23.3	86	ESE	6	2.7			8		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.11	764.8	49	9.4	78	NE	7	3.1			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.86	758.4	52.5	11.4	83	E			5		2ks		NE	1.57	39.9			Clearing	
§ Adams, Punta Arenas, Costa Rica	29.95	760.7	81	27.2	87	NE			1		2		NE					Fair	
§ Alaska, Ancon, Peru *	29.97	761.2	62	16.7	94	Calm			0		5					Smooth		Fair	
§ Alert, Yokohama, Japan	29.80	756.9	56	13.3	75	NE			4		5		Calm			Mod'ate	E	Fair	
§ Colorado, New York, N. Y.	30.14	765.5	56	13.3	81	NE	2	0.9			8		N	0	0			Cloudy	
§ Constitution, Hampton Roads, Va.	30.10	764.5	62	16.7	72	E	15	6.7			0							Hazy	
§ Enterprise, Hampton Roads, Va.	30.14	765.5	61	16.1	83	E			2		2		E			Smooth		Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	30.12	765.0	67	19.4	60	ENE	10.8	4.8			2		Calm	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.27	768.8	51	10.6	93	W	3.6	1.6			3		W	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.83	757.7	36	2.2	100	ENE			1		0					Smooth		Clear	
Kearsarge, Boca del Toro, Chiriqui	30.00	762.0	79	26.1	86	WNW			3		10		NW			Smooth		Drizzling	
§ Marion, Off Flores Isl'd, Uruguay	30.06	763.5	58	14.4	82	NW			3		10		NW	0	0	Smooth		Hazy	
§ Michigan, Erie, Pa.	29.95	760.7	58	14.4	82	NE			2		2		NW					Clear	
§ Monocacy, Shanghai, China	29.93	760.2	62	16.7	77	SE			1-2		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	30.08	764.0	71	21.7	90	SW	1	0.4			1		Calm	0	0			Hazy	
Nipsic, N. 38° 34′, E. 0° 56′	29.69	754.1	61	16.1	71	NNW			5		5					Mod'ate	NNW	D. clouds	
§ Onward, Ancon Bay, Peru †	29.96	761.0	63	17.2	89	Calm			0		8					Long	W	Fair	
§ Palos, Shanghai, China	29.93	760.2	61	16.1	82	SSE			2		0							Clear	
§ Passaic, Washington, D. C.	30.14	765.5	63	17.2	67	Calm			0		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.18	766.6	55	12.8	80	WSW			2		1					Smooth		Hazy	
§ Powhatan, Annapolis, Md.	30.13	765.3	63	17.2	67	ESE			2		0							Hazy	
§ Quinnebaug, N. 34° 04′, W. 8° 05′	30.08	764.0	61	16.1	66	NW			4		5		NW			Heavy	NW	Hazy	
§ Richmond, Shanghai, China	29.96	761.0	63	17.2	72	SSE			3		0			0.4	10.			Clear	
§ Rio Bravo, Brownsville, Texas †	30.11	764.8	74	23.3	90	ESE	2	0.9			2		Calm	0	0			Fair	
§ Saratoga, N. 37° 20′, W. 37° 40′	30.43	772.9	66	18.9	74	E			3		2		Calm	0	0	Mod'ate	NE	Fair	
§ Shenandoah, Montevideo, Uruguay	30.05	763.3	57	13.9	75	NNW			3		8		Calm			Smooth		Hazy	
§ St. Louis, League Island, Pa.	30.13	765.3	59	15.0	65	ESE	6	2.7			2			0	0			Clear	
Swatara, N. 5° 16′, E. 98° 55′ †	29.85	758.2	84	28.9	87	NW			1		10		WNW			Smooth		Cloudy	
§ Tennessee, N. 10° 08′, W. 78° 52′	29.95	760.7	79	26.1	86	NE	24	10.7			10		NE	3.5	89.	Light	NE	Cloudy	
Ticonderoga, N. 32° —′, E. 129° 30′	29.97	761.2	59	15.0	100	NNW			2		0					Smooth		Clear	
§ Trenton, Tenedos, Archipelago	29.88	758.9	72	22.2	54	NW			4		2			0	0	Mod'ate	N	Fair	
§ Tuscarora, Mare Island, Cal.	30.24	768.1	52	11.1	66	WSW			2-3		0			0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.10	764.5	54	12.2	74	ENE			3		10		NW					Cloudy	
§ Wabash, Boston, Mass.	30.12	765.0	47	8.3	62	NNE	11	4.9			10?			0	0			Clear	
§ Wachusett, Montevideo, Uruguay	30.03	762.7	56	13.3	100	NW			3		8		NW	0	0	Smooth		Cloudy	
Wyoming, Dardanelles	29.90	759.4	62	16.7	46	ENE			2-3		2		E			Smooth	E	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
Liverpool, Eng	30.08	764.0	56	13.3	87	NW			5		2		NW	0	0			Clear	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 42° 49,' W. 42° 40'...*†	30.36	771.1	63	17.2	100	SSE			5		5		S	0	0	Mod'ate	S	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger, N. 26° 44', W. 114° 38'....†	30.04	763.0	56	13.3	94	NNW			2		2		NW	0	0	Short	WNW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
S. S. Belgic, L. Meyer, N. 28° 07', E. 124° 42'.....†	30.00	762.0	61	16.1	82	S			3		5		SE			Smooth		Fair	D. A. Joyce.
S. S. Gaelic, W. H. Kidley, San Francisco, Cal.....†	30.26	768.6	56	13.3		W			4		6ks			0	0	Smooth			J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, San Pedro, Cal.....†	30.20	767.1	57	13.9		NE			2		0							Clear	
S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
S. S. State of California, G. Debney, N. 40° 26', W. 124° 40'.....†	30.00	762.0	48	8.9		SW			3		8		SW			Light	W	Light rain	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 36° 12′, W. 122° 07′....†	30.22	767.6	58	14.4	94	NNW			4		8		NW			Heavy	NNW	Cloudy	F. A. Johnston.
§ S. S. Australia, S. 33° 12′, E. 159° 29′....	30.10	764.5				N			4		2					Mod'ate	NW	Clear	Banneman.
§ S. S. China, W. B. Seabury. N. 14° 40′, W. 93° 30′.....†	29.88	758.9	81	27.2	91	E			1		10					Heavy	SW	Cloudy	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of Panama, M. Connolly. N. 16° 04′, W. 98° 32′.....†	29.95	760.7	82	27.8		WNW			2		2		W	0	0	Mod'ate	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 37° 00′, W. 135° 20′.....†	30.40	772.1	56	13.3	87	W			4		5		WSW			Mod'ate	W	Fair	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	30.13	765.3	66	18.9		E			3		10		NE	0	0	Smooth		Hazy	E. LeSack.
§ S.S. City of Tokio, J. Maury Yokohama, Japan.....†	30.14	765.5	66	18.9	79	WSW			2		5?		WSW	0	0			Cloudy?	F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama.....	29.95	760.7	80	26.7	96	N			5		5		N	0	0			Fair	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J M Cavarly S. S. Idaho, Nanaimo, Vancouver I'd†	30.29	769.4				SW			1		2		W	0	0	Smooth		Fair	
§ S.S. Zealandia, R. C. Ghest, N. 11° 17′, W. 161° 12′.....	29.88	758.9				E			4				E			High	E	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 44° 26′, W. 36° 08′.....†	30.45	773.4	56	13.3		E			1		0			0	0	Smooth		Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 40° 31′, W. 68° 48′..... †	29.85	758.2	48	8.9		NE			3		1		NE	0	0	Smooth		Blue sky	W. S. Waugh.
S. S. Britanic, H. Perry, N. 49° 21′, W. 27° 02′.....†	30.51	774.9	49	9.4	??	NW			4				WNW	0	0	Mod'ate	WNW	Very fine	J. Jones.
S. S. Celtic, B. Glendell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr Addie Fuller, J. Jorgensen, Off Gay Head, Mass	30.14	765.5	49	9.4	57	NE	10	4.5			0			0	0	Smooth		Fair	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 39° 51′, W. 73° 01′.....†	30.07	763.8	59	15.0		NE			1		0			0	0	Mod'ate	SE	Clear	J. Jorgensen L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 50′, E. 47° 42′.....*†	30.28	769.1	72	22.2		S					10	W	S	0	0	Rough	S	Fair	B. F. Woodbury.
Brigantine George, W. H Champlin, N. 18° 30′, W. 64° 55′, ...†	30.24	768.1	82	27.8		ESE			5		1		ESE	0	0	Mod'ate	SE	Clear	
Hippolyta, N. 48° 36′, W. 21° 02′.....*	30.07	763.8	57	13.9		NW			6		10		N	Showers.	Showers.	Mod'ate	NW	Cloudy	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 8, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.16	766.0				NE			3		2			0	0	Fair	Dr. Ollive.
Nemours			29.98	761.5	70.3	21.3	71	WNW			3		2			0	0	Fair	Metge.
Algiers			29.82	757.5	61.5	16.4	91	SSW			3		10			0.409	10.4	Covered	Nicolas.
La Galle			29.73	755.2	59.5	15.3	93	NNW			6		10			0.866	22.0	Covered	Fonfrède.
Tunis			29.67	753.5															Jacques.
Sfax			29.84	757.9															Gau.
Saida			29.98	761.6															Bernard.
Tebessa			29.84	757.8	56.7	13.7	52	WNW			7		8			0	0	Very cloudy	Watrin.
Geriville					54.0	12.2	43	WNW			2		5			0.083	2.1	Cloudy	Brugniaux.
Laghouat			29.91	759.7	67.3	19.6	21	NW			4		6			Inap.	Inap.	Cloudy	Suart.
Biskra			29.82	757.4	73.8	23.2	59	NW			5		7			Inap.	Inap.	Very cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.00	736.6	29.53	750.1	64.0	17.8	62	N			5		10			1.917	48.7		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.02	737.1	29.76	755.9	67.6	19.8	61	NNW	5.8	2.6			8			0.079	2.0		Dr. Wierzbicki.
Eperies	28.80	731.6	29.65	753.0	68.9	20.5	63	N			1		5cs;s			0	0		Julius Mikolik.
Gratz	28.39	721.2	29.60	751.6	62.2	16.8	68	SE			4		7			0.327	8.3		Andreas Rospini.
Hermannstadt	28.26	717.7	29.62	752.3	70.3	21.3	34	SSE			6		5			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.43	722.1	29.79	756.6	43.7	6.5	96	WSW			2		10			0.110	2.8		The Staff.
Lemberg	28.76	730.4	29.71	754.5	68.0	20.0	43	S			3		4			0	0		Dr. T. Stanecki.
Pola	29.35	745.6	29.47	748.4	66.2	19.0	63	ESE			4		5			0.630	16.0		I.R. Hydrographic Office.
Szathmar	29.23	742.5	29.67	753.7	75.6	24.2	31	E			2		6			0	0		Pet. Pancsics, S. J.
Szegedin	29.34	745.2	29.61	752.0	69.1	20.6	68	SE			4		5			0	0		Karl Stancel.
Trieste	29.41	747.1	29.52	749.7	64.6	18.1	65	NE			2		4			0.067	1.7		P. Busin.
Vienna	28.99	736.4	29.72	755.0	51.4	10.8	90	W			3		10			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.12	765.0	30.22	767.6	45.6	7.6		NW	15	6.7			9			0	0	Overcast	W. Boswell.
Ardrossan	30.16	766.1	30.18	766.6	54	12.2		WNW			3		0					Blue sky	G. Carrick.
Armagh, (Observatory)	29.95	760.7	30.19	766.8	54.6	12.6		ENE	6	2.7			3					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.14	765.5	52.7	11.5		E	7	3.1			10					Overcast	John Hartnup.
Bolton (Sharples)	29.58	751.3	30.10	764.5	52.8	11.6		N					5					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.76	755.9	30.15	765.8	53.9	12.2	70	SE			1		7			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.95	760.7	29.98	761.5	82	27.8		NE			3		3					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	30.03	762.7	30.12	765.0	56.5	13.6		N			1		5					D. clouds	H. Todd.
Cardington			30.10	764.5	54.0	12.2		NE			0–1		5					D. clouds	John McLaren.
Chatham (School M. E.)	30.00	762.0	30.13	765.3	51.1	10.6		E			1		8					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.17	766.3	30.21	767.3	53	11.7		NE			2		0					Blue sky	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	50	10.0		ENE			4		3					¾ clouded	J. Costello.
Falmouth (Observatory)	29.88	758.9	30.12	765.0	53.0	11.7		SSE			2		1					D. clouds	The Staff.
Fort Napier, Natal	27.82	706.6	30.02	762.5	78.8	26.0		E			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.82	757.4	30.04	763.0	87	30.6		SW			1		8					Drizzling	
Galway (Queen's College)			30.07	763.8	57	13.9		NE			1		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.92	760.0	29.98	761.5	67.4	19.7		W			5		1					Blue sky	Sgt. W. Allen.
Glasgow, (Observatory)	29.96	761.0	30.16	766.1	55.3	12.9		NE			1		2					Blue sky	D. G. Maclean.
Great Yarmouth	30.13	765.3	30.13	765.3	50	10.0		NNE			3		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.96	761.0	30.13	765.3	53.8	12.1		NE			3		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.88	758.9	30.10	764.5	52	11.1		ESE			2		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.27	768.8	30.39	771.9	60	15.6		E			6	2ck				0	0	Fine	M. P. Moyle.
Holyhead	30.10	764.5	30.14	765.5	52	11.1		NE			3		0					Blue sky	John Tilston.
Jersey	29.84	757.9	30.14	765.5	50.0	10.0		SW			1		9					Gloomy	J. Fisher.
Kew (Observatory)	30.10	764.5	30.14	765.5	52.2	11.2		NNE	12	5.4			7					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.88	758.9	30.13	765.3	54.2	12.3		NE			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.50	749.3	29.57	751.1	70	21.1		SW			3		2					Blue sky	A. King.
Nairn	30.14	765.5	30.23	767.8	48	8.9		ENE			2		2					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.03	762.7	77.2	25.1		E			3		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.98	761.5	30.17	766.3	59.2	15.1		ENE			3		5k		NNE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.60	751.8	30.13	765.3	53.3	11.8		ENE			2		7					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.90	759.4	30.16	766.1	53	11.7		E			1		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	30.03	762.7	30.10	764.5	53.1	11.7		SW			2		10					Overcast	John Merrifield.
*Roche's Point	30.03	762.7	30.14	765.5	56	13.3		SE			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.94	760.5	30.11	764.8	52	11.1		SE			1		7					D. clouds	John O. Walker.
Sandwick Manse, Orkneys			30.24	768.1	45.2	7.3		NW	21	9.4			8					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.73	755.1	29.79	756.7	66.0	18.9		NE			2		6			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	29.89	759.2	30.17	766.3	54.9	12.7		NE			1		4			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.12	765.0	30.16	766.1	58.2	14.6	49	E			1		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.16	766.1	54.5	12.5		NE	4	1.8			6					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.92	760.0	30.13	765.3	55.2	12.9		E			2		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.08	764.0	30.11	764.8	58	14.4		SE			4		8					Gloomy	W. Newcombe.
Valencia Observatory)	30.03	762.7	30.05	763.3	54.2	12.3		ENE	22	9.8			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.13	765.3	30.17	766.3	68.0	20.0	72	SSE	15.1	6.8		6	6			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.93	760.2	43.0	6.1	74	S			2		10kn			0.50	12.7	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.21	767.3	50.0	10.0		E			4					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.86	758.4	30.05	763.4	73.6	23.1	63	SE	15.5	6.9		0	2		SE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.89	759.2	29.98	761.5	47.0	8.3	79	NW	13	5.8			5			0.46	11.7	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.20	767.1	50	10.0		N			4	3	0	N		0	0		J. Youngclause.
North Unst, Shetland I's			30.20	767.1				NW			4	3	7	N		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 48° 12′, W. 9° 40′			Showery	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0	29.94	760.5	70.2	21.2	77	SE			2	3cs				0	0	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.81	757.2	29.86	758.4	49.8	9.9	51	ESE			2		8						
Fanöe	29.91	759.6	29.93	760.1	48.0	8.9	53	WNW			6		3						
Godthaab (Greenland)																		Raining	
Stykkisholm (Iceland)	30.02	762.5	30.07	763.6	42.1	5.6	82	W			6		2						
Thorshavn (Faröe)	30.21	767.4	30.25	768.3	44.2	6.8	74	NW			2		2						
Vestervig	29.80	756.9	29.89	759.3	48.0	8.9	58	NNW			4		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.54	750.3	30.09	764.3	50.9	10.5	58	NE			4		5kn		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.98	761.6	30.10	764.5	51.1	10.6	95	N			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.82	757.5	30.08	764.1	48.7	9.3	47	NNE			2		9k		ENE	0	0		Klein, Commandant.
Avignon, Normal School	29.60	751.8	29.68	753.8	57.2	14	47	N			7		2n		N	0	0		Giraud, Director.
Bar-sur-Seine	29.44	747.8	30.00	762.0	50.4	10.2	47	NE			2		8kn		NE	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.81	757.2	30.08	764.0	50.2	10.1	49	NE			2		10			0	0	Covered	Frère Eugene Marie.
Besançon, Normal School	29.03	737.4	29.93	760.1	48.0	8.9	72	E			2		10		NE	0	0	Covered	A. Carré, Director.
Bordeaux	29.74	755.5	29.94	760.5	58.6	14.8	33	NNE			1		2	S	NNW	0	0	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.02	737.1	29.93	760.3	45.3	7.4	80	N			4		10n	N	N	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.46	748.3	30.02	762.5	50.4	10.2	52	N			3		5n		NE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.83	757.6	30.07	763.9	59.4	15.2	53	SSW			1		4		SE	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.96	761.0	30.03	762.8	52.7	11.5	68	NE			2		0			0	0	Clear.	M. Bietrix, Director.
Carcassonne, N. School	29.53	750.0	29.94	760.4	57.2	14	58	W			3		5		W	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.73	755.1	30.05	763.2	50.4	10.2	64	NE			3		8		NE	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.46	748.3	30.04	762.9	49.8	9.8	93	NE			2		9		SW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.55	725.2	29.91	759.7	48.9	9.4	43	NNW			2		8		N	0	0		Allnard, Director.
Commercy, Normal School	29.12	739.7	30.00	761.9	47.8	8.8	46	NE			4		kn	NE	NE	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.50	723.9	29.64	752.9	55.4	13	52	NW			4		2		NW	1.024	26.0		L. Kina, Director.
Grenoble, Normal School	29.08	738.6	29.85	758.3	49.0	9.8	72	NNE			1		kn		SW	0.35	9.		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.85	758.1	30.07	763.6	55.0	12.8	43	N			1		5		NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.77	756.1	30.08	764.0	52.2	11.2	43	NE			4		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.97	735.8	29.86	758.5	42.8	6	85	NE			2		5n		SW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.99	761.7	30.10	764.5	57.6	14.2	48	ESE			3		5		SE	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.26	743.2	29.89	759.2	44.6	7.0	88	N			3		10		N			Raining	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.27	743.5	29.54	750.3	56.5	13.6	51	N			6		1		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.92	734.5	29.98	761.4	46.0	7.8	59	NE			4		n		NE	0.47	12.		Barbier, Director.
Mont-Louis	24.61	625.0	29.84	758.0	42.8	6.0	42	WSW	9.4	4.2			2		W	0.240	6.1		M. Cave, for Dr. Fines.
Nice	29.41	747.1	29.45	748.0	65.5	18.6	68	E			4		2	W	E	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.51	749.6	29.71	754.7	59.5	15.3	21	NW			6		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.69	754.0	29.79	756.7	59.2	15.1	25	NW	29.8	13.3			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.35	567.6			32.0	0.0							1	S	N	0.984	25.0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.73	729.6	29.79	756.6	51.4	10.8	50	N			4		5ks	N	N	0	0	Cloudy	M. Taillen
Puy de Dome (Summit) Obs	24.06	634.0			28.9	— 1.7	78	NNE			4		8		NNE	0	0		Allnard, Director.
Rochefort, Naval Obs'y	30.01	762.2	30.04	763.0	65.3	18.5	35	E			1		8	E	E	0	0	¾ covered	Lt. E. Derante, Director
Rouen, Normal School	30.00	761.9	30.08	764.1	52.5	11.4	47	NE			1		8		NE	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.07	763.6	30.09	764.3	52.9	11.6	57	NNE			2		5	NNE	NNE	0	0	Misty	Lt. Hercouet, Director
Saint Maur (near Paris)	29.90	759.5	30.07	763.7	48.6	9.2	46	N			2		10		NNE	0	0	½ covered	E. Renou, Director.
Tarbes, Normal School	28.91	734.3	29.98	761.6	51.8	11	75	NW			1								T. Huguet, Director
Toulouse, Observatory	29.24	742.8	29.97	761.2	54.9	12.7	73	NW			4		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.84	758.0	30.04	763.0	53.6	12.0	43	NE			2		5		NE	0	0	½ covered	M. de Tastes.
Versailles, Observatory	29.58	751.2	30.07	763.6	48.2	9.0	40	NE			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.22	742.1	29.94	760.5	47.3	8.5	65	NNW			4		8			0.098	2.5	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.22	767.5	30.24	768.2	78.8	26										0.08	2.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.79	756.6			48.4	9.1	47	NNE			2		10		NNE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.71	754.6	29.74	755.3	68.2	20.1	84	SSE	14.3	6.4			10			0	0	Covered	Marc Decheyrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,264.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.06	38.0	29.91	759.8	47.5	8.6	59	NE			8		8ks	NE		0	0		Prof. Dr. Hoh.
Berlin	29.80	756 8	29.97	761.2	54.1	12.3	39	NW			1		9			0.008	0.2		Prof. Dr. Arndt.
Breslau	29.39	746.5	29.92	759.9	43.9	6.6	94	NNE			3		10			0.287	7.29	Raining	Royal University Obs'y
Carlsruhe	29.51	749.5	29.94	760.4	48.7	9.3	65	NE			3		10	NE		0	0	Hazy	Albert Senz.
Cassel	29.36	746.7	29.97	761.1	50.2	10.1	40	N			5		8			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.65	753.0	30.01	762.3	54.5	12.5	20	NE			4		7			0	0		Physical Society.
Friedrichshafen	28.44	722.3	29.91	759.6	41.4	5.2	89	NE			5		10	NE		0.236	6.0	Light rain	Chief Telegrapher Wilhelm.
Hamburg	29.91	759.6	29.98	761.4	49.5	9.7	70	NW			4		8			0.020	0.5		Dr. Reinhold Kleeman.
Kiel	29.92	760.0	29.94	760.4	50.0	10.0	56	W					8			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.83	757.7	29.91	759.8	53.6	12.0	46	N			2		9	N		0	0		Prof. E. Luther.
Köslin			29.90	759.5	55.4	13.0		NW			2		2			0	0		H. Müller.
Leipsic Observatory	29 55	750.5	29.97	761.3	50.4	10.2	49	N			2		9	N		0.028	0.7		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.74	755.5	29.97	761.3	52.5	11.4	55	NW			5		8ks	NW		0	0		Dr. Assmann.
Memel	29.86	758.4	29.91	759 6	50.2	10.1	60	WNW			2		8cs						Reinbrecht & Issermann.
Munich	28.01	711.4	29.86	758.4	40.5	4.7	87	NW			4		10			0.996	25.3	Heavy rain	Dr. C. Lang.
Neufahrwasser	29.91	759.8	29.93	760.2	50.0	10.0	60	NNE			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.42	747.2	29.95	760.6	49.8	9.9	46	NE			4		10			0	0		Reallehrer Dicknether.
Posen	29.67	753.5	29.96	760.9	48.9	9.4	55	E			4		10			0.016	0.4		Prof. Dr. Magener.
Strassburg (in Alsace)	29.43	747.5	29.99	761.7	48.0	8.9	49	NNW			4		10	NNE		0.420	10.78		Imp. University Observatory.
Stuttgart	28.95	735.4	29.86	758.4	47.3	8.5	59	N					10			0.067	1.7	Raining	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.39	721.0	29.96	760.9	42.8	6.0	90	N	4.7	2.1			10		N	0.236	6.0	Raining	Reallehrer J. Hopfner.
Wustrow	29.93	760.1	29.95	760.7	49.6	9.8	64	SW			3		3k			0.059	1.5		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.37	746.0	29.76	755.8	68.5	20.3		SE			2.0		5					⅛ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.70	754.3	29.75	755.6	84.1	28.9	71	SW	4.7	2.1			3	W		0	0	D. clouds	
Deesa	29.19	741.4	29.64	752.9	100.6	38.1	24	WSW	17.3	7.7			2	NW		0	0	Misty	
Bombay	29.79	756.7	29.83	757.6	85.1	29.5	72	WNW	17	7.6			0			0	0	Blue sky	
Poona (Yarrowda)	27.95	709.8	29.76	755.8	90.8	32.7	23	W	24	10.7			0			0	0	Blue sky	
Belgaum	27.28	692.9	29.78	756.3	83.8	28.8	49	WSW	10	4.5			0			0	0	Misty	
Lahore	28.84	732.6	29.55	750.6	102.0	38.9	21	W	3.0	1.3			3			0	0	Misty	
Roorkee	28.70	729.1	29 57	751.0	95.9	35.5	35	S	6	2.7			3			0	0	Misty	
Agra	29.03	737.2	29.56	750.8	104.6	40.3	19	S	6.1	2.7			4		S	0	0		
Nagpur	28.61	726.7	29.60	751.9	103.5	39.7	18	NNW	6.4	2.9			3	W		0	0	D. clouds	
Jubbulpore	28.31	719.0	29.61	752.2	100.7	38.2	12	W	6.6	3.0			4			0	0	D. clouds	
Lucknow	29.27	743.5	29.64	752.8	96.0	35.6	41	ENE	3.2	1.4			0			0	0	Blue sky	
Allahabad	29.29	744.0	29.59	751.6	99.5	37.5	33	E	2.9	1.3			2			0	0	D. clouds	
Patna	29.49	749.0	29.67	753.5	83.5	28.6	60	E	3.0	1.3			10	E	E	0.31	8.1	Overcast	
Hazaribagh	27.67	702.9	29.66	753.3	82.3	27.9	58	SE	9.2	4.1			2					Thunder-storm	
Cuttack	29.65	753.1	29.73	755.2	87.1	30.6	71	Calm	3.0	1.3			9			0.49	12.4	Threatening	
Calcutta (Alipore)	29.67	753.6	29.69	754.2	86.8	30.4	58	ESE	2.0	0.9			9	SW		0	0	D. clouds	
Goalpara	29.33	744.9	29.73	755.2	80.7	27.1	69	Calm	5.6	2.5			6		SE	0	0	D. clouds	
Chittagong	29.66	753.3	29.75	755.6	79.9	26.6	84	SE	4.2	1.9			5			0	0	D. clouds	
Sibsagar	29.46	748.2	29.79	756.8	80.7	27.1	75	ENE	2.4	1.1			0			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.16	740.6	29.56	750.9	64.8	18.2	56	E	6.3	2.8			10			0.402	10.2		Prof. Giovanni Clodig.
Milan	28.98	736.2	29.50	749.3	54.5	12.5	82	WNW	9.4	4.2			10	W		0.437	11.1		Prof. Schiaparelli.
Padua	29.41	747.1	29.52	749.8	63.9	17.7	69	E	18.1	8.1			9	NE		0.307	7.8		Prof. Dott. Lorenzoni.
Moncalieri	28.65	727.8	29.56	750.7	53.6	12.0	90	E	4.9	2.2			10			0.598	15.2		Prof. P. F. Denza.
Genoa	29.26	743.2	29.45	748.0	56.8	13.8	74	N	8.7	3.9			10	SE		0.166	4.2		Prof. G. M. Garibaldi.
Mondovi	27.65	702.3	29.55	750.6	50.0	10.0	91	W			4		10			0.358	9.1		Prof. D. C. Bruno.
Pesaro	29.39	746.6	29.44	747.8	62.6	17.0	66	E	9.8	4.4			8	SSE		0.406	10.3		Prof. Luigi Guidi.
Florence	29.19	741.4	29.45	747.9	59.0	15.0	87	SE			2		10			0.980	24.9		Cav. F. Meucci.
Leghorn	29.34	745.2	29.42	747.3	58.8	14.9	86	S	3.8	1.7			10	NE		1.205	30.6		Prof. P. Monte.
Rome	29.32	744.6	29.49	749.0	59.0	15.0	77	W	18.6	8.3			10			0.953	24.2		Prof. P. S. Ferrari
Lecce	29.33	744.9	29.58	751.2	68.4	20.2	52	SE	46.5	20.8			5	SE		0	0		Prof. C. De Giorgi.
Cosenza	28.63	727.3	29.51	749.5	73.0	22.8	76	SE	3.8	1.7			9			0.122	3.1		Prof. D. Conti.
Cagliari	29.30	744.2	29.49	749.0	66.6	19.2	54	NW			4		7	NW		0	0		Prof. A. Pacinotti.
Palermo	29.26	743.1	29.50	749.4	56.1	13.4	94	NNE	3.1	1.4			10			0.390	9.9		Prof. G. Ciacciatore.
Syracuse	29.48	748.7	29.52	749.8	69.8	21.0	58	S	13.7	6.1			8	S		0.012	0.3		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.00	736.5	29.50	749.4	60.8	16.0	79	WSW	0	0			8	W		0.244	6.2		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.7	17.1	73	WSW	4.8	2.1			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.86	758.4	30.06	763.5	64.3	17.9	75	SSW	2.6	1.2			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.96	761.0	30.03	762.7	56.4	13.6	80	SSW	5.8	2.6		0	0			0	0	Clear	The Staff.
Wakayama	30.01	762.2	30.06	763.5	67.7	19.8	69	S	9.4	4.2			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima											0	1cs	0			0	0		R. Banda, C. E.
Guadalajara	25.02	635.6	30.06	763.6	54.5	12.5	35	Calm			0	1cs	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.67	601.3			61.3	16.3	46	Calm	0	0		2s;k	0	SW		0	0	Clear.	Vicente Fernandez.
Leon	24.41	620.0	30.04	762.9	63.1	17.3	60	N			2	2c	1k	SW		0	0	Hazy	Prof. M. Leal.
Mazatlan	29.69	754.0	29.95	760.6	68.8	20.4	100	NE			1	5ck	0	NW		0	0	Foggy	F. Quijano, C. E.
Mexico, Central Observatory	23.07	586.0	30.04	763.1	55.4	13.0	68	Calm	0	0		0	0			0	0	Hazy	The Staff
Morelia	24.00†	609.7†			66.9	19.4	45	SE			4	2c	6ck	E	SE	0	0	Cloudy	M. Fena, M. D.
Pabellon (Aguascalientes)	23.94	608.1	29.91	759.7	60.6	15.9	41	Calm			0	5k	0	SW		0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.5	30.27	768.8	50.0	10.0	47	Calm	0	0		1s	0	E		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.3	30.08	764.0	66.6	19.2	63	SE			1	3	0	W		0	0	Hazy	G. Barroeta, M. D.
Tacotalpam	29.84	757.8	29.85	758.1	80.6	27.0	77	SE			2	4	2	S	W	0	0	Hazy	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.58	573.5	30.16	766.0	56.7	13.7	40	Calm			0	2ck	0	SW		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.11	764.7	30.11	764.7	50.4	10.2		NNW			4					0.039	1.0		
Groningen	30.00	762.0	30.06	763.4	48.6	9.2		N								0.035	0.9		
Helder	30.08	764.1	30.08	764.1	46.2	7.9		NNW			4					0	0		
Hellevoetsluis	30.08	763.9	30.08	763.9	52.0	11.1	59	NNW			3					0.059	1.5		
Utrecht	30.02	762.6	30.07	763.8	53.2	11.8	37	N			3		5			0.012	0.3	Cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.90	759.5	29.96	760.9	46.4	8.0	57	NNW	21.5	9.6			1			0	0		
Brönö	29.75	755.6	29.79	756.6	43.5	6.4	71	NNW	18	8			2			0.110	2.8		
Christiania	29.66	753.4	29.81	757.1	53.2	11.8	22	NNE	11	5			4			0	0		
Tromsö	29.71	754.6	29.76	756.0	35.2	1.8	67	NE	7	3			10			0.059	1.5		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.25	768.4	30.46	773.7	63.5	17.5	73	ENE			2		2			0	0		Dr. J. A. Sampaio.
Campo Major	28.97	735.8	29.99	761.8	65.1	18.4	39	N	4.9	2.2			5			0	0		Dr. A. M. R. dos Santos
Funchal (Madeira)	30.13	765.3	30.22	767.5	64.0	17.8	51	SW	8.7	3.9			7			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.70	754.3	30.06	763.4	60.6	15.9	55	NNW	18.1	8.1			3			0	0		The Staff.
Ponta Delgada (Azores)	30.33	770.4	30.40	772.2	62.6	17.0	44	NE	4.9	2.2			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela			29.91	759.8	77.0	25.0		W			1		1		W	1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.24	768.0	77.0	25.0		NE			2		2		NE	1	SE		D clouds	Antonio Sarmento, Q.M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.94	760.4	76.6	24.8		WNW			2		2		W	1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.00	762.0	85.1	29.5		SSE			2		2		ESE	1			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.61	752.2	29.63	752.7	47.1	8.4	92	SSW	9	4			10						Capt. Sselliwerstow.
Astrakhan	30.09	764.3	30.01	762.2	67.3	19.6	34	ESE	7	3			10s						Capt. Wisganow.
Barnaul	29.33	744.9	29.84	757.9	34.2	1.2	73	SW	4	2			10						Meteorological Obs.
Dorpat	29.65	753.2	29.90	759.4	50.9	10.5	52	WSW	7	3			10n						Prof. Dr. Weihrauch.
Ekaterinburg	29.17	740.8	30.11	764.9	60.1	15.6	55	NW	4	2		ck	5ks						Meteorological Obs.
Irkutsk																			
Kasan	29.89	759.2	30.15	765.9	71.1	21.7	33	W	2	1			7						Physical Cabinet.
Kertch	29.96	761.0	29.98	761.5	55.0	12.8	98	SSE	2	1			5						Lagorio.
Kieff	29.28	743.7	29.89	759.3	67.8	19.9	35	SE	11	5		c;ck	7ks						Physical Cabinet.
Krotkowo*	29.74	755.4	30.20	767.0	72.3	22.4	30	WSW	4	2			9						Cand. Fatjanow.
Lugan	29.74	755.4	29.94	760.5	61.7	16.5	38	ESE	9	4			6			Blank	Blank		Meteorological Obs.
Moscow	29.52	749.9	30.06	763.4	69.1	20.6	25	S	4	2			3ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.88	758.9	29.95	760.7	65.5	18.6	55	E	13	6			9kn						Kurdakof.
Nikolaievsk, on the Amoor																			
Nukuss	29.69	754.0	29.91	759.7	77.0	25.0	31	NNE	13	6			1ks						
Orenburg																			
Pekin (China)	29.34	745.3	29.48	748.9	75.6	24.2	52	SE	13	6			7n					Thunder-storm.	Physical Observatory.
St. Petersburg	29.84	757.9	29.85	758.3	48.9	9.4	67	WNW	18	8		c;ck	3s						Central Physical Obs.
Tashkend	28.35	720.0	29.85	758.1	77.0	25	55	N	7	3			1						Teich, A. M.
Tiflis	28.53	724.7	29.93	760.2	61.7	16.5	75	Calm	0	0			10						Physical Observatory.
Vladivostock																			
Warsaw	29.43	747.6	29.86	758.4	46.8	8.2	79	NNE	13	6			10ks						Astronomical Obs.
Wilna	29.48	748.7	29.91	759.6	43.7	6.5	93	N	7	3			10					Raining	Astronomical Obs.
Yeniseisk	29.45	748.0	29.74	755.3	35.6	2.0	82	SSW	4	2			10					Snowing	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.62	752.3	29.72	755.0	66.2	19	48	S	2.2	0.97			0			0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.00	761.9	30.05	763.3	64.2	17.9	58	NW	5.8	2.59		2	3	E		0.071	1.8	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.02	686.3			50.9	10.5	51	N	21.4	9.58			4			0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.69	703.4	29.89	759.3	61.3	16.3	53	S	5.2	2.33		1	1	S		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.67	753.6	29.82	757.4	71.6	22.0	46	NW	6.8	3.03		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.11	739.3	30.00	762.0	58.3	14.6	57	N	2.5	1.1			4			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.91	759.8	29.98	761.5	76.3	24.6	82	Calm	0	0		8c;ck	1k	W	SE	0.327	8.3	Fair	Benito Vines, S. J.
Manilla, Phillippine Islands	29.87	758.7	29.92	760.0	85.1	29.5	56	ESE	5.9	2.7						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.93	760.2	30.03	762.7	62.4	16.9	78	WSW	9.1	4.1		0	0		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I	29.97	761.2	30.06	763.5	77.0	25.0	92	SE	3.6	1.63		6ks	4kn	SE	SE	0.236	6.00	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.50	749.3	29.54	750.3	33.1	0.6	.....	N	.....	.....	4	.....	10	.....	.....	.....	.....	Snowing	
Umea	29.65	753.1	29.70	754.4	37.8	3.2	97	N	.....	.....	2	.....	10	.....	.....	0.138	3.5	Rain & snow	
Hernosand	29.69	754.0	29.74	755.3	50.0	10.0	48	NNE	.....	.....	6	.....	7	.....	.....	0.094	2.4	.....	
Stockholm	29.63	752.7	29.81	757.2	46.0	7.8	69	SW	.....	.....	2	.....	9	.....	.....	0.039	1.0	.....	
Visby	29.76	755.8	29.82	757.3	47.8	8.8	66	WNW	.....	.....	6	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.65	753.2	29.74	755.4	49.8	9.9	63	WNW	5.6	2.5	.....	.....	10	.....	.....	0 045	1.15	.....	Nils Ekholm.

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

SWEDISH NAVAL SERIES.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	0-10.	0-10.	From—	From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 44° 44′, W. 13° 29′	.....	.....	30.12	765.0	52.9	11.6	69	NNW	.....	.....	5	.....	5	.....	.....	.....	.....	.....	Squally	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	0-10.	0-10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Geneva	28.37	720.7	29.84	757.8	43.3	6.3	73	NNE	.....	.....	8	.....	10	.....	.....	0.016	0.4	Raining	The Observatory.
Zurich	28.25	717.6	29.94	760.4	39.9	4.4	92	E	.....	.....	2	.....	10	.....	.....	0.366	9.3	Raining	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —4.0 mm.; Thermometer, —0 1 Cent. Relative Humidity, +15 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	0-10.	0-10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.85	758.1	61.2	16.2	58	NE	17	7.5	.....	.....	5	.....	SW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29 69	754.2	66.7	19.3	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.94	760.5	70.2	21.2	69	W	.....	.....	2	.....	1k	.....	SE	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	0-10.	0-10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	36.8	2.7	.....	NW	5	2.2	.....	2ck	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	30.11	764.8	30.18	766.6	39.9	4.4	91	NW	10	4.5	.....	1c	0	W	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.13	765.3	30.17	766.3	36.0	2.2	58	N	8	3.6	.....	0	1s	.....	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.80	756.9	29.99	761.7	47.9	8.8	77	NE	.....	.....	2	.....	10s	.....	.....	0.019	0.48	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.01	762.2	30.18	766.6	35.0	1.7	.....	W	.....	.....	1	0	0	.....	.....	0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.32	770.1	30.34	770.6	35.9	2.2	80	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.17	766.3	30.24	768.1	42.4	5.8	34	W	2	0.9	.....	1c	0	NW	.....	0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	28.75	730.2	29.56	750.8	48.0	8.9	67	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	28.82	732.0	29.89	759.2	62.0	16.7	83	SE	.....	.....	1	2c	0	SE	.....	0	0	Clear	James Grant.
Halifax, N. S.	30.09	764.3	30.23	767.8	39.9	4.4	48	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	A. Allison.
Hamilton, Ontario	29.55	750.6	29.93	760.2	45.7	7.6	95	NE	.....	.....	1	5ck	0	NE	.....	0.24	6.1	Fair	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.65	753.1	29.98	761.5	56.5	13.6	82	N	3	1.3	.....	4k	0	SW	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	30.04	763.0	30.08	764.0	35.0	1.7	66	NW	8	3.6	.....	4k	0	NW	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.88	758.9	30.08	764.0	46.0	7.8	76	NE	10	4.5	.....	.....	10n	.....	.....	0.01	0.3	Raining	C. H. McLeod, C. E
Moose Factory, Ontario	29.71	754.6	29.74	755.4	35.5	1.9	92	SE	.....	.....	4	.....	10n	.....	.....	0.40	10.2	Cloudy	J. R. Nason.
Norwood, Ontario	29.24	742.7	29.93	760.2	54.9	12.7	76	SE	3	1.3	.....	2ck	0	.....	.....	0.15	3.8	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.18	741.1	29.86	758.4	56.2	13.4	78	SE	15	6.7	.....	3ck	0	NW	.....	0.08	2.0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.18	741.1	29.92	760.0	59.7	15.4	76	SE	.....	.....	1	0	4s	.....	.....	0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.28	743.7	29.97	761.2	49.5	9.7	93	Calm	0	0	.....	2k	0	SW	.....	0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.30	744.2	29.94	760.5	54.9	12.7	86	E	12	5.4	.....	5k	0	W	.....	0	0	Cloudy	M. Payne.
Quebec, Quebec	29.85	758.2	30.10	766.8	41.0	5.0	57	E	.....	.....	6	.....	6n	.....	.....	0	0	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.48	748.8	29.94	760.5	46.1	7.8	69	E	6	2.7	.....	0	5ks	.....	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B.	30.06	763.5	30.22	767.6	42.0	5.6	50	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.14	740.1	29.81	757.2	72.1	22.3	67	SW	15	6.7	.....	7k	0	SW	.....	0.61	15.5	Fair	K. Stewart.
Stratford, Ontario	28.65	727.7	29.91	759.7	56.3	13.5	84	S	5	2.2	.....	2k	0	SW	.....	0.168	4.21	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.06	763.5	30.10	764.5	39.0	4.2	50	NW	7	3.1	.....	0	1ks	.....	.....	0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.59	751.6	29.97	761.2	48.6	9.2	91	E	2	0.9	.....	7ck	Haze	W	.....	0	0	Cloudy	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.86	733.0	29.91	759.7	57.4	14.1	83	S	.....	.....	.....	3k	0	W	.....	0.11	2.8	Fair	Professor Wolverton.
Yarmouth, N. S.	30.14	765.5	30.21	767.3	47.4	8.6	40	E	3	1.3	.....	2cs	0	W	.....	0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.62	752.3	29.88	758.9	32	0.0	90	W	.....	.....	.....	10k	10s	.....	.....	0.25	6.3	Cloudy	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.84	757.9	34.9	1.9	.....	NW	.....	.....	4	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.02	762.5	30.10	764.5	61	16.1	61	S	11	4.9		0	Haze		Calm	0.03	0.8	Hazy	
Alpena, Michigan	29.19	741.4	29.81	757.2	62	16.7	83	NW	18	8.0		0	5s		NW	0.45	11.4	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.95	735.3	30.06	763.5	70	21.1	56	SE	7	3.1		1c	0	Calm		0	0	Clear	
Atlantic City, New Jersey	30.12	765.0	30.13	765.3	57	13.9	94	SE	9	4.0			10s		Calm	0	0	Cloudy	
Augusta, Georgia	29.99	761.7	30.19	766.8	67	19.4	79	S	2	0.9		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.07	763.8	30.12	765.0	60	15.6	82	E	5	2.2			10s		Calm	0	0	Cloudy	
Barnegat, New Jersey	30.10	764.5	30.12	765.0	56	13.3	81	S	16	7.2			10s		SW	0	0	Cloudy	
Bismarck, Dakota	27.81	706.4	29.67	753.6	49	9.4	63	SE	3	1.3		1c	0	Calm		0	0	Clear	
Boerne, Texas	28.45	722.6	29.72	754.9	67	19.4	100	SE	3	1.3			Fog		SE	0	0	Dense fog	
Boise City, Idaho	27.22	691.4	30.18	766.6	36	2.2	75	N	3	1.3			10s		SW	0.03	0.8	Cloudy	
Boston, Massachusetts	30.01	762.2	30.16	766.1	54	12.2	67	W	6	2.7		5c	0	Calm		0	0	Fair	
Brackettville, Texas	28.73	729.7	29.74	755.4	69	20.6	95	E	7	3.1			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.71	729.2	29.69	754.1	46	7.8	77	SE	6	2.7		5c	0	S		0.03	0.8	Fair	
Brownsville, Texas	29.80	756.9	29.85	758.2	79	26.1	87	SE	2	0.9		0	0			0	0	Clear	
Buffalo, New York	29.25	742.9	29.93	760.2	60	15.6	77	SW	3	1.3		2ck	Sm'e	W		0.08	2.0	Fair	
Burkes, Arizona					53	11.7	19	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.76	755.9	30.05	763.3	52	11.1	66	SW	7	3.1			10s		W	0	0	Cloudy	
Cairo, Illinois	29.61	752.1	29.98	761.5	72	22.2	71	S	3	1.3		8ck	0	S		0	0	Fair	
Campo, California	27.37	695.2	29.94	760.5	34	1.1	79	S	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.13	765.3	30.13	765.3	72	22.2	71	W	4	1.8		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	74	23.3	59	SW	14	6.3		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.14	765.5	30.15	765.8	69	20.6	85	NW	7	3.1		Haze	0	Calm		0	0	Clear	
Cape May, New Jersey	30.08	764.0	30.11	764.8	60	15.6	76	E	8	3.6			Fog		Calm	0	0	Foggy	
Castroville, Texas	29.09	738.9	29.77	756.1	71	21.7	90	SE	3	1.3			10s		Calm	0	0	Cloudy	
Cedar Keys, Florida	30.04	763.0	30.06	763.5	72	22.2	85	E	12	5.4		8cs	0	E		1.15	29.2	Fair	
Charleston, South Carolina	30.09	764.3	30.15	765.8	70	21.1	80	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.29	744.0	30.08	764.0	72	22.2	62	SW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Chattanooga, Tennessee	29.31	744.5	30.09	764.3	67	19.4	79	NE	1	0.4		1cs	Sm'e	Calm	Calm	0	0	Clear	
Cheyenne, Wyoming	23.80	604.5	29.74	755.4	31	− 0.6	48	W	6	2.7		0	5s		W	0	0	Fair	
Chicago, Illinois	29.29	744.0	29.96	761.0	60	15.6	71	NW	9	4.0			10n		Calm	Inap.	Inap.	Light rain	
Chincoteague, Virginia	30.09	764.3	30.10	764.5	61	16.1	96	SW	4	1.8		0	Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.40	746.7	30.02	762.5	73	22.8	59	SE	2	0.9		8k	0	S		0	0	Fair	
Cleveland, Ohio	29.26	743.2	29.94	760.5	74	23.3	51	S	15	6.7		1ck	0	W		0	0	Clear	
Coleman City, Texas	28.07	713.0	29.68	753.9	64	17.8	83	SE	8	3.6			10s		S	0	0	Cloudy	
Columbus, Ohio	29.17	740.9	29.97	761.2	60	20.6	65	S	4	1.8		8k	0	SW		0	0	Fair	
Concho, Texas	27.93	709.4	29.53	750.0	71	21.7	85	S	14	6.3			10s		S	0	0	Cloudy	
Corsicana, Texas	29.43	747.5	29.88	758.9	67	19.4	89	S	8	3.6		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.29	744.0	29.92	760.0	55	12.8	68	NW	2	0.9			10s		W	0	0	Cloudy	
Dayton, Washington T'y					38	3.3	71	SW			1	2k	2s	W	W	0.27	6.9	Fair	
Deadwood, Dakota	24.98	634.5			43	6.1	28	N	4	1.8		5c	0	N		0	0	Fair	
Decatur, Texas	28.67	728.2	29.78	756.4	71	21.7	58	S	12	5.4		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.09	764.3	30.11	764.8	56	13.3	100	SE	12	5.4			Fog			0	0	Foggy	
Denison, Texas	29.07	738.4	29.83	757.7	71	21.7	85	SE	7	3.1		2c	0	SW		0	0	Fair	
Denver, Colorado	24.58	624.3	29.80	756.9	38	3.3	54	NW	8	3.6		0	0			0	0	Clear	
Des Moines, Iowa	29.01	736.8	29.88	758.9	50	10.0	72	Calm	0	0		2c	0	NW		Inap.	Inap.	Clear	
Detroit, Michigan	29.23	742.4	29.87	758.7	68	20.0	65	SW	6	2.7		5ck	0	W		0	0	Fair	
Dodge City, Kansas	27.14	689.3	29.36	745.7	52	11.1	73	SE	4	1.8		0	0			0	0	Clear	
Dubuque, Iowa	29.21	741.9	29.90	759.4	53	11.7	61	NE	1	0.4			10s		Calm	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.15	740.4	29.82	757.4	46	7.8	92	SW	8	3.6		8c	0	SW		0.15	3.8	Fair	
Eagle Pass, Texas	29.15	740.4	29.85	758.4	75	23.9	86	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	30.14	765.5	30.21	767.3	43	6.1	43	Calm	0	0		0	0			0	0	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.25	742.9	29.92	760.0	74	23.3	51	SW	1	0.4		2k	0	SW		0	0	Fair	
Escanaba, Michigan	29.26	743.2	29.90	759.4	54	12.2	67	NW	1	0.4		8c	0	W		0	0	Fair	
Florence, Arizona	28.40	721.3	30.00	762.0	57	13.9	58	N	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	25.01	635.2	30.46	773.7	36	2.2	45	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.57	700.3	29.37	746.0	40	4.4	56	Calm	0	0		5cs	0	SW		0	0	Fair	
Fort Custer, Montana	26.56	674.6			36	2.2	90	NW	18	8.0			10s		NW	0.02	0.5	Cloudy	
Fort Davis, Texas	25.15	638.8	30.11	764.8	55	12.8	22	S	8	3.6		0	0			0	0	Clear	
Fort Elliot, Texas	26.71	678.4	28.85	732.8	60	15.6	49	W	14	6.3		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.28	743.7	29.78	756.4	73	22.8	72	SE	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.21	640.3	30.01	762.2	50	10.0	16	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.54	724.9	29.76	755.9	67	19.4	89	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	26.94	684.3			46	7.8	60	NE	16	7.2			10s		NE	0	0	Cloudy	
Fort McKavett, Texas	27.62	701.5	29.45	748.0	70	21.1	85	E	8	3.6			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.56	725.4	29.04	752.8	70	21.1	80	S	16	7.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.77	705.4			42	5.6	83	E	2	0.9		2c	0	Calm		0	0	Clear	
Fort Verde, Arizona					44	6.7	52	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.11	714.0	29.67	753.6	51	10.6	79	SE	4	1.8			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.87	758.7	29.92	760.0	75	23.9	86	SE	7	3.1		0	2ks		SE	0	0	Clear	
Grand Haven, Michigan	29.25	742.9	29.88	758.9	59	15.0	70	W	7	3.1		5c	0	W		0	0	Fair	
Helena, Montana					35	1.7	70	SW	7	3.1			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.17	740.9	29.91	759.7	72	22.2	67	S	4	1.8		0	8ks		S	0	0	Fair	
Indianola, Texas	29.91	759.7	29.94	760.5	73	22.8	85	SE	8	3.6		2c	2s	NW	SE	0	0	Fair	
Jacksboro, Texas	28.68	728.5	29.76	755.9	70	21.1	75	SE	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	30.09	764.3	30.12	765.0	77	25.0	69	NE	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.30	744.2	29.90	759.4	56	13.3	75	SE	9	4.0			10n		SW	0.14	3.6	Light rain	
Key West, Florida	29.98	761.5	30.02	762.5	77	25.0	82	SE	8	3.6		10k	0	SE		1.14	29.0	Cloudy	
Kittyhawk, North Carolina	30.12	765.0	30.14	765.5	72	22.2	62	W	12	5.4		0	0			0	0	Clear	
Knoxville, Tennessee	29.14	740.1	30.12	765.0	67	19.4	74	N	1	0.4		0	0			0	0	Clear	
La Crosse, Wisconsin	29.17	740.9	29.90	759.4	52	11.1	73	W	2	0.9		0	0			0	0	Clear	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	53	11.7	8	W	2	0.9		0	0			0	0	Clear	
Laredo, Texas	29.47	748.5	29.80	756.9	70	21.1	75	SE	7	3.1		0	0			0	0	Clear	
Leavenworth, Kansas	28.97	735.8	29.79	756.7	60	15.6	55	SE	6	2.7		5k	5s	SW	SW	0	0	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.61	752.1	29.91	759.7	73	22.8	85	Calm	0	0		5ck	0	SE		0	0	Fair	
Los Angeles, California	29.64	752.8	29.98	761.5	53	11.7	80	NE	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.44	747.8	29.97	761.2	75	23.9	60	S	5	2.2		8k	1s	SW	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.41	747.0	30.06	763.5	73	22.8	55	NW	2	0.9		0	Haze			0	0	Clear	
Madison, Wisconsin	28.93	734.8	29.90	759.4	53	11.7	67	NW	6	2.7		10cs	0	N		Inap.	Inap.	Cloudy	
Marquette, Michigan	29.17	740.9	29.86	758.4	52	11.1	66	NW	4	1.8		0	0			0.26	6.6	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.25	717.5	29.94	760.5	69	20.6	85	S	3	1.3			10s		S	0	0	Cloudy	
Memphis, Tennessee	29.62	752.3	29.95	760.7	72	22.2	71	SE	4	1.8		5ck	0	W		0	0	Fair	
Milwaukee, Wisconsin	29.20	741.7	29.91	759.7	57	13.9	69	W	7	3.1			10ks;s		W	0	0	Cloudy	
Mobile, Alabama	29.99	761.7	30.04	763.0	72	22.2	90	S	4	1.8		5c	2s	W	Calm	0	0	Fair	
Montgomery, Alabama	29.85	758.2	30.08	764.0	72	22.2	79	SE	7	3.1		5cs	0	SE		0	0	Fair	
Morgantown, West Virginia	29.07	738.4	30.03	762.7	68	20.0	74	Calm	0	0		5k	Haze	W		0	0	Fair	
Mt Washington, N H	28.85	605.8	30.21	767.3	35	1.7	80	NW	42	18.8			10s		NW	0	0	Cloudy	
Nashville, Tennessee	29.51	749.5	30.02	762.5	74	23.3	59	S	2	0.9		2cs	Haze	SW	Calm	0	0	Fair	
New Haven, Connecticut	30.03	762.7	30.15	765.8	56	13.3	75	S	4	1.8			10s		S	Inap	Inap.	Cloudy	
New London, Connecticut	30.12	765.0	30.17	766.3	54	12.2	80	S	5	2.2			10s		S	0.01	0.3	Cloudy	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	75	23.9	81	E	4	1.8		2k	Haze	SE	Calm	0	0	Fair	
Newport, Rhode Island	30.12	765.0	30.16	766.1	52	11.1	79	SW	4	1.8		5cs	0	Calm		0	0	Fair	
New River, North Carolina					70	21.1	75	W			1	Haze	Haze	Calm	Calm			Light Haze.	
New York, New York	29.97	761.2	30.15	765.8	54	12.2	79	SW	5	2.2		2k;hz	Haze	sw;Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.03	762.7	30.08	764.0	75	23.9	60	W	2	0.9		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.72	678.7	29.18	741.1	53	11.7	67	E	7	3.1		5cs	5s	SW	SW	0.11	2.8	Cloudy	
Olympia, Washington Ter	30.07	763.8	30.11	764.8	41.5	5.3	87	S	7	3.1		2cs	2s	W	W	0.13	3.3	Fair	
Omaha, Nebraska	28.68	728.5	29.76	755.9	54	12.2	55	SE	12	5.4		0	5s		Calm	0	0	Fair	
Oswego, New York	29.66	753.4	29.97	761.2	58	14.4	76	S	1	0.4		0	Haze			0.35	8.9	Clear	
Pembina, Dakota	28.71	729.2	29.54	750.3	40	4.4	73	SW	8	3.6		0	0			0	0	Clear	
Pensacola, Florida	30.01	762.2	30.04	763.0	73	22.8	85	E	12	5.4		4k	9ks	E	E	0	0	Threatening	
Philadelphia, Pennsylvania	30.08	764.0	30.15	765.3	56	13.3	87	SE	2	0.9			10s		Calm	0	0	Cloudy	
Phœnix, Arizona	28.74	730.0	30.54	775.7	54	12.2	38	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.47	443.7	29.68	753.9	8	—13.3	100	W	24	10.7			10n		W	0.09	2.3	Light snow.	
Pilot Point, Texas	29.07	738.4	29.89	759.2	69	20.6	85	SE	11	4.9		8c	0	S		0	0	Fair	
Ploche, Nevada	24.01	609.8	29.78	756.4	41	5.0	93	NW	4	1.8		2cs	0	Calm		0	0	Fair	
Pittsburg, Pennsylvania	29.24	742.7	30.02	762.5	65	18.3	84	Calm	0	0		10k	Fog	Calm	Calm	0	0	Cloudy	
Port Huron, Michigan	29.20	741.7	29.84	757.9	67	19.4	64	SW	14	6.3		8k	0	SW		0	0	Fair	
Portland, Maine	30.13	765.3	30.18	766.6	47	8.3	77	NE	8	3.6			10s		Calm	0	0	Cloudy	
Portland, Oregon	30.10	764.5	30.18	766.6	43.5	6.4	83	SW	8	3.6		Haze	8s	Calm	W	0.15	3.8	Cloudy	
Portsmouth, North Carolina					71	21.7	66	W	9	4.0		0	0			0	0	Clear	
Prescott, Arizona	24.71	627.1	30.07	763.8	50	10.0	14	S	7	3.1		2cs	0	W		0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	73	22.8	85	E	8	3.6			10s		Calm	0.22	5.6	Threatening	
Red Bluff, California	29.78	756.4	30.14	765.5	51.0	10.6	59	N	4	1.8		0	4s		N	0	0	Fair	
Rio Grande City, Texas	29.66	753.4	29.88	758.9	74	23.3	90	SE	10	4.5			10s		SE	0	0	Cloudy	
Rochester, New York	29.34	745.2	29.93	760.2	59	15.0	76	SW	9	4.0		5k	Fog	W	Calm	0.89	22.6	Fair	
Roseburg, Oregon	29.63	752.6	30.21	767.3	44	6.7	88	SE	1	0.4			10s		Calm	0.06	1.5	Cloudy	
Sacramento, California	30.07	763.8	30.15	765.8	49	9.4	85	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.35	745.5	29.90	759.4	67	19.4	64	N	12	5.4		2c	2ks	S	Calm	0	0	Fair	
St. Paul, Minnesota	29.00	736.6	29.81	757.2	47	8.3	85	SE	5	2.2		5cs	0	W		0	0	Clear	
Salt Lake City, Utah	25.64	651.2	29.97	761.2	38	3.3	72	Calm	0	0			10n		W	0.03	0.8	Light snow.	
San Antonio, Texas	29.23	742.4	29.90	759.4	72	22.2	85	SE	2	0.9			10s		Calm	0	0	Cloudy	
San Diego, California	29.89	759.2	29.96	761.0	49	9.4	85	N	2	0.9		0	0			0	0	Clear	
Sandusky, Ohio	29.28	743.7	29.92	760.0	72	22.2	62	SW	15	6.7		2ck	0	W		0	0	Fair	
Sandy Hook, New Jersey	30.11	764.8	30.14	765.5	56	13.3	81	SE	12	5.4		0	Haze		Calm	0	0	Clear	
San Francisco, California	30.15	765.8	30.21	767.3	51	10.6	72	S	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.20	589.3	29.74	755.4	39	3.9	46	Calm	0	0		0	0			0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	76	24.4	77	Calm	0	0		0	0			0	0	Clear	
Shreveport, Louisiana	29.74	755.4	29.95	760.7	74	23.3	86	S	4	1.8		1k	0	Calm		0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.12	765.0	30.16	766.1	70	21.1	85	W	4	1.8		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico	25.34	643.6	29.41	747.0	47	8.3	28	NW	1	0.4		0	0			0	0	Clear	
Springfield, Illinois	29.30	744.2	29.96	761.0	63.5	17.5	55	N	12	5.4		2c	5s	SW	SW	0	0	Fair	
Springfield, Massachusetts	30.02	762.5	30.16	766.1	52	11.1	79	S	2	0.9			10ks		SW	Inap.	Inap.	Cloudy	
Stockton, Texas	26.85	682.0	29.85	758.2	64	17.8	58	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass	30.13	765.3	30.18	766.6	47	8.3	92	N	9	4.0			10s		N	0	0	Cloudy	
Toledo, Ohio	29.25	742.9	29.90	759.4	74	23.3	59	S	10	4.5		2k	0	SW		0	0	Clear	
Tucson, Arizona	27.50	698.5	30.05	763.3	62	16.7	15	Calm	0	0		0	0			0	0	Clear	
Umatilla, Oregon	29.77	756.1	30.27	768.8	44	6.7	68	SW	20	8.9		0	2s		SW	0	0	Clear	
Uvalde, Texas	28.92	734.6	29.71	754.6	72	22.2	90	E	1	0.4			10s		Calm	0	0	Cloudy	
Vicksburg, Mississippi	29.77	756.1	30.02	762.5	71	21.7	90	SE	4	1.8		0	1s		Calm	0	0	Clear	
Virginia City, Montana	24.05	610.9	29.53	750.0	27	— 2.8	64	SW	16	7.2			10s		Calm	0.06	1.5	Cloudy	
Visalia, California	29.70	754.4	30.08	764.0	48	8.9	85	Calm	0	0		0	0			0	0	Clear	
Washington, D. C	29.99	761.7	30.11	764.8	57	13.9	87	NE	6	2.7			10s		NE	0	0	Cloudy	
Wickenburg, Arizona					48	8.9	36	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.07	763.8	30.14	765.5	70	21.1	80	W	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.05	651.5	30.01	762.2	42	5.6	42	SW	6	2.7		5ck	0	SW		0.02	0.5	Fair	
Wood's Holl, Massachusetts	30.13	765.3	30.17	766.3	54	12.2	74	SW	10	4.5		2cs	Haze	Calm		0.02	0.5	Fair	
Yankton, Dakota	28.36	720.3	29.62	752.3	50	10.0	72	NW	7	3.1		0	2s		NW	0.05	1.3	Fair	
Yuma, Arizona	29.70	754.4	29.85	758.2	60	15.6	49	NE	2	0.9		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.03	559.6			57.0	13.9	80	Calm	0	0			10n			0.14	3.6	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.97	761.2	30.02	762.5	76	24.4	81	Calm	0	0		8cs	0	SW		0.46	11.7	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.01	762.2	30.02	762.5	79	26.1	72	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.94	760.5	30.02	762.5	78.5	25.8	70	E	14	6.3		5k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	82	27.8	83	E			3		8ks	E		0.030	0.76	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.43	747.5	29.99	761.7	77	25.0	89	Calm			0		10s			0.68	17.3		Francesco J. Cisneros.
Rivas, Nicaragua					75.2	24		NE					4k		NE	0	0	Covered	Carl Flint.
Santiago de Cuba, W. I	30.00	762.0	30.02	762.5	79	26.1	69	Calm	0	0		4c	2k	Calm	Calm	0	0		Robert Mason
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.62	752.3	29.67	753.6	24.0	— 4.4	100	E	18	8.0			10n		E	0.60	15.2	Snowing	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.2) in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er			Character.	Direction from—		
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.				
§ Navy Yard, Pensacola, Fla	30.07	763.8	75	23.9	86	E	7	3.1			10		SE	0.21	5.3			Cloudy	
§ Navy Yard, Portsmouth, N. H.	30.16	766.1	48	8.9	85	NE	8	3.6			10			0	0			Overcast	
Naval Hospital, Yokohama, Japan	30.02	762.5	61	16.1	77	Calm			0		0			0	0			Clear	
§ Adams, Punta Arenas, Costa Rica	29.91	759.7	81	27.2	87	NW			1-2		8		NW					Cloudy	
§ Alaska, Ancon, Peru *	29.94	760.5	64	17.8	94	Calm			0		10					Smooth		Foggy	
§ Alert, N. 33° 47′, E. 139° 53′	30.08	764.0	67	19.4	79	SW			6		0					Mod'ate	E	Clear	
§ Colorado, New York, N. Y.	30.11	764.8	62	16.7	77	SE	3	1.3			8			0	0			Cloudy	
§ Constitution, Hampton Roads, Va.	30.05	763.3	69	20.6	90	SW	3	1.3			0							Hazy	
§ Enterprise, Hampton Roads, Va.	30.10	764.5	70	21.1	??	SW			2		2		SSW			Smooth		Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	30.12	765.0	70	21.1	75	WSW	10	4.5			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.18	766.6	52	11.1	100	W	1.2	0.6			4		W	0	0			Fair	
§ Jamestown, Sitka, Alaska *	29.96	761.0	35	1.7	80	ENE			2		0					Smooth		Clear	
Kearsarge, Boca del Toro, Chiriqui	30.00	762.0	78	25.6	95	W			2		5		W			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.04	763.0	60	15.6	55	NNW			2		8			0	0	Smooth		Hazy	
§ Michigan, Erie, Pa.	29.88	758.9	59	15.0	100	SW			4		2		SW					Clear	
§ Monocacy, Shanghai, China	29.73	755.1	69	20.6	90	S			1		10			0	0			Cloudy	
§ New Hampshire, Port Royal, S. C.	30.13	765.3	72	22.2	90	ENE	6	2.7			1		Calm	0	0			Clear	
Nipsic, N. 40° 58′, E. 3° 01′	29.76	755.9	64	17.8	62	SSE			3		2					Long high	NE	D. clouds	
§ Onward, Ancon Bay, Peru †	29.95	760.7	64	17.8	94	WNW			1		8		W			Long	W	Misty	
§ Palos, Shanghai, China	29.76	755.9	68	20.0	95	SSE			4		10							Threatening	
§ Passaic, Washington, D. C.	30.10	764.5	59	15.0	88	NE			1		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.15	765.8	52	11.1	86	Calm			0		9					Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	30.09	764.3	61	16.1	88	E			3		10							Foggy	
§ Quinnebaug, Tangier, Marocco	30.02	762.5	66	18.9	74	WSW			4		5		WSW			Smooth	S	Fair	
§ Richmond, Shanghai, China	29.77	756.1	70	21.1	85	SSE			2		5?		SSE	0	0			Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.09	764.3	78	25.6	62	SE	2	0.9			8		Calm	0	0			Fair	
§ Saratoga, N. 37° 20′, W. 35° 40′	30.39	771.9	66	18.9	74	SSE			4		2		Calm	0	0	Smooth	S	Hazy	
§ Shenandoah, Montevideo, Uruguay	30.01	762.2	60	15.6	88	NNW			2		5		Calm			Smooth		Hazy	
§ St. Louis, League Island, Pa.	30.14	765.5	56	13.3	87	SE	4	1.8			10		SW	0	0			Cloudy	
Swatara, N. 3° 02′, E. 100° 59′ †	29.88	758.9	80	26.7	96	NW			3		5		WNW			Smooth		Fair	
§ Tennessee, N. 10° 54′, W. 76° 14′	29.89	759.2	79	26.1	91	N	14	6.3			10		NE	0	0	Long	NNE	Cloudy	
Ticonderoga, N. 34° 30′, E. 134° 45′	30.05	763.3	64	17.8	100	ESE			2		0					Smooth		Clear	
§ Trenton, Tenedos, Archipelago	29.84	757.9	71	21.7	62	N			2		10			0	0	Mod'ate	N	Cloudy	
§ Tuscarora, Mare Island, Cal.	30.16	766.1	52	11.1	73	WNW			2-3		2		SW	0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.15	765.8	59	15.0	76	SW			2		2		SW					Fair	
§ Wabash, Boston, Mass.	30.15	765.8	51	10.6	79	WSW	6	2.7			8			0	0			Hazy	
§ Wachusett, Montevideo, Uruguay	29.99	761.7	59	15.0	100	N			3		8		N	0	0	Smooth		Fair	
Wyoming, Constantinople, Turkey	29.84	757.9	62	16.7	61	N			2		8		N			Smooth	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
Liverpool, Eng.	30.23	767.8	52	11.1	86	WNW			2		5		NE	0	0			Fair	
S. S. Ohio, Henry Morrison.																			
S. S. Pennsylvania, Geo. H. Dodge.																			Wm. Shackford.
N. 45° 15′, W. 36° 27′...*†	30.17	766.3	62	16.7	88	SSE			5		5		SSE	1 h'r	1 h'r	Mod'ate	SSE	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 24° 25′, W. 112° 00′...†	29.96	761.0	58	14.4	94	NW			2		5		NW	0	0	Small	WNW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 49° 48′, W. 6° 56′	30.03	762.7	54	12.2	61	SE			4		2		S	0	0	1	SE	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heinbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 26° 56′, E. 120° 43′...†	29.90	759.4	72	22.2	77	SSW			3		5		SW			Smooth		Fair	D. A. Joyce.
§ S. S. Guelic, W. H. Kidley, San Francisco, Cal...†	30.20	767.1	53	11.7		NW			2	ck		NW		0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Santa Barbara, Cal...†	30.21	767.3	59	15.0		NW			2		0							Clear	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba.																			
§ S. S. State of California G. Debney, N. 45° 50′, W. 124° 10′...†	30.11	764.8	45	7.2		W			2		5		SW			Light	W	Light rain	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 33° 12′, W. 120° 15′....†	29.95	760.7	58	14.4	82	NW			6		2		W			Heavy	NW	Clear	F. A. Johnston.
§ S. S. Australia, S. 33° 30′, E. 153° 46′....	30.17	766.3				WSW			6		10					Heavy Rough		Drizzling	Banneman.
§ S. S. China, W. B. Seabury, N. 15° 30′, W. 96° 25′.....†	29.86	758.4	82	27.8	87	WSW			2		0								
§ S. S. City of Chester, J. M. Lacklan.																Mod'ate	SW	Clear	J. M. Lacklan.
§ S. S. City of Panama, M. Connolly, N. 17° 10′, W. 101° 08′....†	29.92	760.0	78	25.6		WNW			3		2		W	0	0	Mod'ate	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 36° 47′, W. 140° 26′....†	30.49	774.4	57	13.9	87	WSW			2		0					Mod'ate	W	Clear	
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.98	761.5	69	20.6		NE			4		10		NE	0	0	Smooth		Misty	E. LeSack.
§ S.S. City of Tokio, J. Maury, Yokohama, Japan.....†	30.24	768.1	67	19.4	79	W			2		5?		W	0	0			Cloudy?	F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama. †	29.90	759.4	80	26.7	96	NW			2		5		N	0	0			Fair	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J M Cavaody																			
S. S. Idaho, Nanaimo, Vancouver I'd†	30.27	768.8				W			1		5		Calm	Sprin	kles.	Smooth		Fair	
§ S.S Zealandia, R. C. Ghest, N. 15° 50′, W. 159° 40′.....	29.93	760.2				E			4				E			High	E	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 42° 50′, W. 41° 57′.....†	29.91	759.7	62	16.7		SSW			4		8		SSW	0	0	High	SSW	Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 40° 54′, W. 62° 25′.....†	30.08	764.0	48	8.9		N			2		5		NE	0	0	Smooth		Blue sky	W. S. Waugh.
S. S. Britanic, H. Perry, N. 50° 38′, W. 17° 44′.....†	30.28	769.1	50	10.0	100	NW			6		10		N	Slight	Slight	Mod'ate	NNW	Squally	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr Addie Fuller, J. Jorgensen, Block I'd, Long I'd Sound	30.16	766.1	52	11.1	86	SSW	4	1.8		2ck	Haze								Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis, N. 38° 19′, W. 72° 59′.....†	30.06	763.5	61	16.1		E			3		10		SSW	0	0			Fair	J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 26° 55′, E. 45° 00′.....*†	30.20	767.1	74	23.3		SE			2		2		SE	0	0	Mod'ate	E	Cloudy	L. L. Lewis.
Brigantine George, W. H Champlin, Arroya, Porto Rico	30.23	767.8	82	27.8		ENE			5		1		E	0	0	Mod'ate	S	Fair	B. F. Woodbury.
Hippolyta, N. 49° 32′, W. 15° 16′.....*	29.77	756.1	63	17.2		NW			9		8		NNW	Sho	wers.	Smooth		Clear	
Iron Cross, W. Randall																Rough	NW	Threatening	
Barque Syringa, E. Lewis																			W. Randall.
																			E. Lewis.

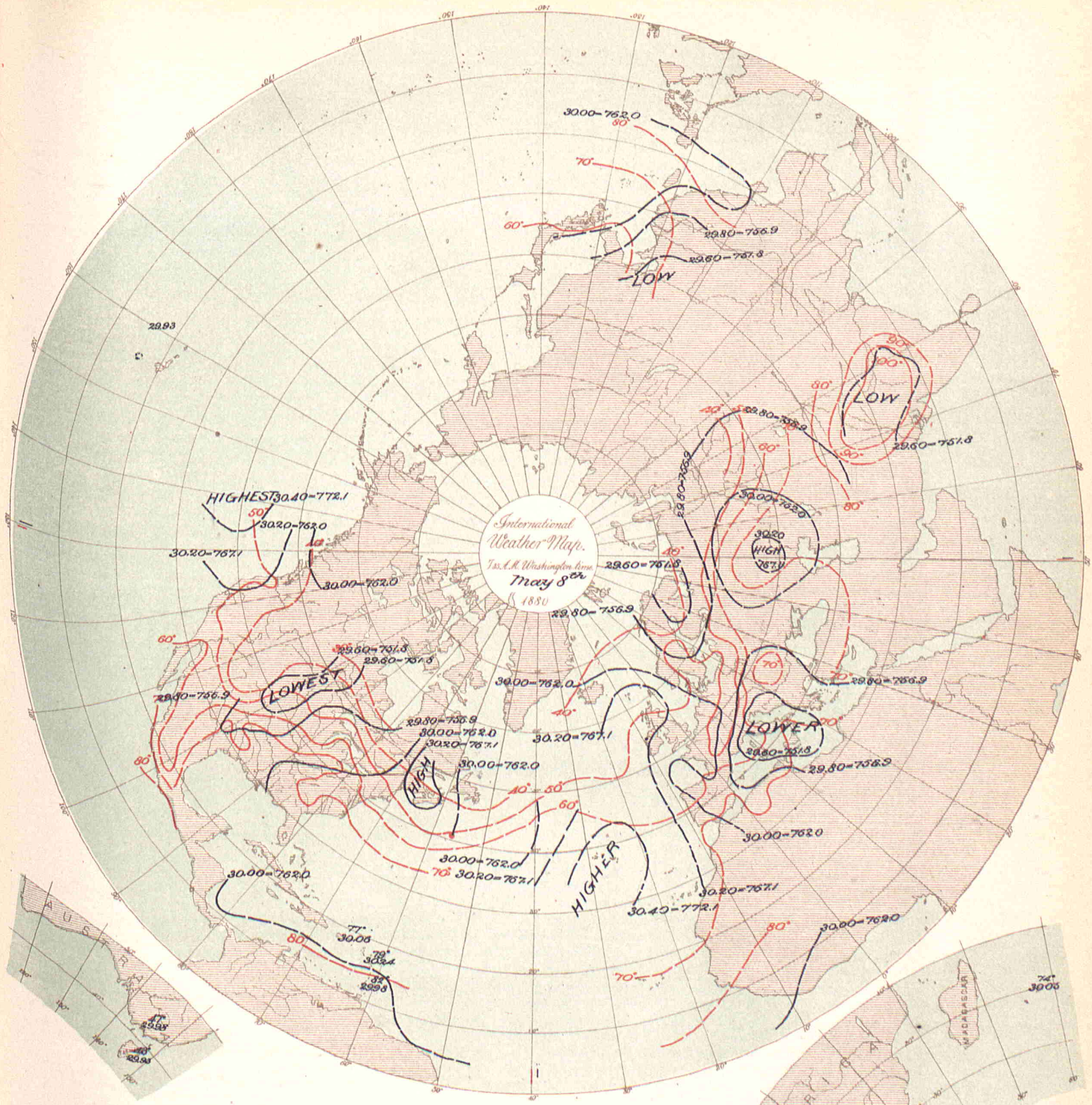
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 9, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.10	764.4				NE			4		1			0	0	Very fair	Dr. Ollive.
Nemours			29.96	760.9	65.5	18.6	60	E			1		2			0	0	Fair	Metge.
Algiers			29.89	759.3	66.6	19.2	57	W			5		4			0	0	Cloudy	Nicolas.
La Calle			29.92	759.9	69.3	20 7	55	NNW			3		3			0	0	Pretty fair	Fonfrède.
Tunis			29.89	759.2															Jacques.
Sfax			29.98	761.6															Gau.
Saida			29.98	761.6															Bernard.
Tebessa			29.96	761.0	65.5	18.6	26	SW			3		1			0	0	Very fair	Watrin.
Geriville					56.3	13.5	40	SW			2		8			0	0	Very cloudy	Brugniaux.
Laghouat			29.95	760.6	69.4	20.8	30	S			1		3			Inap.	Inap	Pretty fair	Suart.
Biskra			29.90	759.5	77.4	25.2	57	NW			2		4			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.14	740.1	29.69	754.0	53.4	11.9	72	N			3		10			0.020	0.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.08	738.5	29.85	758.2	46 4	8.0	93	NNW	5.8	2.6			10			0.118	3.0		Dr. Wierzbicki.
Eperies	28.82	732.0	29.69	754.2	52.5	11.4	87	N			1		10ns			0.050	1.27		Julius Mikolik.
Gratz	28.52	724.5	29.78	756.3	50.4	10.2	66	NW			4		10			0.492	12.5		Andreas Rospini.
Hermannstadt	28.19	715.9	29.54	750.4	70.5	21.4	47	SSE			3		5			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.55	725.1	29.91	759.8	42.1	5.6	91	W			1		10			0.760	19.3		The Staff.
Lemberg	28.70	728.9	29.66	753.3	61.7	16.5	56	SW			2		9			0	0		Dr. T. Stanecki.
Pola	29.50	749.4	29.61	752.2	61.3	16.3	70	E			2		10			0.173	4.4		I.R.Hydrographic Office.
Szathmar	29.19	741.3	29.63	752.6	68.7	20.4	45	N			1		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.32	744.6	29.59	751.5	65.1	18.4	69	SE			1		10			0.179	4.55		Karl Stancel.
Trieste	29.54	750.4	29.65	753.0	62.6	17.1	51	E			2		6			0	0		P. Busin.
Vienna	29.10	739.2	29.84	758.0	41.7	5.4	89	WNW			3		10			1.575	40.0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 8, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.25	768.3	30.35	770.9	52.6	11.4		NNW	12	5.4			9			0.050	1.27	Overcast	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	30.17	766.3	30.40	772.1	57.0	13.9		NNE	5	2.2									S. Call.
Bidston (Liverpool Obs)			30.35	770.9	51.9	11.1		NW	15	6.7			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.79	756.7	30. 1	769.9	52.7	11.5		ENE	6	2.7			6					D. clouds	Thomas Mackereth.
Bradford, Yorkshire																0.07	1.8		J McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	80	26.7		NE			3		6					Gloomy	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.20	767.1	30.29	769.4	54.0	12.2		N			2		3					D. clouds	H. Todd.
Cardington			30.28	769.1	54.0	12.2		N			1		8					Overcast	John McLaren.
Chatham (School M. E.)	30.14	765.5	30.28	769.1	48.1	8.9		E			0		9					Gloomy	Sapper W. Gibson, R. E.
Donaghadee	30.38	771.6	30.42	772.7	51	10.6		E			2		8					D. clouds	J. Mac Gowan.
Dover	30.22	767.6	30.25	768.3	51	10.6		ENE			4		3					¼ clouded	J. Costello.
Falmouth (Observatory)	30.08	764.0	30.31	769.9	52.9	11.6		SE			2		5					D. clouds	The Staff.
Fort Napier, Natal	27.82	706.6	30.02	762.5	75.4	24.1		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.97	761.2	76	24.4		W			1		10					Drizzling	
Galway (Queen's College)			30.32	770.1	62	16.7		NNW			1		0					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.88	758.9	29.94	760.5	64.8	18.2		W			6		2					Blue sky	Srgt. W. Allen.
Glasgow, (Observatory)	30.16	766.1	30.37	771.4	55.9	13.3		W			1		7					D. clouds	D. G. Maclean.
Great Yarmouth	30.28	769.1	30.29	769.4	51	10.6		NNE			4		3					Blue sky	G. T. Watson.
Greenwich (Royal Obsty)	30.11	764.8	30.28	769.1	53.1	11.7		NNE			3		10					Overcast	The Staff, for G.B.Airy.
Guernsey	30.02	762.5	30.25	768.3	51	10.6		NE			4		0					Blue sky	Dr.S.E.Hoskins, F.R.S.
Helston	30.44	773.2	30.56	776.2	60	15.6		NE			4		0			0	0	Fine	M. P. Moyle.
Holyhead	30.34	770.6	30.37	771.4	51	10.6		ENE			3		1					Blue sky	John Tilston.
Jersey	29.97	761.2	30.27	768.8	49.8	9.9		ENE			4		8					Gloomy	J. Fisher.
Kew (Observatory)	30.26	768.6	30.30	769.6	51.0	10.6		NNE	16	7.2			9					Threatening	The Met'g'l Office.
Leicester (Museum)	30.07	763.8	30.33	770.4	49.8	9.9		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.77	756.1	29.85	758.2	65.6	18.7		W			4		2					Blue sky	A. King.
Nairn	30.27	768.8	30.36	771.1	56	13.3		NNW			3		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.00	762.0	79.0	26.1		SE			2		8			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.16	766.1	30.35	770.9	52.3	11.3		NE			2		10k		NNE	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.80	756.9	30.34	770.6	48.7	9.3		NNE			3		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.08	764.0	30.33	770.4	51	10.6		NNE			1		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	30.21	767.3	30.29	769.4	55.0	12.8		ENE			4		2					D. clouds	John Merrifield.
*Roche's Point	30.30	769.6	30.41	772.4	59	15.0		SE			3		2					¼ clouded	Wm. Kennedy.
St. Ann's Head	30.14	765.5	30.31	769.9	52	11.1		NNE			4		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.30	769.6	48.2	9.0		W	18	8.0			10					Drizzling	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.66	753.4	29.72	754.9	70.2	21.2		S			1		3			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	30.07	763.8	30.38	771.6	52.8	11.6		NE			2		9			0.01	0.3	Overcast	W. F. Cooper.
Silloth Rectory	30.33	770.4	30.36	771.1	54.4	12.4	60	Calm			0		8			0.024	0.61	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.37	771.4	55.0	12.8		ENE	5	2.2			5					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.98	761.5	30.20	767.1	53.3	11.8		NE			2		10					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.28	769.1	30.21	769.9	58	14.4		SE			2		7					D. clouds	W. Newcombe.
Valencia (Observatory)	30.33	770.4	30.36	771.1	59.3	15.2		N	18	8.0			6					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.12	765.0	30.16	766.1	64.2	17.9	77	S	21.2	9.5		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.02	762.5	50.0	10.0	80	S			2		7k			0.06	1.5		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.36	771.1	52.9	11.6		E			2		10k			0.04	1.0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.84	757.9	30.03	762.8	73.6	23.1	63	SE	4.0	1.8			8			0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.91	759.7	30.00	762.0	48.0	8.9	87	WSW	17	7.6			9			0.35	8.9	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.38	771.6	51	10.6		NW			3	3	0	NW		0	0		J. Youngclause.
North Unst, Shetland I's			30.17	766.3				W			4		8			Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from		
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Tommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 06′, W. 9° 00′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
San José	26.20	665.5	29.92	760.0	71.6	22.0	75	SE			2	1d	2ck			0.55	14.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.02	762.5	30.07	763.7	52.0	11.1	51	N			4		1						
Fanöe	30.10	764.6	30.12	765.1	48.4	9.1	66	NW			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.13	765.2	30.17	766.3	55.4	13.0	82	S			2		2						
Thorshavn (Faröe)	30.15	765.8	30.19	766.7	34.2	1.2	91	NW			2		7						
Vestervig	30.02	762.6	30.12	765.0	47.8	8.8	71	W			2		2						

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

FRENCH SERIES.

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

Alençon, Normal School	29.64	752.9	30.19	766.9	50.9	10.5	62	NE			4		5kn		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.11	764.8	30.22	767.6	54.7	12.6	93	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.92	760.0	30.18	766.6	53.2	11.8	37	SE			2		8kn		E	0	0		Klein, Commandant.
Avignon, Normal School	29.66	753.4	29.74	755.4	56.8	13.8	52	N			6		2n		N	0.059	1.5		Giraud, Director.
Bar-sur-Seine	29.46	748.3	30.02	762.4	56.7	13.7	27	NNE			3		2ck		NE	0	0	Slightly cld'y	C. Saillard, Director.
Beauvais, Normal School	29.91	759.6	30.18	766.5	52.9	11.6	36	NE			3		k			0	0		Frère Eugene Marie.
Besançon, Normal School	29.06	738.2	29.96	761.0	51.1	10.6	49	NE			6		8		NE	0.217	5.5	Very cloudy	A. Carré, Director.
Bordeaux	29.74	755.5	29.94	760.5	56.1	13.4	34	NNE			2		8		NNE	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.99	736.4	29.91	759.6	51.1	10.6	56	N			1		10n	N	N	0.094	2.4	Covered	Marlot, Director.
Bourges, Normal School	29.47	748.6	30.03	762.8	52.9	11.6	44	NE			4		2c		NNE	0	0	Slightly cld'y	M. Gence, Director.
Brest, Naval Observatory	29.97	761.3	30.22	767.5	54.3	12.4	61	NE			3		9		NE	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	30.07	763.6	30.14	765.5	52.7	11.5	70	W			2		5		N	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.45	748.0	29.87	758.6	55.4	13	53	W			3		5		W	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.77	756.2	30.09	764.2	58.6	14.8	48	ENE			3		2		NE	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.53	750.0	30.10	764.5	54.5	12.5	93	NE			4		5		W	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.55	725.1	29.91	759.8	49.1	9.5	49	N			3		10		NE	0	0		Allnard, Director.
Commercy, Normal School	29.19	741.3	30.06	763.5	51.1	10.6	82	N			4		kn	N	N	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.57	725.6	29.71	754.6	55.4	13	57	NW			2		8		NW	0.020	0.5		L. Kina, Director.
Grenoble, Normal School	29.06	738.0	29.87	758.6	47.5	8.6	78	NW			1		8kn			0	0	Very cloudy	Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.91	759.8	30.13	765.2	56.5	13.6	42	NE			3		5		NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.85	758.1	30.16	766.0	52.7	11.5	45	NE			4		8		NE	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.97	735.9	29.87	758.8	50.0	10	42	NE			3		5n		SW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	30.08	764.0	30.19	766.8	55.0	12.8	43	NE			2		2		NE	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.24	742.7	29.86	758.5	53.1	11.7	51	NNE			3		10		ENE	0.165	4.2	Covered	Ch. André, Director.
Macon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.41	747.0	29.68	753.8	58.5	14.7	54	WNW			2		9		NNE	0.051	1.30		E. Stephan, Director.
Mirecourt, Normal School	29.00	736.6	30.05	763.2	50.0	10	42	NE			4		k		NE	0	0		Barbier, Director.
Mont-Louis	24.59	624.6	29.83	757.6	39.6	4.4	55	NE	16.8	7.5			8		N	0	0		M. Cave, for Dr. Fines.
Nice	29.61	752.1	29.65	753.0	64.4	18.0	71	W			2		10	SW	W	0.039	1.0	Covered	Capt. Boissière, Director.
Nismes, Normal School	29.56	750.8	29.76	756.0	58.5	14.7	31	NW			4		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.71	754.7	29.82	757.4	57.6	14.2	30	NW	29.8	13.3			2	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.33	567.1			30.7	— 0.7							1	SW	NE	0	0	Clear	M. Baylac, for Gen'l de Nansou'y
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.79	731.2	29.86	758.5	48.2	9	58	N			4		5kn	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	24.96	634.0			29.8	—1.2	100	NNE			6		8			0.083	2.1		Allnard, Director.
Rochefort, Naval Obs'y	30.07	763.7	30.10	764.5	57.2	14.0	47	NE			3		10	ENE	NE	0	0	Covered	Lt E. Devante, Director
Rouen, Normal School	30.08	764.0	30.17	766.2	56.1	13.4	40	ENE			2		8		ENE	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.17	766.4	30.21	767.2	56.8	13.8	52	NNE			4		1	NNE	NNE	0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.96	761.0	30.13	765.2	55.4	13.0	32	NE			4		2		NNE	0	0	Slightly cld'y	E. Renou, Director.
Tarbes, Normal School	28.87	733.3	29.94	760.5	57.2	14	78	NW											T. Huguet, Director
Toulouse, Observatory	29.24	742.8	29.97	761.2	54.0	12.2	52	NW			3		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.89	759.1	30.08	764.1	57.2	14.0	35	ENE			3		5		E	0	0	½ covered	M. de Tastes.
Versailles, Observatory	29.65	753.0	30.14	765.5	54.7	12.6	36	NE			3					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.17	740.9	29.88	759.0	53.1	12.3	51	NNE			4		5			0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.15	765.7	30.17	766.4	78.8	26										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.85	758.1			52.7	11.5	34	NNE			3		6		NE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.65	753.0	29.67	753.6	68.7	20.4	98	SE	5.6	2.5			4			0.524	13.3	Threatening	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.16	740.6	30.02	762.5	51.3	10.7	49	NE			8		5n	NE		0.020	0.5	Hailing	Prof. Dr. Hoh.
Berlin	29.84	757.8	30.01	762.2	55.0	12.8	38	N			1		7			0	0		Prof. Dr. Arndt.
Breslau	29.41	747 1	29.94	760.5	43.2	6.2	84	N			4		10			0.700	17.78		Royal University Obs'y
Carlsruhe	29.59	751.5	30.02	762.4	52.5	11.4	56	NE			3		5	E		0	0		Albert Senz.
Cassel	29.46	748.3	30.07	763.8	51.8	11.0	36	NE			5		8	NW		0.010	0.24		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.75	755.6	30.11	764.8	56.4	13.0	7	NE			4		5			0	0		Physical Society.
Friedrichshafen	28.52	724.4	29.98	761.5	45.5	7.5	71	NNE			8		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.04	763.0	30.11	764.8	54.1	12.3	54	NNE			5		5			0	0		Dr. Reinhold Kleemann.
Kiel	30.10	764.6	30.12	765.0	51.4	10.8	45	NNE			2		2			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.89	759.2	29.97	761.3	47.8	8.8	77	N			5		10	N		0	0		Prof. E. Luther.
Köslin			29.99	761.7	53.8	12.1		NW			4		4			0	0		H. Müller.
Leipsic Observatory	29.61	752.2	30.04	762.9	53.6	12.0	36	NNW			3		9	NNW		0	0		Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29.85	758.1	30.08	763.9	55.4	13.0	47	NNE			5		6ks	NNE		0	0		Dr. Assmann.
Memel	29.93	760.3	29.98	761.5	47.8	8.8	60	NNW			4		10n					Lt. showers	Reinbrecht & Issermann.
Munich	28.12	714.3	29.98	761.5	40.1	4.5	87	NW			4		10	NW		0.571	14.5	Light rain	Dr. C. Lang.
Neufahrwasser	29.98	761.6	30.00	762.0	48.9	9.4	60	NNE			3		10			0	0		A. Lothes.
Neustadt (Palatinate)																			Reallehrer Dicknether.
Posen	29.68	753.8	29.97	761.2	48.2	9.0	51	N			6		10			0.063	1.6		Prof. Dr. Magener.
Strassburg (in Alsace)	29.50	749.4	30.06	763.5	51.8	11.0	50	NE			5		8	ENE		0	0		Imp. University Observatory.
Stuttgart	29.05	737.8	29.95	760.7	50.9	10.5	38	NE					9	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.49	723.6	30.07	763.6	47.5	8.6	66	NNE	3.8	1.7			10		N	0.346	8.8		Reallehrer J. Hopfner.
Wustrow	30.08	764.0	30.10	764.6	51.3	10.7	57	N			2		4s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.36	745.8	29.75	755.6	69.1	20.6		SW			3.0		5					⅛ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.70	754.3	29.75	755.6	84.9	29.4	76	SW					9		W	0	0	Gloomy	
Deesa	29.23	742.3	29.68	753.9	99.8	37.7	21	W	16.1	7.2			0			0	0	Blue sky	
Bombay	29.81	757.2	29.85	758.2	85.4	29.7	68	WNW	11	4.9			0			0	0	Blue sky	
Poona (Yarrowda)	27.96	710.2	29.78	756.4	88.8	31.6	40	WNW	28	12.5			0			0	0	Blue sky	
Belgaum	27.29	693.1	29.79	756.7	81.9	27.7	58	W	13	5.8			0			0	0	Misty	
Lahore	28.84	732.6	29.55	750.5	103.3	39.6	21	Calm	1.0	0.4			0			0	0	Misty	
Roorkee	28.80	731.5	29.70	754.4	76.8	24.9	57	N	8	3.6			10					Hail-storm	
Agra	29.04	737.5	29.58	751.4	94.6	34.8	31	SE	6.1	2.7			0			0	0		
Nagpur	28.62	726.8	29.60	752.0	104.4	40.2	11	NW	4.9	2.2			2		W	0	0	D. clouds	
Jubbulpore	28.33	719.5	29.63	752.7	100.9	38.3	12	W	4.4	2.0			2			0	0	D. clouds	
Lucknow	29.31	744.5	29.68	753.8	93.0	33.9	50	E	6.6	3.0			0			0.01	0.3	Blue sky	
Allahabad	29.34	745.2	29.64	752.9	89.7	32.1	50	Calm	4.7	2.1			0			0.04	1.0	Blue sky	
Patna	29.55	750.6	29.73	755 2	79.1	26.2	87	E	1.4	0.6			6	E	E	0.78	19.8	D. clouds	
Hazaribagh	27.72	704.0	29.74	755.3	74.0	23.3	70	Calm	9 5	4.2			7			0.06	1.5	Thunder-showers	
Cuttack	29.62	752.2	29.70	754.3	88.7	31.5	62	S	5.4	2.4			0			0.72	18.3	Blue sky	
Calcutta (Alipore)	29.77	756.0	29.79	756 6	72.7	22.6	93	WNW	6.0	2.7			10					Showery	
Goalpara	29.35	745.4	29.75	755.7	80.1	26.7	83	Calm	2.1	0.9			4	ESE	ESE	0	0	D. clouds	
Chittagong	29.71	754.5	29.80	756.8	82.5	28.1	82	SSE	5.3	2.4			6			0	0	D. clouds	
Sibsagar	29.45	748.0	29.78	756.5	82.2	27.9	75	ENE	1.6	0.7			10	W	W	0.02	0.5	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.25	743.0	29.66	753.3	64.4	18.0	45	Calm	0	0			9			0.024	0.6		Prof. Giovanni Clodig.
Milan	29.13	740.0	29.65	753.0	62.4	16.9	60	N	0.7	0.3			9	NE		0.146	3.7		Prof. Schiaparelli.
Padua	29.55	750.5	29.65	753 2	60.1	15.6	66	E	13.0	5.8			10	E		0.166	4.2		Prof. Dott. Lorenzoni.
Moncalieri	28.76	730.5	29.66	753.4	58.6	14.8	70	S	2.5	1.1			6	N		0.110	2.8		Prof. P. F. Denza.
Genoa	29.43	747.6	29.62	752.4	63.5	17.5	55	NE	3.1	1.4			10	NE		0.118	3.0		Prof. G. M. Garibaldi.
Mondovi	27.78	705.7	29.69	754.0	51.4	10.8	82	W			4		9			0.681	17.3		Prof. D. C. Bruno.
Pesaro	29.56	750.7	29.60	751.9	57.9	14.4	82	N	8.1	3.6			9	SE		0	0		Prof. Luigi Guidi.
Florence	29.35	745.5	29.60	751.9	62.2	16.8	84	SW			2		10			0.114	2.9		Cav. F. Meucci.
Leghorn	29.56	750.8	29.64	752.9	59.2	15.1	73	WSW	1.3	0.6			10			0	0		Prof. P. Monte.
Rome	29.48	748.7	29.65	753.1	64.0	17.8	74	SSW	13.0	5.8			10			0.146	3.7		Prof. P. S. Ferrari
Lecce	29.41	747.1	29.66	753.4	67.6	19.8	48	SW	12.5	5.6			4			0.409	10.4		Prof. C. De Giorgi.
Cosenza	28.87	733.2	29.74	755 4	61.3	16.3	71	SSW	1.3	0.6			10			0.130	3.3		Prof. D. Conti.
Cagliari	29.60	751.9	29.79	756.7	63.1	17.3	41	NW			4		3	WNW		0	0		Prof. A. Pacinotti.
Palermo	29.58	751.4	29.83	757.7	64.9	18.3	45	WSW	8.7	3.9			6	WSW		0.193	4.9		Prof. G. Ciaociatore.
Syracuse	29.65	753.2	29.70	754.3	70.5	21.4	36	WNW	13.7	6.1			6	WNW		0.047	1.2		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.20	741.7	29.72	754.8	59.2	15.1	67	S	9.8	4.4			10	NW		0.166	4.2		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.2	16.8	92	SW	0.5	0.2			10n			1.396	35.46	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.62	752.3	29.82	757.4	63.5	17.5	96	E	6.8	3.0			10n			3.420	86.87	Raining	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.88	758.9	29.95	760 7	63.0	17.2	76	SSW	11.2	5.0		0	0			0.460	11.68	Clear	The Staff.
Wakayama	29.87	758.7	29.93	760 2	65.2	18.4	76	SE	1.2	0.5		ck	10s			0.280	7.11	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	26.00	635.1	30.08	763.9	51.4	10.8	40	Calm			0	3cs	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	23.64	600.6			62.2	16.8	43	Calm	0	0		1s	k	SW	NW	0	0	Clear.	Vicente Fernandez.
Leon	24.59	619.5	30.01	762.2	63.3	17.4	60	NW			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.66	753.3	29.92	759.9	70.0	21.1	97	NE			1	2cs	0	SW		0	0	Foggy	F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.1	29.99	761.8	55.8	13.2	70	Calm	0	0		3k	0			0	0	Clear	The Staff
Morelia	23.99†	609.3†			67.1	19.5	42	SE			3	1c	4ck	E	S	0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.5	29.88	758.9	59.0	15.0	47	Calm			0	1cs	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.6	30.13	765.4	58.6	14.8	44	Calm	0	0		2ck	0	S		0.02	0.5	Fine	Prof. P. Spina.
San Luis Potosi	24.18	614.1	30.00	762.0	68.0	20.0	76	SE			1	0	0			0	0	Clear.	G. Barroeta, M. D.
Tlacotalpam	29.82	757.3	29.83	757.6	80.4	26.9	83	SE			1	4	4	E	W	0	0	Hazy	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.57	573.2	30.13	765.2	58.3	14.6	40	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.24	768.2	30.24	768.2	50.0	10.5		N			4					0	0		
Groningen	30.15	765.8	30.21	767.2	50.2	10.1		N								0	0		
Helder	30.23	767.9	30.23	767.9	47.5	8.6		N			4					0	0		
Hellevoetsluis	30.23	767.8	30.23	767.8	52.5	11.4	55	N			4					0	0		
Utrecht	30.17	766.3	30.22	767.5	51.6	10.9	53	NNE			3		5			0.161	4.1	Cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.10	764.5	30.15	765.9	46.4	8.0	62	W	1.1	0.5			8			0.122	3.1	Raining	
Brōno	30.06	763.5	30.10	764.5	39.9	4.4	62	NNW	9	4			8			0	0		
Christiania	29.87	758.8	30.02	762.5	55.9	13.3	23	SW	0	0			6			0	0		
Tromsō	29.94	760.4	29.99	761.8	34.9	1.6	89	SW	4	2			8			0.059	1.5		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.17	766.2	30.38	771.6	63.3	17.4	78	ENE			2		3			0	0		Dr. J. A. Sampaio.
Campo Major	28.89	733.9	29.95	760.8	56.1	13.4	75	SSW	6.3	2.8			7			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.05	763.3	30.14	765.5	62.8	17.1	61		1.8	0.8			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.60	751.9	29.97	761.1	58.1	14.5	63	WNW	13.6	6.1			8			0.016	0.4		The Staff.
Ponta Delgada (Azores)	30.18	766.6	30.25	768.4	65.5	18.6	57	NNE	7.4	3.3			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mossamedes, Benguela			29.93	760.1	73.8	23.2		WSW			1		0			1	WSW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.30	769.6	76.1	24.5		NE			2		0			1	SE		Blue sky	Antonio Sarmento, Q.M
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello St. Paul de Loando			29.90	759.5	78.4	25.8		WNW			3		2			2	W		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.04	763.0	84.6	29.2		SW			2		2		SW	1			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.92	760.0	29.94	760.5	43.7	6.5	64	W	13	6			10						Capt. Sseliwerstow.
Astrakhan	30.09	764.3	30.01	762.2	57.6	14.2	80	E	18	8			10n			Blank	Blank		Capt. Wisganow.
Barnaul	29.63	752.6	30.14	765.6	44.1	6.7	60	W	4	2			9						Meteorological Obs.
Dorpat	29.80	756.8	30.04	763.1	41.7	5.4	91	NE	7	3			10n					Light rain	Prof. Dr. Weihrauch.
Ekaterinburg	29.28	743.6	30.22	767.5	68.0	20.0	25	W	18	8		ck	4ks						Meteorological Obs.
Irkutsk																			
Kasan	29.93	760.1	30.19	766.7	72.9	22.7	28	S	9	4			7						Physical Cabinet.
Kertch	29.89	759.3	29.91	759.8	56.8	13.8	76	Calm	0	0			3						Lagorio.
Kieff	29.20	741.6	29.81	757.1	65.1	18.4	43	E	4	2		c;ck	8ks						Physical Cabinet.
Krotkowo*	29.61	752.1	30.07	763.6	72.5	22.5	25	SW	7	3			4ks						Cand. Fatjanow.
Lugan	29.64	752.9	29.84	758.0	67.6	19.8	50	SSE	4	2			9						Meteorological Obs.
Moscow	29.48	748.9	30.02	762.4	68.2	20.1	40	S	7.8	3.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.78	756.5	29.85	758.3	68.0	20.0	50	S	13	6			9ks;n						Kurdakof.
Nikolaievsk, on the Amoor																			
Nukuss	29.67	753.7	29.89	759.3	82.9	28.3	14	ENE	22	10			1s						
Orenburg																			
Pekin (China)	29.53	750.1	29.67	753.7	73.0	22.8	67	SW	11	5			4cs						Physical Observatory.
St. Petersburg	30.03	762.7	30.04	763.1	40.8	4.9	89	ENE	7	3			10n					Raining	Central Physical Obs.
Tashkend	28.31	719.2	29.79	756.6	83.5	28.6	44	Calm	0	0			0						Teich, A. M.
Tiflis	28.50	723.9	29.85	758.2	77.5	25.3	30	N	4	2			0						Physical Observatory.
Vladivostock																			
Warsaw	29.37	746.0	29.80	756.8	47.5	8.6	87	NNE	18	8			10ks						Astronomical Obs.
Wilna	29.44	747.8	29.85	758.2	59.7	15.4	78	N	4	2			9						Astronomical Obs.
Yeniseisk	29.65	753.1	29.94	760.5	41.7	5.4	54	W	4	2			2						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.69	754.1	29.80	756.8	60.8	16	59	SE	4.2	1.89			1k			0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	29.98	761.4	30.03	762.8	57.4	14.1	53	NE	1.7	0.76		3	2	SW		0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.95	684.6			51.8	11.0	59	NE	8.9	4.00			1			0	0	Almost clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.65	702.4	29.82	757.3	64.0	17.8	51	SW	8.9	4.00		10	0			0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.67	753.7	29.82	757.4	77.5	25.3	42	NW	2.7	1.22		2	3	NW		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.94	735.0	29.83	757.7	55.8	13.2	74	E	0	0			10			0.043	1.1	Raining	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.89	759.2	29.95	760.8	77.6	25.3	86	ESE	1.8	0.8		5ck	8k;sk	S	SE	0.299	7.6	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.2	29.90	759.5	86.0	30.0	69	ESE	5.5	2.5						0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.91	759.7	30.01	762.2	61.2	16.2	72	W	7.0	3.1		0	9		W	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.95	760.8	30.04	763.1	79.5	26.4	86	E	4.7	2.10		6ks	3k	E	E	0	0	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.03	762.7	30.07	763.7	38.1	3.4		S			2		9			0.315	8.0		
Umea	29.98	761.4	30.03	762.7	39.6	4.2	80	NE			2		9			0.339	8.6		
Hernosand	29.94	760.5	29.99	761.8	47.5	8.6	33	NW			4		8			0.083	2.1		
Stockholm	29.84	757.8	30.01	762.3	49.6	9.8	33	NE			4		5			0.114	2.9		
Wisby	29.92	759.9	29.98	761.4	45.7	7.6	68	N			2		0			0	0		
Sub-Series.																			
Upsala	29.91	759.7	30.00	761.9	46.4	8.0	63	ENE	6.9	3.1			4	WNW	NW	0.015	0.38		Nils Ekholm.

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

SWEDISH NAVAL SERIES.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	Up'er 0-10.	Lo'er 0-10.	Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 46° 42′, W. 12° 42′			30.05	763.2	54.5	12.5	76	E			6		9						Squally.	J. P. Åhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	Up'er 0-10.	Lo'er 0-10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Geneva	28.41	721.5	29.86	758.4	45.7	7.6	62	NNE			8		10			0	0	Covered	The Observatory.
Zurich	28.33	719.5	30.00	762.1	42.8	6.0	82	E			4		10		E	0.039	1.0	Covered	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.3 mm.; Thermometer, —7.9 Cent. Relative Humidity, +4 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	Up'er 0-10.	Lo'er 0-10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Constantinople			29.77	756.1	67.1	19.5	78	SSE	8	3.5			6		SW	0.256	6.5		The Observatory.
Fao, Persian Gulf																			
Valona			29.80	756.8	63.5	17.5		SW			2		5			1.38	35.	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.88	758.9	72.1	22.3	75	NNE			1	8ck				0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0-10.	Up'er 0-10.	Lo'er 0-10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.																			Hon. J. Ferguson.
Chatham, N. B.	29.99	761.7	30.05	763.3	46.4	8.0	62	S	2	0.9		2k	8ks	S		0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.02	762.5	30.07	763.8	40.8	4.9	87	SW	4	1.8			10s			0	0	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.78	756.4	29.97	761.2	51.3	10.7	74	E			2	7cs	0			0	0	Fair	James Smith, M. A
Dalhousie, N. B.	29.90	759.4	30.07	763.8	39.0	3.9		W			1	0	3s			0	0	Fair	H. A. Johnson.
Father Point, Quebec	30.06	763.5	30.08	764.0	39.0	3.9	82	NE	2	0.9		0	4ks			0.05	1.3	Clear.	J. McWilliams.
Fredericton, N. B.	30.02	762.5	30.08	764.0	46.3	7.9	84	Calm	0	0			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.70	729.0	29.51	749.5	52.0	11.1	86	NW	4	1.8		9k	4ks	W		0.030	0.76	Cloudy	James Stewart.
Granton, Ontario	28.76	730.5	29.86	758.4	71.0	21.7	62	SW			2	0	0			0	0	Clear.	James Grant.
Halifax, N. S.	30.01	762.2	30.15	765.8	39.8	4.3	94	SE	4	1.8			10n			0.161	4.09	Cloudy	A. Allison.
Hamilton, Ontario	29.52	749.8	29.89	759.2	59.7	15.4	86	SE			1	0	0			0.06	1.5	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.51	749.5	29.84	757.9	64.4	18.0	83	S	4	1.8		8ck	0	SW		0.09	2.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.03	762.7	30.07	763.8	48.6	9.2	68	S	4	1.8			8n			0	0	Cloudy	C. H. Rigby.
Montreal, Quebec	29.75	755.6	29.95	760.7	50.0	10.0	72	NE	10	4.5		2c	0			Inap.	Inap.	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	29.69	754.1	29.72	754.9	48.5	9.2	53	SE			3		10n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.15	740.4	29.81	757.2	72.0	22.2	59	SW	7	3.1		2ck	0			0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.11	739.4	29.78	756.4	61.0	16.1	77	S	9	4.0		2ck	2ks	SW		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.12	739.6	29.83	757.7	71.7	22.1	62	SW			2	0	0			0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.21	741.9	29.88	758.9	59.1	15.1	94	SW	6	2.7		0	0			0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.24	742.7	29.88	758.9	58.6	14.8	71	SE	5	2.2		7ck	0	S		0	0	Fair	M. Payne.
Quebec, Quebec	29.73	755.1	30.06	763.5	43.0	6.1	67	E			6	0	5s			0.08	2.0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.35	745.5	29.81	757.2	51.1	10.6	86	SE	8	3.6			8ks			0.05	1.3	Cloudy	W. H. McIntyre.
St. John, N. B.	29.90	759.4	30.07	763.8	42.0	5.6	91	E	5	2.2			10ks			0.225	5.72	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.07	738.4	29.76	755.9	65.2	18.4	74	S	11	4.9			10ks			0.01	0.3	Cloudy	K. Stewart.
Stratford, Ontario	28.57	725.7	29.79	756.7	67.8	19.9	70	SW	13	5.8		2ck	3s	SW		0.535	13.59	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	30.07	763.8	30.11	764.8	41.6	5.3	69	SW	5	2.2			10s			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.49	749.0	29.87	758.7	59.6	15.3	82	W	3	1.3		5cs	0	W		0	0	Fair	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.80	731.5	29.81	757.2	73.4	23.0	58	S	15	6.7		4c	0			0.04	1.0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.99	761.7	30.06	763.5	46.4	8.0	98	S	6	2.7			Fog			0.31	7.9	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.90	759.4	30.16	766.1	41	5.0	82	W				2c	0			0	0	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime.			30.08	764.0	42.8	6.0		W			2					0	0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.01	762.2	63	17.2	83	S	8	3.6			10s		Calm	0	0	Cloudy	
Alpena, Michigan	29.06	738.1	29.68	753.9	56	13.3	87	SW	10	4.5		8c	2s	Calm	SW	0.88	22.4	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.03	762.7	66	18.9	84	E	8	3.6			10s		SE	0	0	Cloudy	
Atlantic City, New Jersey	30.08	764.0	30.10	764.5	62	16.7	88	S	2	0.9		Haze	Fog	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.96	761.0	30.15	765.8	71	21.7	85	SE	3	1.3		8cs	0	E		0	0	Fair	
Baltimore, Maryland	30.03	762.7	30.08	764.0	68	20.0	74	S	6	2.7		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	30.06	763.5	30.08	764.0	60	15.6	82	E	4	1.8		0	Haze		Calm	0.02	0.5	Clear	
Bismarck, Dakota	27.79	705.8	29.64	752.8	46	7.8	85	NW	6	2.7			10s		N	0.29	7.4	Cloudy	
Boerne, Texas	28.37	720.6	29.63	752.6	70	21.1	90	S	6	2.7			10s		S	0	0	Cloudy	
Boise City, Idaho	27.05	687.1	30.01	762.2	37	2.8	90	W	2	0.9			10n		Calm	0.31	7.9	Heavy snow	
Boston, Massachusetts	29.88	758.9	30.03	762.7	64	17.8	78	SW	7	3.1		2c	2s	Calm	Calm	0	0	Fair	
Brackettville, Texas	28.62	726.9	29.62	752.3	72	22.2	90	E	12	5.4			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.44	722.4	29.40	746.7	48	8.9	93	N	8	3.6			10s		N	0.04	1.0	Cloudy	
Brownsville, Texas	29.75	755.6	29.80	756.9	80	26.7	78	S	8	3.6		0	0			0	0	Clear	
Buffalo, New York	29.18	741.1	29.85	758.2	68	20.0	60	SW	10	4.5		8k	Haze	SW	Calm	0	0	Fair	
Burkes, Arizona					56	13.3	35	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.65	753.1	29.94	760.5	59	15.0	82	SW	4	1.8		Haze	5ks		SW	0	0	Hazy	
Cairo, Illinois	29.51	749.5	29.88	758.9	71	21.7	80	SE	4	1.8		2ck	2ks	S	Calm	0.08	2.0	Fair	
Campo, California	27.28	692.9	29.85	758.2	35	1.7	90	E	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.17	766.3	30.18	766.6	73	22.8	81	SW	2	0.9		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	72	22.2	54	SW	12	5.4		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.15	765.8	30.17	766.3	70	21.1	90	NE	5	2.2		0	Haze		Calm	0	0	Clear	
Cape May, New Jersey	30.05	763.3	30.08	764.0	66	18.9	73	S	15	6.7		0	Fog		Calm	0	0	Clear	
Castroville, Texas	29.04	737.6	29.70	754.4	75	23.9	77	S	4	1.8			10s		S	0	0	Cloudy	
Cedar Keys, Florida	29.99	761.7	30.01	762.2	73	22.8	85	SE	13	5.8			10ks		E	0.19	4.8	Cloudy	
Charleston, South Carolina	30.07	763.8	30.12	765.0	77	25.0	69	E	7	3.1		0	0			0	0	Clear	
Charlotte, North Carolina	29.29	744.0	30.09	764.3	65	18.3	89	SW	1	0.4			10s;hz		S;Calm	0	0	Cloudy	
Chattanooga, Tennessee	29.26	743.2	30.04	763.0	69	20.6	75	Calm	0	0		2ck	0	S		0	0	Fair	
Cheyenne, Wyoming	23.79	604.3	29.73	755.1	30	−1.1	89	NW	3	1.3			10n		Calm	0.03	0.8	Light snow	
Chicago, Illinois	29.08	738.6	29.74	755.4	63	17.2	83	SW	9	4.0			10s		Calm	1.26	32.0	Cloudy	
Chincoteague, Virginia	30.10	764.5	30.12	765.0	68	20.0	83	SW	11	4.9		0	Haze		Calm	0	0	Clear	
Cincinnati, Ohio	29.30	744.2	29.92	760.0	73	22.8	48	S	10	4.5		10k	0	SW		0	0	Cloudy	
Cleveland, Ohio	29.21	741.9	29.90	759.4	74	23.3	49	S	10	4.5		8cs	0	SW		0	0	Fair	
Coleman City, Texas	27.96	710.2	29.54	750.3	72	22.2	85	S	6	2.7			10s		S	0	0	Cloudy	
Columbus, Ohio	29.12	739.6	29.92	760.0	70	21.1	53	SW	3	1.3		5k	0	S		0	0	Fair	
Concho, Texas	27.84	707.1	29.42	747.3	72	22.2	85	S	10	4.5		0	0			0	0	Clear	
Corsicana, Texas	29.37	746.0	29.82	757.4	68	20.0	84	S	8	3.6		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.04	737.6	29.65	753.1	63	17.2	72	S	20	8.9		5c	0	W		0.16	4.1	Fair	
Dayton, Washington T'y					38	3.3	71	NW			2	2k	0			0	0	Fair	
Deadwood, Dakota	25.09	637.3			32	0.0	79	Calm	0	0		2k	0	W		0.22	5.6	Fair	
Decatur, Texas	28.60	726.4	29.70	754.4	76	24.4	69	SW	16	7.2		5k	0	SW		0	0	Fair	
Delaware Breakwater, Del.	30.07	763.8	30.10	764.5	69	20.6	61	SW	17	7.6		0	Haze			0	0	Clear	
Denison, Texas	28.95	735.3	29.70	754.4	72	22.2	80	S	14	6.3		0	8ks		SW	0	0	Fair	
Denver, Colorado	24.49	622.0	29.71	754.6	35	1.7	61	NW	5	2.2		2ck	5s	W	W	0	0	Fair	
Des Moines, Iowa	28.82	732.0	29.68	753.9	53	11.7	61	SW	4	1.8		0	0			1.09	27.7	Clear	
Detroit, Michigan	29.14	740.1	29.78	756.4	66	18.9	69	SW	10	4.5			10s		W	0	0	Threatening	
Dodge City, Kansas	27.16	689.8	29.42	747.3	44	6.7	12	NE	4	1.8		0	0			0	0	Clear	
Dubuque, Iowa	28.96	725.6	29.63	752.6	57	13.9	58	SW	10	4.5		0	Haze		Calm	0.87	22.1	Clear	
Duluth, Minnesota	28.70	729.0	29.36	745.7	42	5.6	91	SW	2	0.9		10k	0	SW		0.30	7.6	Cloudy	
Eagle Pass, Texas	29.04	737.6	29.73	755.1	75	23.9	86	SE	8	3.6			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.01	762.2	30.08	764.0	44	6.7	96	SE	2	0.9			10s;fg		Calm	0.27	6.9	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.22	742.2	29.89	759.2	75	23.9	48	W	11	4.9		0	0			0	0	Clear	
Escanaba, Michigan	28.91	734.3	29.54	750.3	49	9.4	85	S	8	3.6			Fog		Calm	0.43	10.9	Foggy	
Florence, Arizona	28.26	717.8	29.86	758.4	59	15.0	70	NE	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	24.91	632.7	30.36	771.1	40	4.4	56	E	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.65	702.3	29.48	748.8	35	1.7	80	NW	3	1.3		5c	0	Calm		0	0	Fair	
Fort Custer, Montana	26.60	675.6			38	3.3	62	SW	4	1.8		5k	0	W		0	0	Fair	
Fort Davis, Texas	25.12	638.0	30.08	764.0	56	13.3	24	Calm	0	0		0	0			0	0	Clear	
Fort Elliot, Texas	26.70	678.2	28.87	733.3	53	11.7	25	NE	8	3.6		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.19	741.4	29.69	754.1	74	23.3	68	S	8	3.6			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.09	637.3	29.59	750.2	56	13.3	15	E	2	0.9		0	0			0	0	Clear	
Fort Griffin, Texas	28.43	722.1	29.62	752.3	72	22.2	85	S	12	5.4		0	0			0	0	Clear	
Fort Keogh, Montana	27.02	686.3			40	4.4	56	Calm	0	0		5ks	0	Calm		0.02	0.5	Fair	
Fort McKavett, Texas	27.54	699.5	29.35	745.5	72	22.2	85	S	11	4.9			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.46	722.9	29.50	749.3	72	22.2	90	S	14	6.3		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.75	704.8			42	5.6	83	N	16	7.2			10s		N	0.05	1.3	Cloudy	
Fort Verde, Arizona					52	11.1	35	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.08	713.2	29.65	753.1	43	6.1	75	S	10	4.5			10ks		Calm	0	0	Cloudy	
Galveston, Texas	29.83	757.7	29.87	758.7	75	23.9	86	S	7	3.1		0	2ks		S	0	0	Clear	
Grand Haven, Michigan	29.10	739.1	29.72	754.9	61	16.1	82	SE	24	10.7			10s		SE	1.49	37.8	Cloudy	
Helena, Montana					35	1.7	61	SW	4	1.8			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.12	739.6	29.86	758.4	67	19.4	79	SE	7	3.1			10s		Calm	0.20	5.1	Cloudy	
Indianola, Texas	29.84	757.9	29.87	758.7	76	24.4	77	S	7	3.1		Haze	1s	Calm	S	0	0	Clear	
Jacksboro, Texas	28.61	726.7	29.68	753.9	70	21.1	75	SW	12	5.4		0	0			0	0	Clear	
Jacksonville, Florida	30.02	762.5	30.05	763.3	73	22.8	85	E	6	2.7			10s		E	0.02	0.5	Cloudy	
Keokuk, Iowa	29.10	739.1	29.68	753.9	62	16.7	88	S	3	1.3			10s		SW	0.31	7.9	Cloudy	
Key West, Florida	29.95	760.7	29.99	761.7	77	25.0	82	S	6	2.7		5k	0	SE		0.02	0.5	Fair	
Kittyhawk, North Carolina	30.15	765.8	30.17	766.3	71	21.7	80	W	6	2.7		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.08	738.6	30.05	763.3	67	19.4	69	SW	5	2.2		2cs	1ks	SW	SW	0	0	Fair	
La Crosse, Wisconsin	28.80	731.5	29.51	749.5	53	11.7	61	SW	20	8.9		0	0			0.75	19.1	Clear	
La Mesilla, New Mexico	25.97	659.6	30.12	765.0	50	10.0	26	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.49	749.0	29.82	757.4	71	21.7	71	SE	8	3.6		0	0			0	0	Clear	
Leavenworth, Kansas	28.90	734.0	29.71	754.6	60	15.6	60	Calm	0	0		7k	0	SW		0.29	7.4	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.52	749.8	29.82	757.4	72	22.2	85	S	10	4.5		0	0			0	0	Clear	
Los Angeles, California	29.62	752.3	29.96	761.0	54	12.2	87	Calm	0	0		0	0			0	0	Clear	
Louisville, Kentucky	29.38	746.2	29.91	759.7	75	23.9	48	S	7	3.1		8c	0	Calm		0	0	Fair	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	75	23.9	44	S	1	0.4		0	Haze			0	0	Clear	
Madison, Wisconsin	28.61	726.7	29.55	750.6	60	15.6	77	S	17	7.6		2cs	0	W		1.17	29.7	Fair	
Marquette, Michigan	28.79	731.3	29.46	748.3	52	11.1	86	W	14	6.3		5k	2s	SW	SW	0.71	18.0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.15	715.0	29.81	757.2	74	23.3	86	SW	7	3.1			10s		SW	0	0	Cloudy	
Memphis, Tennessee	29.54	750.3	29.87	758.7	73	22.8	76	SE	10	4.5		0	0			0	0	Clear	
Milwaukee, Wisconsin	28.92	734.6	29.62	752.3	61	16.1	88	S	24	10.7		8c	0	SW		0.10	2.5	Fair	
Mobile, Alabama	29.92	760.0	29.96	761.0	71	21.7	90	NE	6	2.7		0	2s		Calm	0.14	3.6	Clear	
Montgomery, Alabama	29.79	756.7	30.02	762.5	71	21.7	90	E	4	1.8		0	9s		SE	0	0	Cloudy	
Morgantown, West Virginia	29.07	738.4	30.01	762.2	78	25.6	46	SW	4	1.8		8c	0	SW		0	0	Fair	
Mt Washington, N H	23.92	607.6	30.28	769.1	50	10.0	93	NW	27	12.1		2k	Sm'e	Calm	Calm	0	0	Fair	
Nashville, Tennessee	29.48	748.8	30.00	762.0	68	20.0	79	SE	4	1.8		10ck	0	S		0	0	Cloudy	
New Haven, Connecticut	29.96	761.0	30.07	763.8	59	15.0	82	SE	3	1.3			10s		Calm	0.04	1.0	Cloudy	
New London, Connecticut	30.03	762.7	30.08	764.0	57	13.9	100	SE	3	1.3			Fog		Calm	0.02	0.5	Dense fog	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	75	23.9	81	E	1	0.4		0	1s		Calm	0.17	4.3	Clear	
Newport, Rhode Island	30.02	762.5	30.07	763.8	54	12.2	93	S	4	1.8			Fog			0	0	Foggy	
New River, North Carolina					73	22.8	81	NE			1	Haze	Haze	Calm	Calm			Dense haze	
New York, New York	29.90	759.4	30.09	764.3	58	14.4	100	SE	1	0.4			Fog		Calm	Inap.	Inap.	Dense fog	
Norfolk, Virginia	30.08	764.0	30.14	765.5	74	23.3	55	W	3	1.3		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.88	682.7	29.46	748.3	38	3.3	63	W	8	3.6		5c	2s	W	Calm	0	0	Fair	
Olympia, Washington Ter	30.00	762.0	30.04	763.0	36.0	2.2	90	SW	8	3.6		5k	Fog	W	S	0.11	2.8	Fair	
Omaha, Nebraska	28.58	725.9	29.64	752.8	57	13.9	47	W	8	3.6		2c	1s	W	Calm	0.20	5.1	Fair	
Oswego, New York	29.59	751.6	29.90	759.4	70	21.1	75	S	6	2.7		5c	Haze	W		0.09	2.3	Fair	
Pembina, Dakota	28.61	726.7	29.42	747.3	48	8.9	85	N	7	3.1			10s		NW	0.01	0.3	Cloudy	
Pensacola, Florida	29.93	760.2	29.96	761.0	73	22.8	85	NE	9	4.0		0	9ks		SE	0.18	4.6	Cloudy	
Philadelphia, Pennsylvania	30.01	762.2	30.06	763.5	58	14.4	94	E	4	1.8			Fog		Calm	0	0	Foggy	
Phœnix, Arizona	28.59	726.2	30.35	770.9	60	15.6	65	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.48	444.0	29.69	754.1	13	—10.6	62	SW	56	25.0		10cs	0	SW		0.06	1.5	Cloudy	
Pilot Point, Texas	28.96	735.6	29.77	756.1	71	21.7	85	SW	16	7.2		10k	0	SW		0	0	Cloudy	
Ploche, Nevada	23.82	605.0	29.58	751.3	47	8.3	48	N	3	1.3		0	5s		NW	0	0	Fair	
Pittsburg, Pennsylvania	29.21	741.9	29.98	761.5	75	23.9	44	SW	10	4.5		0	0			0	0	Clear	
Port Huron, Michigan	29.16	740.7	29.79	756.7	66	18.9	64	SW	14	6.3		10cs	0	W		0.01	0.3	Cloudy	
Portland, Maine	30.00	762.0	30.05	763.3	53	11.7	73	E	3	1.3		0	0			0	0	Clear	
Portland, Oregon	30.04	763.0	30.11	764.8	43	6.1	83	SE	7	3.1			10s		NW	0.10	2.5	Cloudy	
Portsmouth, North Carolina					72	22.2	85	W	3	1.3		0	0			0	0	Clear	
Prescott, Arizona	24.60	624.8	29.96	761.0	58	14.4	17	SE	5	2.2		0	0			0	0	Clear	
Punta Rassa, Florida	29.95	760.7	29.97	761.2	73	22.8	90	E	10	4.5		2cs	0	Calm		0.05	1.3	Fair	
Red Bluff, California	29.65	753.1	30.01	762.2	49.0	9.4	71	N	3	1.3		0	0			0	0	Clear	
Rio Grande City, Texas	29.61	752.1	29.82	757.4	76	24.4	86	SE	7	3.1			10s		SE	0	0	Cloudy	
Rochester, New York	29.26	743.2	29.84	757.9	72	22.2	62	SW	10	4.5		5c	Fog	Calm	Calm	0	0	Fair	
Roseburg, Oregon	29.58	751.3	30.16	766.1	41	5.0	82	SE	2	0.9		1k	2s	Calm	Calm	0.15	3.8	Fair	
Sacramento, California	29.90	759.4	29.97	761.2	50	10.0	93	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.28	743.7	29.84	757.9	63	17.2	59	S	6	2.7			10n		Calm	0.79	20.1	Thunderstorm	
St. Paul, Minnesota	28.57	725.7	29.36	745.7	50	10.0	79	S	12	5.4			10s		S	0.05	1.3	Cloudy	
Salt Lake City, Utah	25.48	647.2	29.80	756.9	36	2.2	80	NW	2	0.9			10n		Calm	0.32	8 1	Heavy snow	
San Antonio, Texas	29.13	739.9	29.80	756.9	73	22.8	85	S	3	1.3			10s		S	0	0	Cloudy	
San Diego, California	29.81	757.2	29.88	758.9	58	14.4	88	SW	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.23	742.4	29.87	758.7	71	21.7	62	S	12	5.4		8c	0	SW		0	0	Fair	
Sandy Hook, New Jersey	30.03	762.7	30.07	763.8	55	12.8	100	SE	4	1.8		5k	Fog	Calm	Calm	0.02	0.5	Fair	
San Francisco, California	29.96	761.0	30.03	762.7	49	9.4	89	W	11	4.9		0	Fog		W	0	0	Fair	
Santa Fé, New Mexico	23.14	587.8	29.68	753.9	44	6.7	30	E	3	1.3		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.01	762.2	30.10	764.5	78	25.6	73	E	7	3.1		2c	0	Calm		0	0	Fair	
Shreveport, Louisiana	29.65	753.1	29.86	758.4	72	22.2	85	S	4	1.8		0	8s		Calm	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.12	765.0	30.16	766.1	72	22.2	90	S	4	1.8		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico	25.22	640.6	29.28	743.7	58	14.4	22	W	1	0.4		0	0			0	0	Clear	
Springfield, Illinois	29.12	739.6	29.76	755.9	62.5	16.9	83	S	16	7.2			10s;n		SW	2.08	52.8	Light rain	
Springfield, Massachusetts	29.94	760.5	30.07	763.8	59	15.0	82	S	3	1.3			Fog		Calm	0	0	Dense fog	
Stockton, Texas	26.79	680.4	29.79	756.7	64	17.8	48	SW	8	3.6			0			0	0	Clear	
Thatcher's Island, Mass	29.95	760.7	30.00	762.0	58	14.4	94	S	7	3.1			Fog			0	0	Dense fog	
Toledo, Ohio	29.17	740.9	29.82	757.4	70	21.1	66	SW	10	4.5			8s		SW	0	0	Cloudy	
Tucson, Arizona	27.38	695.4	29.93	760.2	65	18.3	34	SE	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.65	753.1	30.15	765.8	42	5.6	66	SW	10	4.5		0	0			0	0	Clear	
Uvalde, Texas	28.85	732.8	29.64	752.8	74	23.3	86	SE	4	1.8			10s		SE	0	0	Cloudy	
Vicksburg, Mississippi	29.70	754.4	29.95	760.7	70	21.1	90	SE	7	3.1		0	5s		SE	0	0	Fair	
Virginia City, Montana	24.03	610.4	29.51	749.5	23	— 5.0	73	Calm	0	0		8k	0	W		0.03	0.8	Fair	
Visalia, California	29.52	749.8	29.88	758.9	54.5	12.5	87	NW	3	1.3		1ck	0	Calm		0	0	Clear	
Washington, D. C	29.98	761.5	30.09	764.3	72	22.2	62	S	6	2.7		Haze	0	Calm		0	0	Clear	
Wickenburg, Arizona					54	12.2	43	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.08	764.0	30.15	765.8	72	22.2	80	E	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.53	648.4	29.89	759.2	37	2.8	81	SW	4	1.8		0	5ks		SW	0.05	1.3	Fair	
Wood's Holl, Massachusetts	30.03	762.7	30.07	763.8	53	11.7	93	SW	12	5.4			Fog		SW	0	0	Foggy	
Yankton, Dakota	28.37	720.6	29.63	752.6	50	10.0	65	NW	16	7.2		0	0			0	0	Clear	
Yuma, Arizona	29.56	750.8	29.70	754.4	59	15.0	59	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			59.0	15.0	69	Calm	0	0			10ks			Inap.	Inap.	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.94	760.5	29.99	761.7	78	25.6	82	SE	1.2	0.5		4cs	4ks	Calm	S	0.28	7.1	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.00	762.0	30.01	762.2	78	25.6	75	Calm	0	0		2ck	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.92	760.0	30.00	762.0	78	25.6	74	E	7	3.1		2k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	82	27.8	79	E			2	5k	8ks	E		0.040	1.02	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.42	747.3	29.97	761.2	80	26.7	89	N			1		10s			0.25	6.3		Francesco J. Cisneros.
Rivas, Nicaragua					75.2	24		SE				1cs	1k	SW	SE	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I	29.97	761.2	30.00	762.0	78	25.6	78	SE	2.4	1.1		0	8n		SE	0.625	15.88	H'y showers	Robert Mason
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.82	757.4	29.87	758.7	28.0	— 2.2	94	E	11	4.9		4k	4s	E	E	0	0	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	29.97	761.2	72	22.2	90	NE	12	5.4			8		NE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.00	762.0	56	13.3	75	E	2	0.9			10			0	0			Foggy	
Naval Hospital, Yokohama, Japan	29.98	761.5	64	17.8	78	SW			5		5s;h'z		Calm	0	0			Fair	
§ Adams, Punta Arenas, Costa Rica	29.91	759.7	79	26.1	86	N			2		8		N					Cloudy	
§ Alaska, Ancon, Peru *	29.95	760.7	64	17.8	94	Calm			0		10					Smooth		Misty	
§ Alert, N. 32° 23′, E. 139° 54′	30.02	762.5	72	22.2	76	S			4		10		Calm	0	0	Long	SE	Overcast	
§ Colorado, New York, N. Y.	30.07	763.8	57	13.9	100	E	3	1.3			8			0	0			Foggy	
§ Constitution, Hampton Roads, Va	30.14	765.5	70	21.1	85	SW	6	2.7			0							Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.17	766.3	70	21.1	70	WNW	6	2.7			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.02	762.5	51	10.6	100	W	4.8	2.1			2		W	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.92	760.0	40	4.4	100	NNW			1		10					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	29.98	761.5	78	25.6	91	ENE			1		10		ENE			Smooth		Light rain	
§ Marion, Off Flores Isl'd, Uruguay	30.07	763.8	61	16.1	82	ESE			1		0			0	0	Smooth	E	Hazy	
§ Michigan, Erie, Pa	29.71	754.6	74	23.3	63	SW			3		2		W					Hazy	
§ Monocacy, Shanghai, China	29.67	753.6	70	21.1	95	SE			1		8		SE					Cloudy	
§ New Hampshire, Port Royal, S. C.	30.14	765.5	76	24.4	82	E	9	4.0			1		Calm	0	0			Clear	
Nipsic. N. 41° 42′, E. 4° 15′	29.74	755.4	58	14.4	58	N			7		2		N			Long rough	N	D. clouds	
§ Onward, Ancon Bay, Peru †	29.97	761.2	64	17.8	89	NE			1		10					Long	W	Foggy	
§ Palos, Shanghai, China	29.69	754.1	71	21.7	95	SSE			1		5?							Cloudy	
§ Passaic, Washington, D. C.	30.09	764.3	68	20.0	74	SW			2		0			0	0			Clear	
§ Pensacola, San Francisco, Cal	30.01	762.2	54	12.2	80	WSW			3		8		SW			Smooth		Hazy	
§ Powhatan, Annapolis, Md	30.05	763.3	69	20.6	70	Calm			0		2							Fair	
§ Quinnebaug, Tangier, Marocco	29.98	761.5	65	18.3	63	W			4		5		W			Mod'ate	W	Fair	
§ Richmond, Shanghai, China	29.67	753.6	71	21.7	95	Calm			0		2		Calm	0	0			Fair	
§ Rio Bravo, Brownsville, Texas †	30.02	762.5	74	23.3	??	NNE	2	0.9			5		S	0	0			Fair	
§ Saratoga, N. 38° 15′, W. 35° 55′	30.31	769.9	67	19.4	74	S			4		2		SSE	0	0	Smooth		Fair	
§ Shenandoah, Montevideo, Uruguay	30.03	762.7	59	15.0	88	NE			1		0					Smooth		Hazy	
§ St. Louis, League Island, Pa	30.07	763.8	57	13.9	100	SE	4	1.8			10			0	0			Cloudy	
Swatara, N. 1° 23′, E. 103° 00′ †	29.84	757.9	84	28.9	87	NNE			2		5		Calm			Smooth		Fair	
§ Tennessee, N. 11° 01′, W. 75° 12′	29.90	759.4	79	26.1	96	NE	12	5.4			10		NE	0	0	Long	NE	Cloudy	
Ticonderoga, N. 33° 38′, E. 136° 20′	29.98	761.5	68	20.0	100	SE			1		10		S			Smooth	SSW	Drizzling	
§ Trenton, Tenedos, Archipelago	29.76	755.9	75	23.9	60	SSE			5		5			0	0	Mod'ate	S	Cloudy	
§ Tuscarora, Mare Island, Cal	30.04	763.0	52	11.1	93	W			3-4		0			0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.08	764.0	59	15.0	100	SE			1		10							Foggy	
§ Wabash, Boston, Mass	30.03	762.7	60	15.6	94	SW	5	2.2			10			0	0			Overcast	
§ Wachusett, Montevideo, Uruguay	30.01	762.2	61	16.1	100	NE			1		2		N	0	0	Mod'ate	SE	Hazy	
Wyoming, Constantinople, Turkey	29.74	755.4	62	16.7	77	Calm			0		5		S			Smooth	S	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of vessels and captains.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
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S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
Liverpool, Eng	30.23	767.8	56	13.3	75	NW			6		2		NW	0	0			Clear	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			
N. 47° 40′, W. 29° 27′ *†	30.20	767.1	59	15.0	94	SE			5		8		SE	0	0	Mod'ate	SE	Cloudy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
N. 22° 57′, W. 108° 35′ †	29.90	759.4	72	22.2	95	SE			2		2		SW	0	0	Small	WSW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Haine																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch,																			
N. 49° 29′, W. 14° 53′	30.30	769.0	60	15.6	65	E			4–5		2		E			1	SE	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer,																			S. Ririus.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer,																			
N. 28° 18′, E. 117° 55′ †	29.87	758.7	75	23.9	95	SW			3		5		SW			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley,																			
San Francisco, Cal. †	29.88	758.9	53	11.7		SW			5		ks		SW			Smooth			J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander,																			
Port Harford, Cal †	30.20	767.1	58	14.4		Calm			0		0							Clear	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California G. Debney,																			
Portland, Oregon †	30.03	762.7	42	5.6		W			2		5		NW					Pleasant	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 30° 26′, W. 118° 05′....†	29.85	758.2	60	15.6	88	NW			3		5		SE			Mod'ate	NW	Fair	F. A. Johnston.
§S. S. Australia, Sydney, N. S. W.	29.74	755.4				W			5		0					Smooth		Clear	Banneman.
§S. S. China, W. B. Seabury, N. 16° 12′, W. 98° 57′.....†	29.86	758.4	80	26.7	87	NNW			2		2		NW			Mod'ate	SW	Fair	
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of Panama, M. Connolly, N. 18° 58′ W. 104° 32′....†	29.94	760.5	76	24.4		ENE			2		0			0	0	Mod'ate	NW	Clear	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry.																			
§S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.79	756.7	61	16.1		NW			6		8		SW	0	0	Smooth		Squally	E. LeSack.
§S.S. City of Tokio, J. Maury, Yokohama, Japan.....†	30.17	766.3	68	20.0	79	WSW			3		0			0	0			Clear	F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama ... †	29.91	759.7	78	25.6	100				0–1		10		Calm	0.03	0.8			Cloudy	
§S.S. Dakota, D. E. Griffiths.																			
§S.S. Granada, J. M Cavarly																			D. E. Griffiths.
§S. S. Idaho, Esquimalt, Vancouver I'd.†	30.39	771.9				Calm			0		8		Calm	0	0	Smooth		Cloudy	
§S.S. Zalandia, R. C. Ghest, N. 20° 10′, W. 158° 05′....	30.00	762.0				Var.			2				NE			Mod'at	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 41° 21′, W. 46° 28′.....†	30.24	768.1	46	7.8		WNW			2		8		NW	0	0	Mod'ate	WNW	Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 41° 27′, W. 55° 43′.....†	30.18	766.6	46	7.8		N			2		5		NE	0	0	Smooth		D. clouds	W. S. Waugh.
S. S. Britanic, H. Perry, N. 51° 34′, W. 8° 32′.....†	30.49	774.4	52	11.1	93	ESE			3		0			0	0	Smooth		Very fine	J. Jones.
S. S. Celtic, B. Gleadell.																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.																			
Schr. Adele Fuller, J. Jorgensen, N. 40° 31′, W. 73° 00′.	30.06	763.5	61	16.1	71	SSW	4	1.8			Sm'e			0	0			Smoky	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 37° 07′, W. 72° 04′.....†	30.11	764.8	70	21.1		SW			1		0			0	0	Mod'ate	SE	Clear	J. Jorgensen L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 27° 15′, E. 43° 16′.....†	30.14	765.5	75	23.9		W			2		2		W	0	0	Smooth	S	Fair	B. F. Woodbury.
Brigantine George. W. H Champlin, Arroyo, Porto Rico	30.20	767.1	83	28.3		ENE			3		8		E	Sho	wers.	Smooth		Cloudy	
Hippolyta, N. 49° 05′, W 14° 17′.....*	30.03	762.7	57	13.9		NE			8		0			0	0	Mod'ate	NE	Fair	
Iron Cross, W. Randall.																			W. Randall.
Barque Syringa, E. Lewis.																			E. Lewis.

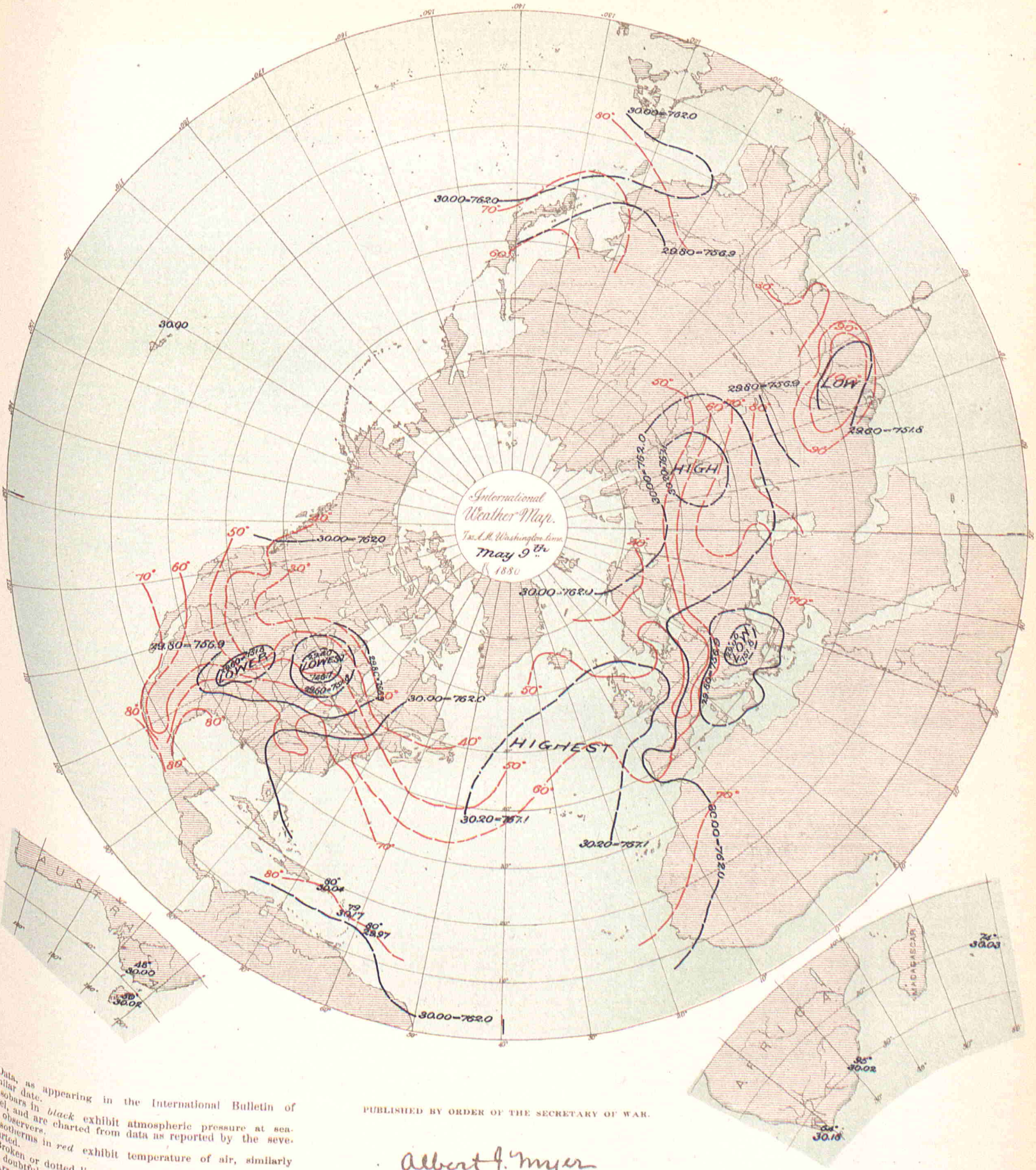
Note.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 10, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 1—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mogador, Marocco			30.10	764.5				W			1		2			0	0	Fair	Dr. Ollive.
Nemours			29.87	758.7	68.4	20.2	74	NNW			1		4			0.047	1.2	Cloudy	Metge.
Algiers			29.85	758.2	68.4	20.2	51	W			3		1			0	0	Very fair	Nicolas.
La Calle			29.83	757.7	64.9	18.3	78	NNE			2		5			0	0	Cloudy	Fonfrède.
Tunis			29.83	758.5															Jacques.
Sfax			29.93	760.2															Gau.
Saida			29.92	760.0															Bernard.
Tebessa			29.87	758.8	73.6	23.1	28	WSW			2		7			0	0	Very cloudy	Watrin.
Geriville					72.5	22.5	41	SE			1		0			0	0	Clear	Brugnlaux.
Laghouat			29.83	757.7	83.1	28.4	13	S			3		3			0	0	Pretty fair	Suart.
Biskra			29.74	755.5	85.3	29.6	83	E			1		3			0	0	Pretty fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 1—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Agram	29.30	744.1	29.84	757.9	57.4	14.1	60	NE			3		8			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.16	740.7	29.94	760.5	44.2	6.8	82	WSW	6.9	3.1			10			0.028	0.7		Dr. Wierzbicki.
Eperies	28.87	733.3	29.74	755.4	52.9	11.6	74	N			2		10ns			0.100	2.53		Julius Mikolik.
Gratz	28.60	726.4	29.84	757.8	54.7	12.6	56	E			2		10			0.004	0.1		Andreas Rospini.
Hermannstadt	28.29	718.5	29.70	754.4	54.9	12.7	94	NW			2		10			0.289	7.35		Prof. A. Gottschling
Kremsmünster, Observatory	28.56	725.3	29.91	759.6	48.7	9.3	71	Calm			0		8			0.571	14.5		The Staff.
Lemberg	28.76	730.5	29.74	755.3	54.0	12.2	90	NW			1		10			0.197	5.0		Dr. T. Stanecki.
Pola	29.70	754.3	29.81	757.1	61.3	16.3	50	ESE			1		7			0	0		I.R. Hydrographic Office.
Szathmar	29.26	743.3	29.71	754.7	64.8	18.2	82	NW			2		7			0.126	3.2	Raining	Pet. Pancsics, S. J.
Szegedin	29.49	749.0	29.77	756.1	52.5	11.4	69						10			0.018	0.45		Karl Stancel.
Trieste	29.71	754.7	29.82	757.3	64.2	17.9	53	E			2		8			0.035	0.9	Raining	P. Busin.
Vienna	29.18	741.1	29.92	760.0	50.4	10.2	55	NNW			3		9			0.039	1.0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 1—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels																			Royal Observatory
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 9, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	30.11	764.8	30.21	767.3	46.8	8.2		N	14	6.3			10			0.040	1.02	Overcast	W. Boswell.
Ardrossan	30.13	765.3	30.15	765.8	55	12 8		ENE			2		7					Raining	G.Carrick.
Armagh, (Observatory)	29.93	760.2	30.17	766.3	54.2	12.3		NE	12	5.4			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			30.09	764.3	49.8	9.9		WNW	12	5.4			10					Overcast	John Hartnup.
Bolton (Sharples)	29.53	750.0	30.05	763.3	49.5	9.7		SW	2	0.9			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.67	753.6	30.06	763.5	47.9	8.8	89	SW			3		10			0.20	5.1	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	30.00	762.0	81.5	27.5		NE			2		3					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.00	762.0	30.10	764.5	49.0	9.4		N			1		10					Drizzling	H. Todd.
Cardington			30.08	764.0	48.4	9.1		N			0-1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.96	761.0	30.09	764.3	47.1	8.4		N			0		9					Overcast	Sapper W. Gibson, R. E.
Donaghadee	30.12	765.0	30.17	766.3	50	10.0		N			4		10					Overcast	J. Mac Gowan.
Dover	30.04	763.0	30.07	763.8	50	10.0		E			3		5					¾ clouded	J. Costello.
Falmouth (Observatory)	29.89	759.2	30.12	765.0	51.0	10.6		SE			1		10					Overcast	The Staff.
Fort Napier, Natal	27.74	704.6	29.95	760.7	70.0	21.1		NE			1		7					Overcast	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.74	755.4	29.98	761.5	80	26.7		SE			1		8					D. clouds	
Galway (Queen's College)			30.11	764.8	54	12.2		NW			1		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.84	757.9	29.89	759.2	63.8	17.7		W			4		6					D. clouds	Sr.t. W. Allen.
Glasgow, (Observatory)	29.94	760.5	30.15	765.8	55 0	12.8		E			3		9k					Gloomy	D. G. Maclean.
Great Yarmouth	30.07	763.8	30.08	764.0	49	9.4		NNE			2		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.92	760.0	30.10	764.5	47.2	8.4		N			1		10					Raining	The Staff, for G.B.Airy.
Guernsey	29.88	758.9	30.10	764.5	50	10.0		NE			2		7					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.21	767.3	30.33	770.4	55	12.8		E			2	4ck				0	0	Fine	M. P. Moyle.
Holyhead	30.06	763 5	30.11	764.8	50	10.0		NNW			3		10					Overcast	John Tilston.
Jersey	29.81	757.2	30.11	764.8	47.0	8.3		NE			2		8					Gloomy	J. Fisher.
Kew (Observatory)	30.06	763.5	30.10	764.5	48.7	9.3		N	7	3.1			10					Raining	The Met'g'l Office.
Leicester (Museum)	29.83	757.7	30.09	764.3	48.0	8.9		NE			1		10					Drizzling	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.86	756.9	29.87	758.7	72	22.2		N			3		1					Blue sky	A. King.
Nairn	30.15	765.8	30.24	768.1	48	8.9		NE			4		10					Raining	W. D. Penny.
Nassau, Bahamas			30.01	762.2	79.0	26.1		SE			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.91	759.7	30.10	764.5	49.8	9.9		Calm			0		10d		NW	0.119	3.02	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.56	750.8	30.09	764 3	48.2	9.0		NNE			1		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.87	758 7	30.13	765.3	46	7.8		Calm			0		10					Raining	The Staff, for E. J. Stone, Esq.
Plymouth	30.03	762.7	30.10	764 5	51.7	10.9		SE			1		10					Overcast	John Merrifield.
*Roche's Point	30.09	764.3	30.19	766.8	55	12.8		N			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.93	760.2	30.09	764.3	51	10.6		NNE			4		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys			30.31	769.9	48	8.9		NE	26	11.6			10					Overcast	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.64	752.8	29.70	754.4	68.8	20.4		S			1		6			Blank	Blank		Serg't W. H. Lyne.
Sheffield	29.83	757.7	30.11	764.8	49.4	9.7		Calm			0		10			0.13	3.3	Raining	W. F. Cooper.
Silloth Rectory	30.07	763.8	30.10	764.5	52.4	11.3	78	NE			3		9			0.050	1.27	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.10	764.5	51.3	10.7		NNW	3	1.3			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.91	759.7	30.13	765.3	49.8	9.9		NE			1		10					Showery	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	30.14	765.5	30.17	766.3	58	14.4		N			4		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.16	766.1	30.19	766.8	54.0	12.2		N	11	4.9			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.12	765.0	30.16	766.1	68.0	20.0	64	S	21.8	9.7		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.12	765.0	45.0	7.2	81	S			2		7k			0.02	0.5		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.19	766.8	48.2	9.0		NE			3		10k			0.10	2.5	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.82	757.4	30.01	762.4	74.3	23.5	59	ESE	10.5	1.7		0	2			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.90	759.4	29.99	761.7	54.0	12.2	78	SSW	20	8.9			9			0.22	5.6	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.30	769.6	48	8.9		NNE			6	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.26	768.6				NE			4		7			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Direction from—	Weather.	Observer.
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 06′, W. 8° 30′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5	29.92	760.0	67.1	19.5	86	SE			1	1cs				Inap.	Inap	Clear	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.02	762.6	30.07	763.8	46.8	8.2	73	S			4		10					Raining	
Fanöe	30.03	762.7	30.05	763.2	51.6	10.9	61	WSW			4		2						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.26	768.6	30.30	769.7	52.2	11.2	85	S			6		2						
Thorshavn (Faröe)	30.39	772.0	30.43	772.9	50 5	10.3	79	SE			2		8						
Vestervig	29.96	761.0	30.06	763.4	55.8	13.2	38	E			4		5						

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.8	30.03	762.8	53.6	12	57	NE			2		5n		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.93	760.3	30.04	763.1	57.9	14.4	86	NE			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.76	755.9	30.02	762.5	52.2	11.2	47	NNE			1		7k		E	0	0		Klein, Commandant.
Avignon, Normal School	29.75	755.6	29.83	757.6	59.0	15	56	N			2		0			0	0	Clear	Giraud, Director.
Bar-sur-Seine	29.35	745.5	29.90	759.5	58.3	14.6	25	ESE			4		5kn		NE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.74	755.3	30.00	762.1	54.7	12.6	40	NE			2		k		ENE	0	0		Frère Eugene Marie.
Besançon, Normal School	29.00	736.6	29.88	759.0	54.5	12.5	52	E			1		8		NE	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.67	753.6	29.87	758.6	61.7	16.5	26	E			2		2		NNE	0	0	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.97	735.8	29.88	759.0	53.2	11.8	67	S			1		10n		N	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.39	746.6	29.95	760.6	56.1	13.4	48	NNE			4		2cs		NE	0	0	Slightly cld'y	M. Gence, Director.
Brest, Naval Observatory	29.84	757.9	30.08	764.2	51.4	10.8	58	NE			2		7		NE	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.93	760.1	30.00	762.0	51.8	11	86	NE			2		5		NE	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.39	746.6	29.80	756.9	62.2	16.8	35	WNW			2		2		WNW	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.64	752.9	29.96	761.0	60.3	15.7	48	NE			3		2		NE	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.36	745.8	29.93	760.2	55.9	13.3	98	N			1		4		W	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.48	723.5	29.84	757.9	51.8	11.0	46	NNE			1		10		N	0	0		Alluard, Director.
Commercy, Normal School	29.07	738.4	29.93	760.1	55.8	13.2	25	NE			4		kn	NE	NE	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.70	728.9	29.84	757.9	55.9	13.3	57	W			3		8		W	0	0		L. Kina, Director.
Grenoble, Normal School	29.07	738.3	29.84	757.8	52.5	11.4	75	WNW			1		8kn			0	0	Very cloudy	Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.82	757.3	30.03	762.7	60.1	15.6	45	NNE			1		5		NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.69	754.2	30.00	761.9	57.6	14.2	35	NE			3		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.91	734.3	29.83	757.7	54.0	12.2	43	NNE			2		5kn		SW			Cloudy	M. Cadoret, Director
Lyons Obs'y (Park Station)	29.95	760.7	30.06	763.5	56.8	13.8	43	NE			2		8		NE	0	0	¾ covered	Lt. T. Carré, Director.
Mâcon, Normal School	29.22	742.3	29.85	758.1	53.6	12.0	69	NNE			1		10					Raining	Ch. André, Director.
Marseilles, Observatory																			Galzin, Director.
Mirecourt, Normal School	29.53	750.1	29.80	756.9	57.7	14.3	56	WSW			2		5		SSW	0	0		E. Stephan, Director.
Mont-Louis	28.89	733.7	29.92	760.0	55.4	13	53	NE			3		k		NE	0	0		Barbier, Director.
Nice	24.59	624.6	29.83	757.6	43.3	6.3	73	E	18.6	8.3			7		S	0	0		M. Cave, for Dr. Fines.
Nismes, Normal School	29.71	754.6	29.74	755.4	65.8	18.8	72	SE			3		10	S	SE	0.020	0.5	Covered	Capt. Boissiere, Director.
Perpignan	29.60	751.9	29.80	757.0	56.7	13.7	42	N			1		5		W	0	0	Cloudy	M. Boyer, Director.
Pic du Midi (Plantade) H. P	29.72	754.9	29.83	757.6	58.8	14.9	39	SW	3.8	1.7			8		SW	0	0		Dr. Fines.
Pic du Midi (Summit) H. P	22.29	566.2			33.4	0.8							5	S	N	0	0	Cloudy	M. Baydac, for Gen'l de Nansouty
Privas, Normal School																			
Puy de Dome (Summit) Ob	28.80	731.5	29.87	758.8	48.6	9.2	71	S			1		5n	S	S	0	0	Cloudy	M. Tailleu
Rochefort, Naval Obs'y	24.93	633.3			32.0	0.0	78	NE			6		8			0	0		Alluard, Director.
Rouen, Normal School	29.95	760.6	29.98	761.4	63.3	17.4	84	NE			2		5	NE	NE	0	0	½ covered	Lt E. Decante, Director
Saint Malo (Port) Obs'y	29.93	760.2	30.02	762.4	57.4	14.1	44	NE			2		2		NE	0	0	Slightly cl'dy	Platrier, Director
Saint Maur (near Paris)	30.02	762.4	30.05	763.2	54.0	12.2	63	NNE			4		1	NNE	NNE	0	0	Misty	Lt. Hercouet, Director
Tarbes, Normal School	29.81	757.2	29.98	761.4	57.0	13.9	36	NE			1		8		NNE	0	0		E. Renou, Director.
Toulouse, Observatory	28.82	732.1	29.89	759.2	59.0	15	68	NW											T. Huguet, Director
Tours	29.19	741.4	29.91	759.6	55.4	13.0	47	NNW			2		5			0	0	Cloudy	B. Bailland, Dir.
Versailles, Observatory	29.76	756.0	29.96	761.0	57.2	14.0	39	NE			3		8		NNE	0	0	¾ covered	M. de Tastes.
Villefranche-sur-Saone, N.S	29.48	748.9	29.98	761.4	56.1	13.4	33	NE			2					0	0		Dr. A. Berigny, Director
SUB-SERIES.	29.10	739.1	29.81	757.1	55.4	13	66	NNW			1		10		NW	0	0	Covered	Nicot, Director.
Fort de France, Martinique	30.16	766.0	30.19	766.7	78.8	26										0.12	3.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.70	754.4			56.1	13.4	38	ENE			2		7		NE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.72	755.0	29.75	755.7	71.4	21.9	90	ESE	7.6	3.4			10			0.020	0.5	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 9:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m, or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Hamberg	29.08	38.5	29.93	760.3	55.0	12.8	34	NE			6		4k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.80	757 0	29.98	761.4	55.4	13.0	35	NE			8		9	E		0	0		Prof. Dr. Arndt.
Breslau	29.40	746.8	29.93	760.2	43.5	6.4	76	NW			3		10			0.115	2.93	Sprinkling	Royal University Obs'y
Carlsruhe	29.49	749.1	29.92	759.9	55.8	13.2	50	E			2		5			0	0		Albert Senz.
Cassel	29.37	746.0	29.98	761.4	55.2	12.9	27	NE			1		5	NW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.65	753.1	30.02	762.4	58.6	14.8	2	E			2		5			0	0		Physical Society.
Friedrichshafen	28.46	722.8	29.90	759.5	49.3	9.6	61	E			7		10	E		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.97	761.1	30.04	762.9	50.7	10.4	63	NNW			2		10			0:012	0.3		Dr. Reinhold Kleeman.
Kiel	30.00	762.0	30.02	762.4	54.1	12.3	34	NNE			3		7			0.043	1.08		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.74	755.5	29.83	757.6	47.3	8.5	95	NE			2		10			0.350	8.9		Prof. E. Luther.
Köslin			29.96	760.9	42.8	6.0		NE			2		4			0	0		H. Müller.
Leipsic Observatory	29 56	750.9	29.98	761.6	55.4	13.0	30	NNE			2		7	NNE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.78	756.4	30.01	762.2	55.8	13.2	48	WNW			5		8ks	NE		0	0		Dr. Assmann.
Memel	29.83	757.7	29.88	758.9	45.7	7.6	90	NE			4		10n					Lt. showers	Reinbrecht & Issermann.
Munich	28.09	713.5	29.95	760.7	48.6	9.2	49	NE			4		9	W	E	0.028	0.7	Squally	Dr. C. Lang.
Neufahrwasser	29.85	758.2	29.87	758.6	42.6	5.9	93	NNE			4		10			0.394	10.0		A. Lothes.
Neustadt (Palatinate)	29.49	746.8	29.93	760.2	57.4	14.1	35	NNE			1		6	N		0	0		Reallehrer Dicknether.
Posen	29.63	752.5	29.92	759.9	45.3	7.4	73	NW			6		10			0.079	2.0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.39	746.5	29.94	760.4	56.3	13.5	38	NNE			5		6	ENE		0	0		Imp. University Observatory.
Stuttgart	28.97	735.9	29.87	758.6	54.1	12.3	27	E					5	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.43	722.1	30.00	762.1	51.8	11.0	52	E	2.0	0 9			5k		E	0.004	0.1		Reallehrer J. Hopfner.
Wustrow	30.03	762.8	30.06	763.4	50.9	10.5	53	NE			2		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.43	747.6	29.82	757.3	72.7	22.6		SW			4.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.64	752.8	29.69	754.1	84.0	28.9	79	SW					0			0	0	Blue sky	
Deesa	29.18	741.1	29.63	752.7	99.2	37.3	18	W	16.5	7.4			0			0	0	Misty	
Bombay	29.76	755.8	29.79	756.7	85.0	29.4	70	WNW	15	6.7			0			0	0	Blue sky	
Poona (Yarrowda)	27.91	708.9	29.72	754.8	91.0	32.8	35	W	25	11.2			0			0	0	Blue sky	
Belgaum	27.25	692.1	29.75	755.6	83.2	28.4	57	W	6	2.7			7	NE		0	0	Misty	
Lahore	28.76	730.5	29.46	748.3	103.3	39.6	26	Calm	2.4	1.1			0			0	0	Misty	
Roorkee	28.71	729.1	29.60	751.3	90.8	32.7	43	E	4	1.8			0			0.48	12.2		
Agra	29.03	737.3	29 58	750.9	100.6	38.1	30	NE	8.1	3.6			0			0	0		
Nagpur	28.57	725.8	29.56	750.9	103.5	39.7	12	NW	6.8	3.0			5	NW		0	0	D. clouds	
Jubbulpore	28.28	718.4	29.56	751.8	96.5	35.8	23	W	5.2	2.3			10			0	0	Overcast	
Lucknow	29.28	743.6	29.64	753.0	90.1	32.3	49	SE	4.0	1.8			0			0.96	24.4	Blue sky	
Allahabad	29.30	744.1	29.60	751.8	94.5	34.7	40	Calm	3.9	1.7			0			0.05	1.3	Blue sky	
Patna	29.44	747.8	29.62	752.3	87.0	30.6	65	NNW	1.3	0.6			4	NW	NW	0	0	D. clouds	
Hazaribagh	27.63	701.8	29.59	751.6	88.3	31.3	37	NW	7.1	3.2			1			0	0		
Cuttack	29.58	751.4	29.67	753.5	87.1	30.6	64	SSW	5.6	2.5			3			0.32	8.1	D. clouds	
Calcutta (Alipore)	29.63	752.6	29.65	753.2	84.7	29.3	76	W	3.0	1.3			0			0	0	Blue sky	
Goalpara	29.25	742.9	29.66	753.2	79.9	26.6	76	ESE	2.6	1.2			0			0	0	Blue sky	
Chittagong	29.69	754.1	29.78	756.4	83.9	28.8	85	SSW	7.5	3.4			9			0	0	D. clouds	
Sibsagar	29.38	746.1	29.71	754.6	80.9	27.2	79	ENE	3.3	1.5			10	SW	SW	0.88	22.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.41	746.9	29.81	757.2	63.1	17.3	45	S	1.3	0.6			10			0	0		Prof. Giovanni Clodig.
Milan	29.22	742.2	29.73	755.2	59.7	15.4	73	NE	4.9	2.2			9	W		0.280	7.1		Prof. Schiaparelli.
Padua	29.71	754.7	29.82	757.4	59.9	15.5	56	ESE	8.1	3.6			10			0.043	1.1		Prof. Dott. Lorenzoni.
Moncalieri	28.88	733.5	29.78	756.4	51.8	11.0	86	NNE	3.1	1.4			9			0.472	12.0		Prof. P. F. Denza.
Genoa	29.59	751.5	29.78	756.3	59.4	15.2	70	SW	4.9	2.2			10	S		0	0		Prof. G. M. Garibaldi.
Mondovi	27.88	708.1	29.78	756.4	49.6	9.8	94	NW			2		10			0.528	13.4		Prof. D. C. Bruno.
Pesaro	29.74	755.3	29.78	756.5	61.8	16.3	73	E	15.0	6.7			9	S		0.264	6.7		Prof. Luigi Guidi.
Florence	29.58	751.2	29.83	757.6	59.0	15.0	88	SW			2		10			0.882	22.4		Cav. F. Meucci.
Leghorn	29.74	755.4	29.82	757.5	62.6	17.0	72	WSW	11.9	5.3			10			0.197	5.0		Prof. P. Monte.
Rome	29.65	753.1	29.82	757.5	65.7	18.7	52	S	4.9	2.2			9			0	0		Prof. P. S. Ferrari
Lecce	29.57	751.1	29.82	757.4	64.6	18.1	46	SE	11.2	5.0			6	SE		0.079	2.0		Prof. C. De Giorgi.
Cosenza	28.98	736.0	29.85	758.2	61.5	16.4	75	SW	2.5	1.1			9			0.370	9.4		Prof. D. Conti.
Cagliari	29.67	753.5	29.85	758.3	65.7	18.7	46	NW			4		5	NW		0.055	1.4		Prof. A. Pacinotti.
Palermo	29.65	753.0	29.89	759.3	68.2	20.1	35	NW	8.1	3.6			7			0.087	2.2		Prof. G. Ciacciatore.
Syracuse	29.65	753.2	29.70	754.3	72.5	22.5	61	WSW	12.5	5.6			6	W		0	0		Prof. V. G. Gulisano.
SUB-SERIES.																			
Naples, S. R.	29.32	744.7	29.84	757.8	62.6	17.0	64	WSW	4.3	1.9			4	SW		0.031	0.8		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					64.7	18.2	93	WSW	1.7	0.8			1cs			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.60	751.8	29.80	756.9	65.5	18.6	99	SW	0.8	0.4			10s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.60	751.8	29.66	753.3	59.4	15.2	93	N	3.5	1.6		0	0			0.195	3.43	Clear	The Staff.
Wakayama	29.71	754.6	29.76	755.9	65.9	18.8	89	E	1.3	0.6			4ck			0.140	3.56	Fair	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.98	634.6	30.05	763.2	51.8	11.0	40	SE			1	2cs	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	23.66	601.0			62.2	16.8	44	Calm	0	0		0	0			0	0	Clear	Vicente Fernandez.
Leon	24.41	620.0	30.01	762.3	64.9	18.5	64	NW			2	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.66	753.3	29.91	759.8	70.5	21.4	100	SE			1	0	0			0	0	Foggy	F. Quijano, C. E.
Mexico, Central Observatory	23.05	585.4	29.98	761.4	57.6	14.2	65	Calm	0	0		0	0			0	0	Hazy	The Staff
Morelia	23.96†	608.6†			67.3	19.6	37	SE			4	2k	0	S		0	0	Hazy	M. Fenn, M. D.
Pabellon (Aguascalientes)	23.91	607.2	29.87	758.6	59.4	15.2	44	Calm			0	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.42	594.8	30.19	766.7	53.6	12.0	49	Calm	0	0		0	0			Inap.	Inap.	Fine	Prof. P. Spina.
San Luis Potosi	24.18	614.2	30.03	762.7	66.2	19.0	55	S			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.79	756.6	29.80	756.9	80.6	27.0	78	S			2	0	0			0	0	Hazy	Prof M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.08	763.9	30.08	763.9	52.5	11.4		NNE			4					0	0		
Groningen	30.00	762.0	30.05	763.4	50.0	10.0		N								0.004	0.1		
Helder	30.06	763.5	30.06	763.5	46.8	8.2		NNW			1					0.102	2.6		
Hellevoetsluis	30.07	763.6	30.07	763.6	53.0	12.0	67	NNW			1					0	0		
Utrecht	30.01	762.3	30.06	763.5	54.0	12.2	56	NNW			2		5			0	0	Cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.07	763.6	30.12	765.0	52.2	11.2	59	NNW	2.9	1.3	.....	.....	2	.....	.....	0.079	2.0	.....	
Brönö	30.25	768.3	30.29	769.3	45.7	7.6	64	NNW	9	4	.....	.....	5	.....	.....	0	0	.....	
Christiania	29.98	761.4	30.12	765.1	55.4	13.0	37	ESE	4	2	.....	.....	8	.....	.....	0.004	0.1	.....	
Tromsö	30.20	767.1	30.26	768.5	37.0	2.8	69	SW	7	3	.....	.....	10	.....	.....	0.016	0.4	.....	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.00	762.1	30.21	767.4	64.8	18.2	74	ESE	.....	.....	2	.....	4	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.85	732.9	29.86	758.4	57.2	14.0	44	WNW	3.1	1.4	.....	.....	8	.....	.....	0.063	1.6	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.95	760.8	30.04	763.0	66.2	19.0	61	WSW	10.5	4.7	.....	.....	3	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.54	750.2	29.89	759.3	56.3	13.5	61	WSW	8.7	3.9	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.10	764.6	30.17	766.4	58.3	14.6	89	SE	2.5	1.1	.....	.....	10	.....	.....	0.110	2.8	Light rain...	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Mossamedes, Benguela	.....	.....	29.89	759.3	72.0	22.2	.....	W	.....	.....	1	.....	0	.....	.....	1	W	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds	.....	.....	30.25	768.3	79.2	26.2	.....	NNE	.....	.....	3	.....	0	.....	.....	2	ENE	.....	D clouds	Antonio Sarmento, Q. M.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello S. 9° 12′, E. 12° 54′	.....	.....	29.93	760.2	78.4	25.8	.....	WNW	.....	.....	2	.....	2	.....	.....	1	.....	.....	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China	.....	.....	30.04	763.0	84.6	29.2	.....	SW	.....	.....	2	.....	2	.....	SW	1	.....	.....	Blue sky	J. G. Felgós, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	30.19	766.8	30.21	767.3	40.5	4.7	64	WNW	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Astrakhan	29.99	761.8	29.91	759.7	67.3	19.6	44	ESE	18	8	.....	.....	10	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Barnaul	29.74	755.3	30.25	768.4	41.9	5.5	82	NE	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.82	757.3	30.07	763.6	45.0	7.2	74	NE	11	5	.....	.....	10n	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	29.28	743.7	30.22	767.5	70.5	21.4	24	W	11	5	.....	.....	10	.....	.....	.....	.....	Hazy	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.75	755.6	30.01	762.2	71.4	21.9	35	S	16	7	.....	.....	9	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.67	753.6	29.69	754.1	69.4	20.8	78	E	2	1	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.12	739.7	29.73	755.2	69.8	21.0	39	E	4	2	.....	c;ck	9ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.58	751.2	30.02	762.6	74.8	23.8	26	S	11	5	.....	.....	1	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.60	751.9	29.80	756.9	75.7	24.3	42	ESE	18	8	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Moscow	29.37	745.9	29.91	759.6	62.2	16.8	63	SSW	4	2	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.68	753.9	29.75	755.7	73.0	22.8	43	SE	4	2	.....	.....	7cs;k	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.86	758.4	29.95	760.6	36.5	2.5	75	SE	16	7	.....	.....	10n	.....	.....	.....	.....	.....	.....
Nukuss	29.59	751.5	29.81	757.2	78.6	25.9	14	NNE	13	6	.....	.....	0	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.65	753.1	29.79	756.7	67.1	19.5	42	SE	13	6	.....	.....	7n	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	30.07	763.8	30.09	764.2	40.5	4.7	78	NNE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.15	715.1	29.63	752.5	81.0	27.2	35	N	4	2	.....	.....	1	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.37	720.6	29.71	754.7	77.7	25.4	80	S	4	2	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.38	746.3	29.81	757.1	49.3	9.6	86	W	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.40	746.8	29.82	757.3	59.2	15.1	83	NE	2	1	.....	.....	10	.....	.....	.....	.....	Raining	Astronomical Obs.
Yeniseisk	29.95	760.6	30.23	767.9	52.2	11.2	47	WNW	4	2	.....	.....	2	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.73	755.1	29.84	757.8	63.5	17.5	58	SW	4.6	2.08	.....	.....	0	.....	.....	0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	29.89	759.1	29.94	760.5	64.4	18.0	63	SE	1.4	0.65	.....	2	1	NE	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.89	683.1	.....	.....	53.6	12.0	50	NE	9.0	4.01	.....	.....	1	.....	.....	0	0	Almost clear	Domingo Martiny Peres
Madrid, Royal Observatory	27.62	701.4	29.79	756.6	63.0	17.2	51	SW	11.2	5.00	.....	10	3	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.66	753.4	29.81	757.1	75.0	23.9	66	SE	2.3	1.03	.....	4	5	NE	.....	0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.96	735.6	29.85	758.3	55.0	12.8	67	NE	8.0	3.6	.....	.....	10	.....	.....	0.906	23.0	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.91	759.8	29.98	761.4	77.7	25.4	85	ESE	2.9	1.3	.....	4ck	2k;s	SSE	.....	0.425	10.8	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.78	756.3	29.83	757.6	87.9	31.1	65	E	2.2	1.0	.....	.....	.....	.....	.....	0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.86	758.3	29.95	760.8	59.5	15.3	72	SSW	3.1	1.4	.....	0	10	.....	W	0.458	11.6	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.4	30.07	763.7	79.9	26.6	76	E	14.9	6.67	.....	3cs	2k	E	E	0	0	Clear.	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 665.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.27	768.9	30.31	769.9	41.4	5.2		S			2		10			0	0		
Umea	30.24	768.1	30.29	769.4	45.3	7.4	59	NE			2		9			0	0		
Hernosand	30.25	768.4	30.30	769.7	44.6	7.0	61	ENE			4		10			0	0		
Stockholm	30.02	762.6	30.20	767.1	47.1	8.4	39	ENE			6		9			0	0		
Wisby	29.95	760.6	30.00	762.1	48.6	9.2	58	ENE			7		7			0.028	0.7		
Sub-Series.																			
Upsala	30.08	764.0	30.17	766.2	43.2	6.2	72	ENE	11.4	5.1			10			0.009	0.23	Raining	Nils Ekholm.

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

SWEDISH NAVAL SERIES.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia, N. 46° 39′, W 13° 07′			30.11	764.8	52.7	11.5	68	E			5		8						D. clouds	J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.43	722.0	29.80	759.1	43.3	6.3	87	NNE			3		10					Raining	The Observatory.
Zurich	28.26	717.7	29.91	759.8	47.7	8.7	72	E			2		10		E			Raining	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —2.8 mm.; Thermometer, —9.3 Cent. Relative Humidity, +29 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.75	755.6	66.9	19.4	60	SE	0	0			6		SW.	0.228	5.8		The Observatory.
Fao, Persian Gulf																			
Valona			29.88	758.9	64.0	17.8		SW			2		5			0.35	9.	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.90	759.4	71.4	21.9	75	NW			1		0			0.29	7.4		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					42.8	6.0		Calm	0	0		1cs	0			0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	30.09	764.3	30.15	765.8	49.3	9.6	75	E	4	1.8			10k			0.01	0.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.14	765.5	30.19	766.8	49.7	9.8	76	SE	4	1.8			8s			0.010	0.25	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.68	753.9	29.87	758.7	68.8	20.4	74	SW			1		9s			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.96	761.0	30.13	765.3	37.0	2.8		S			1		10s			0.07	1.8	Cloudy	H. A. Johnson.
Father Point, Quebec	29.99	761.7	30.01	762.2	45.5	7.5	54	SE	5	2.2			10n?			0.20	5.1	Clear?	J. McWilliams.
Fredericton, N. B.	30.05	763.3	30. 2	765.0	52.0	11.1	78	E	3	1.3			10s			Inap.	Inap.	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.02	737.1	29.85	758.2	45.0	7.2	76	NW	8	3.6		5k	5n	NW		0.290	7.37	Cloudy.	James Stewart.
Granton, Ontario	28.79	731.3	29.86	758.4	59.0	15.0	100	SW			1		10n			0.36	9.1	Raining	James Grant.
Halifax, N. S.	30.11	764.8	30.24	768.1	42.9	6.1	93	E	8	3.6			10n			0.144	3.66	Cloudy	A. Allison.
Hamilton, Ontario	29.76	755.9	30.12	765.0	62.7	17.1	91	SW			2	0	0			0.17	4.3	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.55	750.6	29.88	758.9	57.3	14.1	86	S	4	1.8		7k	1ks	SW		0.05	1.3	Clearing	S. Woods, M. A.
Little Glace Bay, N. S.	30.20	767.1	30.24	768.1	41.1	5.1	81	S	3	1.3			10n			0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.72	754.9	29.92	760.0	55.1	12.8	74	N	4	1.8		4c	0	W		0	0	Fair	C. H. McLeod, C. E
Moose Factory, Ontario	29.55	750.6	29.58	751.3	45.5	7.5	86	SW			3		10s			Inap.	Inap.	Cloudy	J. R. Nason.
Norwood, Ontario	29.20	741.7	29.88	758.9	63.2	17.3	89	W	11	4.9			9s			Inap.	Inap.	Raining	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.13	739.9	29.80	756.9	59.5	15.3	91	S	7	3.1		5k	5n	SW		0.02	0.5	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.92	760.0	63.7	17.6	94	W			1		10n					Raining	J. F. Jeffers, M. A.
Port Dover, Ontario	29.22	742.2	29.89	759.2	60.1	15.6	100	Calm	0	0		7k	0	SW		0.13	3.3	Fair	H. Morgan.
Port Stanley, Ontario	29.26	743.2	29.89	759.2	59.1	15.1	93	E	8	3.6			10n			0.34	8.6	Light rain	M. Payne.
Quebec, Quebec	29.69	754.1	30.02	762.5	43.0	6.1	75	NE			3	0	Haze			0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.37	746.0	29.82	757.4	54.5	12.5	84	SW	5	2.2		8ck	0	SW		0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.92	760.0	30.09	764.3	48.0	8.9	100	SE	9	4.0			10n			0.085	2.16	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.06	738.1	29.75	755.6	61.1	16.2	76	S	26	11.6			10ks			0.07	1.8	Light rain	K. Stewart.
Stratford, Ontario	28.62	726.9	29.87	758.7	59.0	15.0	96	SW	4	1.8			10s			0.223	5.67	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.20	767.1	30.24	768.1	49.0	9.4	73	S	4	1.8			10ks			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.54	750.3	29.91	759.7	59.3	15.2	97	W	6	2.7			10n			0.14	3.6	Thunder storm	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M.A
Woodstock, Ontario																			
Yarmouth, N. S.	28.85	732.8	29.88	758.9	60.8	16.0	94	W	3	1.3			10n			0.83	21.1	Raining	Professor Wolverton.
Sub-Series.																			
St. Johns, Newfoundland	29.98	761.5	30.04	763.0	51.6	10.9	96	E	12	5.4		6k	4s	NW		0.35	8.9	Overcast	Lt. F. E. Wilmot, R. N.
St. Pierre, N. F., l'Hopital Maritime	30.11	764.8	30.37	771.4	41	5.0	70	E				0	0			0	0	Fair	John Delany.
			30.22	767.6	42.1	5.6		W			1					0	0		The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.01	762.2	75	23.9	56	S	5	2.2		Haze	0	Calm		0.02	0.5	Clear	
Alpena, Michigan	29.07	738.4	29.69	754.1	56	13.3	94	SE	4	1.8			10s		SW	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.04	763.0	65	18.3	89	E	10	4.5		5k	5s	E	E	0.05	1.3	Cloudy	
Atlantic City, New Jersey	30.13	765.8	30.15	765.8	63	17.2	89	SW	10	4.5		Haze	Haze	Calm	Calm	0	0	Hazy	
Augusta, Georgia	29.95	760.7	30.15	765.8	72	22.2	80	E	3	1.3		8cs	0	E		0	0	Fair	
Baltimore, Maryland	30.07	763.8	30.12	765.0	73	22.8	72	SW	9	4.0		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	30.10	764.5	30.12	765.0	70	21.1	66	S	7	3.1		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	28.11	714.0	29.96	761.0	46	7.8	76	NW	2	0.9		0	0			0	0	Clear	
Boerne, Texas	28.39	721.1	29.65	753.1	69	20.6	90	SE	12	5.4			10ks		SE	0	0	Cloudy	
Boise City, Idaho	26.96	684.8	29.92	760.0	48	8.9	78	SE	4	1.8			10s		Calm	0.41	10.4	Cloudy	
Boston, Massachusetts	29.93	760.2	30.08	764.0	52	11.1	73	SE	7	3.1		0	Haze		Calm	0	0	Clear	
Brackettville, Texas	28.68	728.5	29.68	753.9	73	22.8	35	E	2	0.9		8c	0	Calm		0	0	F ir	
Breckenridge, Minnesota	28.85	732.8	29.84	757.9	46	7.8	84	W	8	3.6		2k	0	W		0.02	0.5	Fair	
Brownsville, Texas	29.82	757.4	29.86	758.4	75	23.9	90	E	2	0.9		5cs	0	Calm		0	0	Fair	
Buffalo, New York	29.22	742.2	29.89	759 2	66	18.9	69	SW	4	1.8			10ks		SW	0.16	4.1	Cloudy	
Burkes, Arizona					66	18.9	41	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.66	753.4	29.94	760.5	69	20.6	80	S	3	1.3		5ck	5s	W	SW	0.12	3.0	Cloudy	
Cairo, Illinois	29.53	750.0	29.90	759.4	76	24.4	69	S	16	7.2		0	0			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.19	766.8	30.19	766.8	74	23.3	80	SE	6	2.7		5c	0	W		0	0	Fair	
Cape Henry, Virginia	30.15	765.8	30.17	766.3	70	21.1	85	SW	10	4.5		5k	Fog	SW	Calm	0	0	Fair	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	72	22.2	80	SE	5	2.2		8c;k	0	Calm;SE		0	0	Cloudy	
Cape May, New Jersey	30.10	764.5	30.13	765.3	67	19.4	74	S	11	4.9		1c	0	SW		0	0	Clear	
Castroville, Texas	29.02	737.1	29.68	753.9	73	22.8	85	SE	8	3.6		8c	0	Calm		0	0	Fair	
Cedar Keys, Florida	30.01	762.2	30.03	762.7	75	23.9	77	SE	8	3.6		0	5ks		S	0.22	5.6	Fair	
Charleston, South Carolina	30.05	763.3	30.10	764.5	75	23.9	72	E	12	5.4		0	0			0	0	Clear	
Charlotte, North Carolina	29.30	744.2	30.10	764.5	68	20.0	84	SE	3	1.3		5c	2ks	S	SE	0	0	Fair	
Chattanooga, Tennessee	29.27	743.4	30.04	763.0	69	20.6	80	S	3	1.3			10s			0	0	Cloudy	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	37	2.8	53	SW	1	0.4			10s		W	0.23	5.8	Cloudy	
Chicago, Illinois	29.06	738.1	29.72	754.9	64	17.8	89	S	15	6.7			10n		Calm	0.99	25.1	Light rain	
Chincoteague, Virginia	30.15	765.8	30.17	766.3	63	17.2	100	SW	15	6.7		8cs	Haze	SW	Calm	0	0	Cloudy	
Cincinnati, Ohio	29.34	745.2	29.97	761.2	72	22.2	67	S	5	2.2		9k	0	Calm		0.28	7.1	Cloudy	
Cleveland, Ohio	29.19	741.4	29.88	758.9	75	23.9	52	S	17	7.6		5cs	5ks	W	SW	0	0	Cloudy	
Coleman City, Texas	28.04	712.2	29.62	752.3	71	21.7	80	SE	6	2.7		0	0			0	0	Clear	
Columbus, Ohio	29.16	740.7	29.96	761.0	69	20.6	70	S	6	2.7		5k	2s	S	Calm	Inap.	Inap.	Cloudy	
Concho, Texas	27.94	709.7	29.54	750.3	71	21.7	90	S	12	5.4		0	2s		S	0	0	Fair	
Corsicana, Texas	29.43	747.5	29.88	758.9	70	21.1	90	S	8	3.6		0	2ks		Calm	0	0	Clear	
Davenport, Iowa	29.18	741.1	29.80	756.9	57	13.9	87	NW	11	4.9			10s		NW	0.62	15.7	Cloudy	
Dayton, Washington T'y					42	5.6	74	SW			1		10s		Calm	0	0	Cloudy	
Deadwood, Dakota	25.30	642.6			32	0.0	69	Calm	0	0		0	0			0.06	1.5	Clear	
Decatur, Texas																			
Delaware Breakwater, Del.	30.13	765.3	30.15	765.8	70	21.1	75	SW	13	5.8		1c	0	SW		0	0	Clear	
Denison, Texas	29.04	737.6	29.79	756.7	71	21.7	90	S	17	7.6			10ks		S	0	0	Cloudy	
Denver, Colorado	24.76	628.9	29.98	761.5	36	2.2	80	SE	1	0.4		0	0			0.12	3.0	Clear	
Des Moines, Iowa	28.99	736.3	29.85	758.2	56	13.3	75	N	3	1.3		0	5ks		SW	0	0	Fair	
Detroit, Michigan	29.19	741.4	29.83	757.7	62	16.7	94	SW	2	0.9			10n		W	0.61	15.5	Light rain	
Dodge City, Kansas	27.35	694.7	29.62	752.3	50	10.0	82	N	6	2.7		8ck	0	NE		0	0	Cloudy	
Dubuque, Iowa	29.13	739.9	29.81	757.2	59	15.0	48	NW	3	1.3			10ks		NW	0.01	0.3	Cloudy	
Duluth, Minnesota	29.05	737.9	29.72	754.9	45	7.2	92	N	1	0.4			10s;fg		N;Calm	0.30	7.6	Threatening	
Eagle Pass, Texas	29.01	736.8	29.71	754.6	72	22.2	76	S	4	1.8		5cs	0	Calm		0.04	1.0	Fair	
Eastport, Maine	30.00	762.0	30.07	763.8	44	6.7	92	NE	5	2.2			Fog		NE	0.04	1.0	Foggy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.21	741.9	29.88	758.9	71	21.7	57	NE	2	0.9		5ck	0	W		0	0	Fair	
Escanaba, Michigan	29.07	738.4	29.71	754.6	53	11.7	67	S	2	0.9			10s		SW	0	0	Cloudy	
Florence, Arizona	28.29	718.6	29.89	759.2	57	13.9	41	SW	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	24.97	634.2	30.42	772.7	39	3.9	55	NE	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.88	608.1	29.72	754.9	40	4.4	73	Calm	0	0		0	0			0	0	Clear	
Fort Custer, Montana	26.73	678.9			40	4.4	56	SW	3	1.3		0	0			0	0	Clear	
Fort Davis, Texas	25.18	639.6	30.14	765.5	56	13.3	19	E	3	1.3		0	0			0	0	Clear	
Fort Elliot, Texas	26.84	681.7	29.03	737.3	54	12.2	38	N	30	13.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.26	743.2	29.77	756.1	75	23.9	72	S	12	5.4		10cs	0	SW		0	0	Cloudy	
Fort Grant, Arizona	25.12	638.0	29.92	760.0	57	13.9	3	NE	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.50	723.9	29.71	754.6	72	22.2	85	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.15	689.6			36	2 2	45	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.58	700.5	29.40	746.7	71	21.7	85	SE	4	1.8		1c	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.54	724.9	29.58	751.3	73	22.8	55	S	16	7.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	28.07	713.0			37	2.8	80	W	2	0.9		0	0			0	0	Clear	
Fort Verde, Arizona					53	11.7	54	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas	28.17	715.5	29.76	755.9	41	5.0	57	S	8	3.6		0	8ks		Calm	0	0	Fair	
Galveston, Texas	29.89	759.2	29.93	760.2	76	24.4	82	S	5	2.2		2k	0	S		0	0	Clear	
Grand Haven, Michigan	29.11	739.4	29.74	755.4	58	14.4	94	SE	21	9.4			10s;fg		Calm	0.87	22.1	Cloudy	
Helena, Montana					28	— 2.2	77	S	2	0.9		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.10	739.1	29.84	757.9	70	21.1	75	SE	8	3.6			10s		SW	0.16	4.1	Cloudy	
Indianola, Texas	29.90	759.4	29.93	760.2	76	24.4	82	S	5	2.2		2c	0	W		0	0	Fair	
Jacksboro, Texas	28.68	728.5	29.74	755.4	75	23.9	77	SW	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	30.00	62.0	30.03	762.7	73	22.8	85	E	2	0.9			10s		E	0.12	3.0	Cloudy	
Keokuk, Iowa	29.20	741.7	29.80	756.9	60	15.6	82	N	8	3.6			10s		W	0.45	11.4	Cloudy	
Key West, Florida	29.96	761.0	29.99	761.7	81	27.2	74	SE	6	2.7		0	0			0	0	Clear	
Kittyhawk, North Carolina	30.18	766.6	30.21	767.3	72	22.2	80	SW	10	4.5		5cs	0	Calm		0	0	Fair	
Knoxville, Tennessee	29.08	738.6	30.05	763.3	68.5	20.3	75	SE	1	0.4		0	0			Inap.	Inap.	Clear	
La Crosse, Wisconsin	29.07	738.4	29.79	756.7	55	12.8	62	W	12	5.4		2c	2s	NW	Calm	0	0	Fair	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	56	13.3	51	W	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.46	748.3	29.78	756.4	73	22.8	67	SE	12	5.4		0	0			0	0	Clear	
Leavenworth, Kansas	29.04	737.6	29.86	758.4	58	14.4	70	N	6	2.7		5k	5s	W	W	0.01	0.3	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.56	750.8	29.86	758.4	73	22.8	85	S	7	3.1		0	0			0	0	Clear	
Los Angeles, California	29.56	750.8	29.90	759.4	59	15.0	82	NW	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.39	746.5	29.92	760.0	75	23.9	60	S	13	5.8		5c	0	Calm		0	0	Fair	
Lynchburg, Virginia	29.45	748.0	30.10	764.5	74	23.3	59	S	2	0.9		5ck	Sm'e	W	Calm	0	0	Dense smoke	
Madison, Wisconsin	28.80	731.5	29.75	755.6	58	14.4	82	NW	5	2.2			10s		W	0.02	0.5	Cloudy	
Marquette, Michigan	29.04	737.6	29.73	755.1	52	11.1	73	SW	3	1.3			10s		SW	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.20	716.3	29.87	758.7	74	23.3	86	SE	4	1.8		2ck	1s	W	SE	0	0	Fair	
Memphis, Tennessee	29.57	751.1	29.89	759.2	75	23.9	72	SE	11	4.9		1c	1s	NW	SE	0	0	Clear	
Milwaukee, Wisconsin	29.02	737.1	29.72	754.9	60	15.6	77	NW	12	5.4			10n		NW	0.34	8.6	Light rain	
Mobile, Alabama	29.95	760.7	29.99	761.7	72	22.2	90	NE	6	2.7		0	5s		NE	0.02	0.5	Fair	
Montgomery, Alabama	29.80	756.9	30.03	762.7	72	22.2	90	E	7	3.1		5k	5ks	SE	SE	0.22	5.6	Cloudy	
Morgantown, West Virginia	29.06	738.1	29.99	761.7	78	25.6	54	SW	7	3.1		0	0			0	0	Clear	
Mt. Washington, N. H.	23.99	609.3	30.35	770.9	53	11.7	73	NW	8	3.6		5k	Sm'e	NW	Calm	0.01	0.3	Smoky	
Nashville, Tennessee	29.42	747.3	29.93	760.2	74	23.3	76	S	9	4.0		0	10s		S	0	0	Cloudy	
New Haven, Connecticut	29.97	761.2	30.08	764.0	70	21.1	70	S	5	2.2		0	0			0	0	Clear	
New London, Connecticut	30.05	763.3	30.10	764.5	71	21.7	62	SW	6	2.7		Haze	Haze	Calm	Calm	0	0	Dense haze	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	76	24.4	85	SE	1	0.4		0	Hazme		Calm	0	0	Smoky	
Newport, Rhode Island	30.03	762.7	30.08	764.0	63	17.2	72	SW	3	1.3		Haze	Haze			0	0	Hazy	
New River, North Carolina																			
New York, New York																			
Norfolk, Virginia	29.93	760.2	30.10	764.5	68	20.0	74	SW	7	3.1		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	30.12	765.0	30.18	766.6	72	22.2	85	SW	3	1.3			10s;fg		Calm	0	0	Cloudy	
Olympia, Washington Ter.	27.09	688.1	29.68	753.9	40	4.4	82	NW	6	2.7		2ck	0	W		0.02	0.5	Clear	
Omaha, Nebraska	29.73	755.1	29.76	755.9	40.5	4.7	91	S	2	0.9		5k	2ks	SW	SW	0.11	2.8	Cloudy	
Oswego, New York	28.75	730.2	29.92	760.0	59	15.0	59	Calm	0	0		0	0			0	0	Clear	
Pembina, Dakota	29.64	752.8	29.94	760.5	70	21.1	66	S	6	2.7		5k	Haze	W		0	0	Fair	
Pensacola, Florida	28.90	734.0	29.72	754.9	44	6.7	92	NW	13	5.8			10n		Calm	0.02	0.5	Light rain	
Philadelphia, Pennsylvania	29.95	760.7	29.99	761.7	71	21.7	95	NE	9	4.0			10s		Calm	0.04	1.0	Cloudy	
Phœnix, Arizona	30.05	763.3	30.10	764.5	72	22.2	76	SW	14	6.3		0	Haze		Calm	0	0	Clear	
Pike's Peak, Colorado	28.61	726.7	30.36	771.1	62	16.7	56	E	4	1.8		0	0			0	0	Clear	
Pilot Point, Texas	17.68	449.1	29.89	759.2	20	— 6.7	70	SW	42	18.8		1cs	0	Calm		0.02	0.5	Clear	
Pioche, Nevada	29.07	738.4	29.89	759.2	72	22.2	85	S	17	7.6			10s		S	0	0	Cloudy	
Pittsburg, Pennsylvania	23.82	605.0	29.59	751.6	52	11.1	35	S	7	3.1		8cs	0	W		0	0	Fair	
Port Huron, Michigan	29.24	741.9	29.98	761.5	73	22.8	50	SW	13	5.8		0	0			0	0	Clear	
Portland, Maine	29.20	741.7	29.84	757.9	60	15.6	94	SW	4	1.8			10n		SW	0.31	7.9	Light rain	
Portland, Oregon	30.02	762.5	30.07	763.8	54	12.2	80	S	2	0.9			10s;fg		Calm	0	0	Cloudy	
Portsmouth, North Carolina	29.75	755.6	29.82	757.4	40	4.4	95	S	3	1.3		8k	2s	SW	SW	0.02	0.5	Cloudy	
Prescott, Arizona					72	22.2	80	SE	6	2.7		8cs	0	Calm		0	0	Cloudy	
Punta Rassa, Florida	24.64	625.8	30.00	762.0	50	10.0	45	Calm	0	0		0	0			0	0	Clear	
Red Bluff, California	29.97	761.2	29.98	761.5	75	23.9	81	E	7	3.1		1k	0	Calm		0	0	Clear	
Rio Grande City, Texas	29.44	747.8	29.78	756.4	54.0	12.2	61	SE	23	10.3		0	2s		S	0	0	Clear	
Rochester, New York	29.62	752.3	29.82	757.4	78	25.6	82	SE	16	7.2		0	5s		SE	0	0	Fair	
Roseburg, Oregon	29.31	744.5	29.90	759.4	71	21.7	58	SW	7	3.1		1c	5s	W	W	0	0	Fair	
Sacramento, California	29.24	742.7	29.82	757.4	42	5.6	87	E	3	1.3			10s		SW	Inap	Inap	Cloudy	
St. Louis, Missouri	29.78	756.4	29.86	758.4	54	12.2	67	S	14	6.3			10s		Calm	0	0	Cloudy	
St. Paul, Minnesota	29.25	742.9	29.79	756.7	74	23.3	76	S	14	6.3		2ck	5ks	SW	W	0.53	13.5	Fair	
Salt Lake City, Utah	28.96	735.6	29.78	756.4	49	9.4	78	W	6	2.7		5k	0	W		0.03	0.8	Fair	
San Antonio, Texas	25.43	645.9	29.76	755.9	45	7.2	76	SE	4	1.8			10s		Calm	0.26	6.6	Threatening	
San Diego, California	29.16	740.7	29.83	757.7	72	22.2	90	E	6	2.7		5ck	5ks	Calm	E	0	0	Cloudy	
Sandusky, Ohio	29.84	757.9	29.92	760.0	56	13.3	94	SW	8	3.6			Fog		SW	0	0	Foggy	
Sandy Hook, New Jersey	29.19	741.4	29.82	757.4	72	22.2	67	SW	18	8.0			10s		SW	0	0	Cloudy	
San Francisco, California	30.08	764.0	30.11	764.8	76	24.4	64	SW	10	4.5		0	0			0	0	Clear	
Santa Fé, New Mexico	29.85	758.2	29.91	759.7	52	11.1	82	S	4	1.8			10s		SW	0	0	Cloudy	
Savannah, Georgia	23.25	590.5	29.79	756.7	49	9.4	31	E	7	3.1		0	0			0	0	Clear	
Shreveport, Louisiana	30.00	762.0	30.09	764.3	74	23.3	76	E	6	2.7		5k	5s	E		0	0	Cloudy	
Silver City, New Mexico	29.72	754.9	29.93	760.2	72	22.2	90	S	4	1.8		0	8s		S	0	0	Fair	
Smithville, North Carolina																			
Socorro, New Mexico	30.12	765.0	30.15	765.8	72	22.8	76	SE	8	3.6		2ck	Haze	Calm	Calm	0	0	Fair	
Springfield, Illinois	25.35	643.9	29.41	747.0	55	12.8	12	Calm	0	0		0	0			0	0	Clear	
Springfield, Massachusetts	29.12	739.6	29.76	755.9	68	20.0	90	S	8	3.6			10ks		SW	1.27	32.3	Cloudy	
Stockton, Texas	29.92	760.0	30.05	763.3	76	24.4	52	S	5	2.2		0	0			0	0	Clear	
Thatcher's Island, Mass	26.85	682.0	29.85	758.2	67	19.4	46	SW	2	0.9		0	0			0	0	Clear	
Toledo, Ohio	30.02	762.5	30.08	764.0	52	11.1	100	NE	12	5.4			Fog			0	0	Dense fog	
Tucson, Arizona	29.18	741.1	29.83	757.7	69	20.6	80	S	12	5.4			10s		W	0.26	6.6	Threatening	
Umatilla, Oregon	27.42	696.5	29.97	761.2	66	18.9	31	S	4	1.8		0	0			0	0	Clear	
Uvalde, Texas	29.47	748.5	29.96	761.0	46	7.8	84	NW	4	1.8			10s		Calm	0.05	1.3	Cloudy	
Vicksburg, Mississippi																			
Virginia City, Montana	29.74	755.4	29.98	761.5	72	22 2	90	SE	7	3.1		0	0			0	0	Clear	
Visalia, California	24.05	610.9	29.53	750.0	26	— 3.3	75	Calm	0	0		5ck	0	W		0	0	Fair	
Washington, D. C.	29.48	748.8	29.85	758.2	47	8.3	73	W	1	0.4		0	0			0	0	Clear	
Wickenburg, Arizona	30.01	762.2	30.12	765.0	74	23.3	72	S	9	4.0		0	0			0	0	Clear	
Wilmington, North Carolina					59	15.0	43	NW			1	0	0			0	0	Clear	
Winnemucca, Nevada	30.07	763.8	30.15	765.8	74	23.3	72	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Massachusetts	25.41	645.4	29.77	756.1	43	6.1	59	Calm	0	0		5ck	0	SW		0	0	Fair	
Yankton, Dakota	30.05	763.3	30.09	764.3	58	14.4	82	SW	13	5.8		0	Haze			0	0	Clear	
Yuma, Arizona	28.69	728.7	29.98	761.5	48	8.9	78	NW	6	2.7		0	0			0	0	Clear	
Sub-Series.	29.59	751.6	29.73	755.1	61	16.1	61	NW	1	0.4		0	0			0	0	Clear	
Bogota, U. S. Colombia	22.05	560.1			54.5	12.5	83	Calm	0	0			10n			0.17	4.3	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.97	761.2	30.02	762.5	77	25.0	86	Calm	0	0		4cs	0	SW		0.42	10.7	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	77	25.0	75	Calm	0	0		0	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I.	29.94	760.5	30.02	762.5	79	26.1	70	E	4	1.8		0	0			0	0	Clear	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	82	27.8	83	E			2	5ck	4s	E		0	0	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.46	748.3	30.01	762.2	79	26.1	89	Calm			0		10s			0.38	9.7		Francesco J. Cisneros.
Rivas, Nicaragua					75.2	24		NE					4k			1.50	38.	⅜ covered	Carl Flint.
Santiago de Cuba, W. I.	30.00	762.0	30.02	762.5	80	26.7	78	NE	2.4	1.1		4k	0	SE		1.250	31.75		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.95	760 7	30.00	762.0	26.0	— 3.3	94	E	14	6.3		2k	0	N		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,293 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.30 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.03	762.7	72	22.2	90	NE	8	3.6			10		NE	0.42	10.7			Cloudy	
§ Navy Yard, Portsmouth, N. H.	30.08	764.0	56	13.3	81	SE	0	0			10			0	0			Foggy	
Naval Hospital, Yokohama, Japan	29.68	753.9	60	15.6	94	Calm			0		0			1.23	31.2			Clear	
§ Adams, Punta Arenas, Costa Rica	29.93	760.2	78	25.6	86	Calm			0		8							Cloudy	
§ Alaska, Callao, Peru*	29.95	760.7	64	17.8	94	Calm			0		10					Long	SW	Misty	
§ Alert, N. 32° 31′, E. 141° 29′	29.63	752.6	72	22.2	90	SSW			4		10		Calm			Long	SW	Rainy	
Alliance, Norfolk, Va.	30.16	766.1	71	21.7	90	SW			1		10			0	0			Foggy	
§ Colorado, New York, N. Y.	30.10	764.5	76	24.4	??	SW	2	0.9			0			0	0			Clear	
§ Constitution, Hampton Roads, Va.	30.16	766.1	68	20.0	100	S	3	1.3			Fog							Foggy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.20	767.1	68	20.0	95	SSW	6	2.7			2		SW	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.92	760.0	54	12.2	100	W	2.4	1.1			2		W	0	0			Clear	
§ Jamestown, Sitka, Alaska*	29.87	758.7	38	3.3	100	Calm			0		0					Smooth		Clear	
Kearsarge, Boca del Toro, Chiriqui	29.94	760.5	79	26.1	91	WSW			1		2		SW			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.04	763.0	59	15.0	94	N			4					0	0	Smooth		Foggy	
§ Michigan, Erie, Pa.	29.86	758.4	67	19.4	74	N			2		2		N					Clear	
§ Monocacy, Shanghai, China	29.72	754.9	74	23.3	86	E			1		10							Cloudy	
§ New Hampshire, Port Royal, S. C.	30.07	763.8	76	24.4	77	E	8	3.6			8		NE	0	0			Cloudy	
Nipsic. N. 43° 16′, E. 6° 59′	29.77	756.1	64	17.8	62	W			1		2		W					D. clouds	
§ Onward, Ancon Bay, Peru†	29.95	760.7	65	18.3	89	S			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.74	755.4	72	22.2	95	SE			0		10		SE					Cloudy	
§ Passaic, Washington, D. C.	30.07	763.8	74	23.3	76	SSW			2		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.89	759.2	50	10.0	93	S			1		10					Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	30.09	764.3	72	22.2	80	SW			2		2							Hazy	
§ Quinnebaug, Tangier, Morocco	29.93	760.2	60	15.6	76	WNW			2		5		W			Smooth		Fair	
§ Richmond, Shanghai, China	29.70	754.4	74	23.3	95	ESE			1		10		Calm	0.75	19.1			Overcast	
§ Rio Bravo, Brownsville, Texas†	30.08	764.0	73	22.8	??	Calm	0	0			8		Calm	0	0			Cloudy	
§ Saratoga, N. 39° 04′, W. 29° 50′	30.20	767.1	64	17.8	78	S			3		5		Calm	0	0	Smoot		Hazy	
§ Shenandoah, Montevideo, Uruguay	30.01	762.2	59	15.0	94	W			2		10					Smooth		Cloudy	
§ St. Louis, League Island, Pa.	30.08	764.0	69	20.6	85	SW	3	1.3			0			0	0			Clear	
Swatara, Singapore, India†	29.83	757.7	81	27.2	91	N			2		2		Calm			Smooth		Clear	
Ticonderoga, N. 34° 32′, E. 139°	29.72	754.9	63	17.2	100	NNE			1		10		Calm			Long	S	Cloudy	
§ Trenton, Tenedos, Archipelago	29.77	756.1	71	21.7	53	WSW			5		2			0	0	Mod'ate	SW	Fair	
§ Tuscarora, Mare Island, Cal.	30.00	762.0	52	11.1	93	W			1		0			0	0	Smooth		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.08	764.0	79	26.1	70	SW			2		0							Clear	
§ Wabash, Boston, Mass.	30.09	764.3	55	12.8	80	SE	6	2.7			5			0	0			Fair	
§ Wachusett, Montevideo, Uruguay	30.00	762.0	59	15.0	??	N			2					0	0	Smooth	N	Foggy	
Wyoming, Constantinople, Turkey	29.72	754.9	65	18.3	63	S			1		5		S			Smooth	S	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
Liverpool, Eng	30.15	765.8	55	12.8	87	WNW			2		7		WNW	Light	Light			Fair	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 49° 21', W. 23° 20'...*†	30.32	770.1	58	14.4	88	ESE			4		5		ESE	0	0	Mod'ate	ESE	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, Mazatlan, Mexico	29.82	757.4	76	24.4	95	E			1		2		ESE	0	0	Gentle	SW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltim re, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 48° 48', W. 22° 28'	30.28	769.1	65	18.3	63	S			2		2		S	0	0	2	SE	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strasburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.88	758.9	83	28.3	91	S			3		5		S			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	29.92	760.0	52	11.1		W			5		n		SW	Light	Light	Smooth		Rain & hail.	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 37° 12', W. 122° 26'†	29.92	760.0	50	10.0		NE			2		0					Small	NE	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California G. Debney, Portland, Oregon †	29.75	755.6	40	4.4		NW			2		8		NW					Cloudy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N 27° 52′. W. 115° 44′....†	29.88	758.9	58	14.4	94	NW			1		10		SSE			Mod'ate	NW	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. R. Seabury, Acapulco, Mexico.....†	29.85	758.2	80	26.7	92	Calm			0		0							Clear	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of Panama, M. Connolly, N. 21° 20′ W. 107° 57′.....†	29.96	761.0	63	17.2		WNW			1		2		NW	0	0	Mod'ate	NW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N 36° 40′, W. 156° 47′.....†	30.24	768.1	60	15.6	88	SW			4		10		SW			Mod'ate	W	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.63	752.6	60	15.6		SW			7		5		SW	0	0	Smooth		Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury, Yokohama, Japan.....†	30.14	765.5	66	18.9	79	WSW			3		0			0	0			Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama.....†	29.91	759.7	82	27.8	91	E			1		5		Calm	0	0			Clear	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J. M. Cavarly																			
§ S. S. Idaho, Esquimalt, Vancouv r I'd.†	30.19	766.8				Calm			0		2		Calm	0	0	Smooth		Fair	
§ S. S. Zealandia, R. C. Ghest, Honohulo, Sandwich I'd	30.13	765.3				NW			2				NW			Smooth	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes, N 40° 55′ W. 52° 24′.....†	30.11	764.8	53	11.7		ENE			2		10		NE	0.	0	Light swell	WNW	Misty	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 42° 00′, W. 48° 58′.....†	30.12	765.0	46	7.8		S			2		10		SW			Smooth	NE	Showery	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr. Adele Fuller, J. Jorgensen, N. 40° 13′, W. 72° 53′	30.11	764.8	60	15.6	77	SW	7	3.1			Sm'e			0	0	Short		Smoky	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis, N. 36° 31′, W. 69° 26′.....†	30.23	767.8	71	21.7		S			3		8		S	0	0	Mod'ate	S	Cloudy	J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 27° 44′, E. 41° 25′.....†	30.10	764.5	75	23.9		WSW			4		5		WSW	0	0	Smooth	WSW	Fair	L. L. Lewis.
Brigantine George, W. H. Champlin, Arroyo, Porto Rico	30.17	766.3	80	26.7		E			5		2		E	Sho	wers.	Smooth		D. clouds	B. F. Woodbury.
Hippolyta, N. 48° 32′, W 13° 04′.....*	29.92	760.0	58	14.4		NE			3		5		E	0	0	Smooth		Fair	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

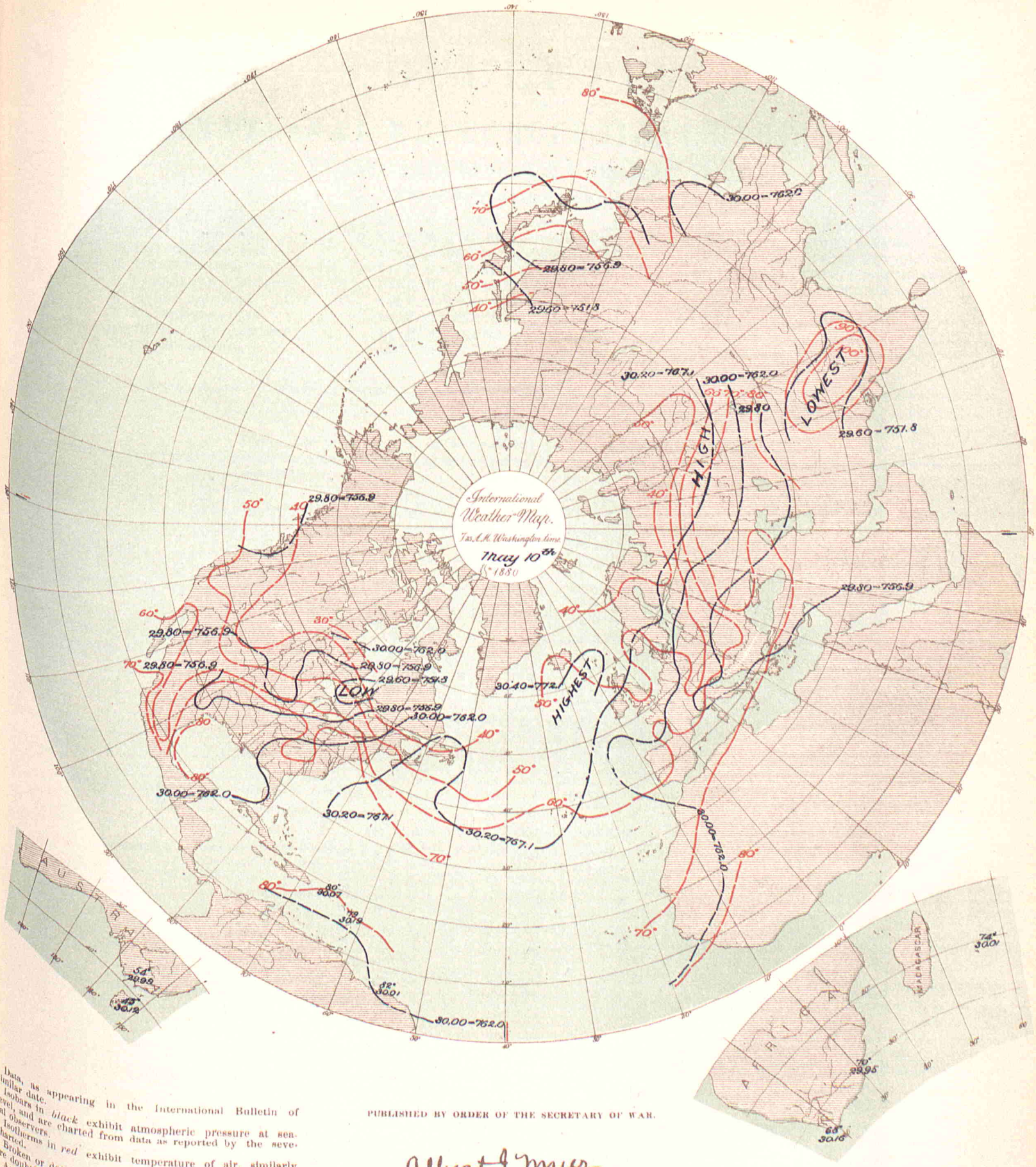
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 11, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:40 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.12	765.1				NW			1		1			0.157	4.0	Very fair	Dr. Ollive.
Nemours			29.91	759.6	61.2	16.2	87	WNW			2		8			0.169	4.3	Very cloudy	Metge.
Algiers			29.84	758.0	68.0	20.0	55	WNW			4		4			0	0	Cloudy	Nicolas.
La Calle			29.80	757.0	68.9	20.5	71	NE			2		3			0	0	Pretty fair	Fonfrède.
Tunis			29.82	757.3															Jacques.
Sfax			29.88	758.9															Gau
Saida			29.95	760.6															Bernard.
Tebessa			29.84	757.9	76.0	24.8	18	S			6		4			0	0	Cloudy	Watrin.
Geriville					67.1	19.5	37	N			2		3			0	0	Pretty fair	Brugniaux.
Laghouat			29.84	758.0	72.9	22.7	22	WNW			4		0			0	0	Clear	Suart.
Biskra			29.73	755.2	83.8	28.8	36	NW			4		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.40	746.8	29.94	760.4	66.7	19.3	50	E			3		4			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.2	30.04	762.9	50.7	10.4	74	NNE	4.0	1.8			10			0.016	0.4		Dr. Wierzbicki.
Eperies	29.08	738.7	29.96	760.9	56.5	13.6	72	N			2		7cs; s		S	0.041	1.05		Julius Mikolik.
Gratz	28.71	729.3	29.95	760.7	59.0	15.0	72	SE			2		10			0	0		Andreas Rospini.
Hermannstadt	28.47	723.2	29.87	758.8	61.2	16.2	72	NNW			1		10			0.150	3.80		Prof. A. Gottschling
Kremsmünster, Observatory	28.52	724.3	29.83	757.7	59.5	15.3	72	ENE			5		0			0	0		The Staff.
Lemberg	28.97	735.8	29.95	760.6	57.0	13.9	73	NE			2		10			0.016	0.4		Dr. T. Stanecki.
Pola	29.84	757.8	29.95	760.6	66.2	19.0	64	SE			1		3			0	0		I.R.Hydrographic Office.
Szathmar	29.49	749.0	29.95	760.6	60.8	16.0	69	NW			2		9			0	0		Pet. Pancsics, S. J.
Szegedin	29.66	753.3	29.93	760.3	60.6	15.9	72	W			3		7			0	0		Karl Stancel.
Trieste	29.89	759.1	29.99	761.7	56.3	13.5	93	Calm			0		10			0.161	4.1	Raining	P. Busin.
Vienna	29.26	743.1	30.00	762.0	54.7	12.6	61	E			1		9			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to its Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	OBSERVER.‖
Aberdeen	30.17	766.3	30.27	768.8	48.0	8.9		E	26	11.6			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.11	764.8	30.13	765.3	54	12.2		ENE			4		7					D. clouds	G.Carrick.
Armagh, (Observatory)	29.84	757.9	30.08	764.0	49.5	9.7		ENE	13	5.8			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			29.98	761.5	52.8	11.6		ENE	28	12.5			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.45	748.0	29.97	761.2	50.0	10.0		E	12	5.4			7					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.61	752.1	30.00	762.0	50.1	10.1	66	E			4		10			0.02	0.5	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.95	760.7	29.98	761.5	81	27.2		NE			2		6					Gloomy	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.85	758.2	29.95	760.7	53.0	11.7		E			1		10					Showery	H. Todd.
Cardington			29.93	760.2	55.0	12.8		E			0-1		9					Overcast	John McLaren.
Chatham (School M. E.)	29.82	757.4	29.95	760.7	52.1	11.2		E			3		5					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.04	763.0	30.09	764.3	51	10.6		E			5		8					D. clouds	J. Mac Gowan.
Dover	29.88	758.9	29.91	759.7	54	12.2		ENE			5		3					¼ clouded	J. Costello.
Falmouth (Observatory)	29.64	752.8	29.87	758.7	50.0	10.0		E			3		10					Overcast	The Staff.
Fort Napier, Natal	27.97	710.4	30.18	766.6	60.8	16.0		NE			0		10					Overcast	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.59	751.6	29.82	757.4	85	29.4		NE			1		5					D. clouds	
Galway (Queen's College)			29.93	760.2	52	11.1		ENE			5		9					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.82	757.4	29.88	758.9	62.6	17.0		W			5		4					Blue sky	Sr-t. W. Allen.
Glasgow, (Observatory)	29.94	760.5	30.14	765.5	51.6	10.9		E			6		4					D. clouds	D. G. Maclean.
Great Yarmouth	29.99	761.7	30.00	762.0	52	11.1		E			4		3					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.76	755.9	29.93	760.2	58.0	14.4		E			4		6					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.61	752.1	29.64	752.8	53	11.7		ENE			3		3					Blue sky	Dr.S.E Hoskins, F.R.S.
Helston	30.01	762.2	30.14	765.5	53	11.7		E			6		2k			0	0	Fair	M. P. Moyle.
Holyhead	29.94	760.5	29.98	761.5	53	11.7		ENE			5		2					Blue sky	John Tilston.
Jersey	29.56	750.8	29.85	758.2	57.1	13.9		ENE			2		2					D. clouds	J. Fisher.
Kew (Observatory)	29.89	759.2	29.93	760.2	53.0	11.7		E	11	4.9			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.71	754.6	29.97	761.2	50.5	10.3		E			2		8					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.73	755.1	29.81	757.2	65.8	18.8		E			3		8					Overcast	A. King.
Nairn	30.16	766.1	30.26	768.6	51	10.6		E			4		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.01	762.2	81.0	27.2		E			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.81	757.2	30.00	762.0	51.1	10.6		SE			3	ck	9ks;d		E	0.295	7.50	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.43	747.5	29.96	761.0	50.0	10.0		ENE			2		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.71	754.6	29.97	761.2	49	9.4		E			2		10					Overcast	The Staff, for R. J. Stone, Esq.
Plymouth	29.80	756.9	29.87	758.7	50.9	10.5		E			4		10					Overcast	John Merrifield.
*Roche's Point	29.82	757.4	29.92	760.0	48	8.9		ENE			5		8			Blank	Blank	¾ clouded	Wm. Kennedy.
St. Ann's Head	29.74	755.4	29.90	759.4	48	8.9		ESE			4		10					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.34	770.6	50.1	10.1		ESE	12	5.4									Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.71	754.6	29.77	756.1	62.2	16.8		N			1		9			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	29.76	755.9	30.04	763.0	59.9	10.5		NE			2		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth Rectory	30.02	762.5	30.05	763.3	55.4	13.0	64	E			6		4			0.043	1.10	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.02	762.5	52.9	11.6		E	23	10.3			5					Squally	Rev. S. J. Perry.
Straifield Turgiss	29.70	754.4	29.92	760.0	52.9	11.6		NE			1		9					Hailing	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.88	758.9	29.91	759.7	57	13.9		SE			6		5					D. clouds	W. Newcombe.
Valencia (Observatory)	29.87	758.7	29.89	759.2	52.6	11.4		NE	27	12.1			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.91	759.7	29.95	760.7	82.0	27.8	44	S	5.9	2.6		6	7			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.15	765.8	47.0	8.3	74	S			2		4k			0	0	Star light	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.19	766.8	52.0	11.1		E			6		2k			0.02	0.5	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.81	757.2	30.00	761.9	75.5	24.2	66	SSW	6.0	2.7		0	8			0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	30.05	763.3	30.14	765.5	54.0	12.2	81	SW	13	5.8			10			0.13	3.3	Squally	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.24	768.1	49	9.4		NE			4	3	3	E		0	0		J. Youngclause.
North Unst, Shetland I's			30.38	771.6				NE			4		3			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from	Weather.	
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Dommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 13′, W. 8° 18′			Raining	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	666.5	29.92	760.0	70.7	21.5	84	SE			2	1d	3cs	E		1.38	35.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.03	762.7	30.08	763.9	44.8	7.1	76	N			4		10						
Fanöe	30.00	762.1	30.02	762.6	48.6	9.2	55	NE			4		8						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.26	768.7	30.31	769.8	50.0	10.0	89	S			4		2						
Thorshavn (Faröe)	30.35	771.0	30.39	771.9	49.5	9.7	82	SE			2		7						
Vestervig	30.10	764.6	30.20	767.0	41.4	5.2	94	NE			4		10					Raining	

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

FRENCH SERIES.

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

Alençon, Normal School	29.29	743.9	29.84	757.9	55.4	13	45	NE			3		5n		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.77	756.2	29.88	759.0	63.3	17.4	96	E			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.66	753.3	29.91	759.7	58.1	14.5	36	NNE			3		9n		ESE	0	0		Klein, Commandant.
Avignon, Normal School	29.73	755.1	29.81	757.1	63.5	17.5	61	ESE			1		8		ESE	0	0	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.26	743.2	29.81	757.3	59.2	15.1	88	SE			1		8kn		SSE	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.58	751.4	29.84	758.0	59.9	15.5	29	E			2		kn		SE	0	0		Frère Eugene Marie.
Besançon, Normal School	28.95	735.2	29.83	757.6	59.0	15	60	E			1		8		S	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.45	748.0	29.65	753.0	62.4	16 9	36	ESE			1		10		S	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.94	735.1	29.86	758.4	62.6	17	44	S			3		5cn	S	S	0.16	4.	Cloudy	Marlot, Director.
Bourges, Normal School	29.25	743.0	29.80	757.0	59.4	15.2	55	NNE			2		2k			0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	29.58	751.4	29.82	757.5	55.0	12.8	65	ESE			1		9		Calm	0	0	Threatening	Ch. de Rermaree, Dir
Caen, Normal School	29.70	754.4	29.77	756.2	56.3	13.5	74	NE			1		8		S	0	0	Very cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.29	744.0	29.71	754.5	53.2	11.8	95	E			3		10		E	0	0	Covered	September, Director.
Châlons-sur-Marne, N. Sch'	29.56	750.7	29.87	758.8	57.9	14.4	55	ESE			3		5		ENE	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.21	741 8	29.77	756.1	62.1	16.7	83	E			1		2		W	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.38	720 8	29.70	754.4	60.6	15 9	34	S			1		8		S	0	0		Alluard, Director.
Commercy, Normal School	29.01	736.8	29.87	758 6	52.5	11.4	52	E			4		kn	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.69	728.6	29.83	757.6	60.4	15.8	44	SE			3		8		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.04	737.5	29.79	756.6	63.0	17.2	76	ENE			1	ck				0.055	1.4		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.59	751.5	29.80	756.9	64.2	17.9	29	NE			1		5		E	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.49	749.1	29.80	756.8	60.8	16	31	E			4		5		E	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.89	733.8	29.80	756.8	58.1	14 5	44	W			1		5k		N			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.69	754.2	29.80	757.0	57.9	14.4	59	NE			2		10	N	NE	0	0	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.18	741.2	29.78	756.4	64.4	18.0	42	SW			1	5ck		NW	S	0.102	2.6	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.54	750.4	29.81	757.2	61.5	16.4	47	ESE			2		10		S	0.016	0.40		E. Stephan, Director.
Mirecourt, Normal School	28.80	731.6	29.85	758.1	53.2	11.8	83	NE			1		8		NE	0	0		Barbier, Director.
Mont-Louis	24.46	621.4	29.70	754.4	36.5	2.5	89	WSW	13.0	5.8			10			0.295	7.5		M. Cave, for Dr. Fines.
Nice	29.86	758.5	29.89	759.3	63.7	17.6	65	SE			3		10	SW	SE			Light rain	Capt. Boissière, Director.
Nismes, Normal School	29.61	752.1	29.81	757.2	61.0	16.1	55	S			3		10		S	0	0	Covered	M. Boyer, Director.
Perpignan	29.58	751.4	29.69	754.1	54.7	12.6	82	S	5.6	2.5			10		SE	1.295	32.9		Dr. Fines.
Pic du Midi (Plantade) H. P	22.14	562.4			39.9	4.4							10		SSW	0.122	3.1	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.74	729.9	29.80	756.8	55.8	13.2	84	S			3		5kn	S	S	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	24.88	632.0			40.3	4.6	75	SE			3		5		SSE	0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.71	754.7	29.74	755.5	65.1	18.4	35	SSE			2		8	W	SE	0	0	¾ covered	Lt. E. Decante, Director
Rouen, Normal School	29.75	755.6	29.84	757.8	63.7	17.6	58	SSE			2		5		E	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.77	756.1	29.80	756.9	56 5	13.6	57	NNE			2		5	NE	NE	0	0	Cloudy	Lt. Hercouet, Director
Saint Maur (near Paris)	29.66	753.3	29.82	757.5	60.3	15.7	26	ENE			1		10	S	ESE	0	0		E. Renou, Director.
Tarbes, Normal School	28.56	725.3	29.61	752.1	59.0	15	78	E											T. Huguet, Director
Toulouse, Observatory	28.99	736.4	29.71	754.5	62.3	11.3	85	SSE			3		10			0.059	1.5	Covered	B. Baillaud, Dir.
Tours	29.57	751.0	29.76	755.0	62.6	17.0	30	E			2		2		E	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.34	745.1	29.83	757 6	58.3	14.6	25	E			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.08	738.6	29.78	756.3	62.6	17	52	SSE			1		5		S	0.189	4.8	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	78.8	26										0.20	5.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.54	750.4			60.8	16.0	30	ENE			2		10		E	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.60	751.9	29.63	752.5	69.8	21.0	91	SE	7.6	3.4		8c				0	0	Threatening	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 386 meters, or 1,278 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.07	738.4	29.93	760.3	57.2	14.0	37	E			8		3ks	NE		0	0		Prof. Dr. Hoh.
Berlin	29.90	759.4	30.07	763.8	53.6	12.0	52	NE			4		4			0	0		Prof. Dr. Arndt.
Breslau	29.58	751.2	30.11	764.7	46.2	7.9	60	NNW			1		7			0	0		Royal University Obs'y
Carlsruhe	29.46	748.2	29.88	759.0	56.1	13.4	60	NE			2		10	NE		0	0		Albert Senz.
Cassel	29.39	746.6	30.00	762.0	54.0	12.2	42	ENE			3		8	N		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.66	753.3	30.02	762.6	53.2	11.8	44	NE			3		9			0	0		Physical Society.
Friedrichshafen	28.45	722.7	29.88	759.0	54.3	12.4	67	SW			2		8	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.04	763.1	30.11	764.9	49.5	9.7	65	NE			4		7			0	0		Dr. Reinhold Kleeman.
Kiel	30.11	764.7	30.12	765.1	47.7	8.7	56	NE			4		4			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.00	762.0	30.08	764.1	50.0	10.0	84	W			3		10	W		0.150	3.8		Prof. E. Luther.
Köslin			30.04	763.1	47.3	8.5		W			4		4			0.224	5.7		H. Müller.
Leipsic Observatory	29.65	753.0	30.07	763.8	50.4	10.2	48	ENE			3		8	E		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.85	758.3	30.08	764.1	54.5	12.5	53	NE			3		5k	NE		0.031	0.8		Dr. Assmann.
Memel	30.00	762.0	30.05	763.2	44.8	7.1	77	NW			4–5		10n					H'y showers	Reinbrecht & Issermann.
Munich	28.00	711.2	29.89	759.2	57.2	14.0	57	NE			3		8	E		0	0		Dr. C. Lang.
Neufahrwasser	30.08	764.0	30.10	764.4	53.2	11.8	65	SSW			1		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.40	746.7	29.92	760.0	52.5	11.4	55	NNE			2		10			0	0		Reallehrer Dicknether.
Posen	29.82	757.4	30.11	764.8	45.5	7.5	73	NW			4		10			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.38	746.2	29.93	760.2	52.3	11.3	71	NE			3		9	E		0.060	1.52		Imp. University Observatory.
Stuttgart	28.91	734.2	29.78	756.5	59.5	15.3	41	NE					5	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.40	721.4	29.97	761.3	56.1	13.4	62	ENE	11.2	5.0		7ck		SE		0	0		Reallehrer J. Hopfner.
Wustrow	30.09	764.3	30.11	764.9	47.7	8.7	67	N			3		8s			0.016	0.4		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.48	748.8	29.86	758.5	70.7	21.5		SW			0.5		5					¼ clear	Dr. J. F. J. Schmidt

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.64	752.8	29.69	754.1	82.2	27.9	84	S					1	WSW		0	0	Misty	
Deesa	29.17	740.9	29.63	752.5	96.8	36.0	15	WSW	18.4	8.2			0			0	0	Misty	
Bombay	29.74	755.5	29.78	756.4	85.4	29.7	74	WNW	13	5.8			3		W	0	0	D. clouds	
Poona (Yarrowda)	27.91	708.9	29.73	755.1	87.7	30.9	45	W	23	10.3			0			0	0	Blue sky	
Belgaum	27.22	691.3	29.69	754.2	86.5	30.3	45	WNW	18	8.0			3	E		0	0	Misty	
Lahore	28.72	729.5	29.43	747.5	97.2	36.2	27	E	4.1	1.8			10			0	0	Misty	
Roorkee	28.60	726.5	29.46	748.4	94.8	34.9	40	SE	4	1.8			4			0	0	Misty	
Agra	28.99	734.0	29.53	750.1	99.6	37.6	25	W	6.0	2.7			0			0	0		
Nagpur	28.57	725.6	29.56	750.7	102.9	39.4	16	NW	6.8	3.0			2	W		0	0	D. clouds	
Jubbulpore	28.26	717.7	29.57	751.0	98.5	36.9	15	NW	5.4	2.4			0			0	0	Misty	
Lucknow	29.20	741.7	29.56	750.9	94.7	34.8	50	E	0.7	0.3			0			0	0	Blue sky	
Allahabad	29.20	741.6	29.50	749.2	100.5	38.1	33	Calm	1.7	0.8			0			0	0	Blue sky	
Patna	29.37	746.1	29.55	750.3	92.1	33.4	52	NE	1.1	0.5			2	NE	NE	0	0		
Hazaribagh	27.60	701.0	29.54	750.4	92.0	33.3	35	WNW	6.1	2.7			3					Thunder-showers	
Cuttack	29.52	749.7	29.60	751.7	88.6	31.4	63	SSW	7.1	3.2			2			0	0		
Calcutta (Alipore)	29.62	752.4	29.64	753.0	82.2	27.9	83	W	13.0	5.8			8	SW	SW	0	0	D. clouds	
Goalpara	29.23	742.5	29.64	752.9	76.3	24.6	92	Calm	3.5	1.6			7			0.02	0.5	Threatening	
Chittagong	29.63	752.6	29.72	754.9	83.9	28.8	83	WSW	7.5	3.4			10			0	0	Gloomy	
Sibsagar	29.35	745.6	29.69	754.1	80.2	26.8	86	NE	1.6	0.7			10	SW	SW	0.24	6.1	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.57	751.1	29.98	761.4	59.7	15.4	62	E	1.3	0.6			3			0	0		Prof. Giovanni Clodig.
Milan	29.39	746.6	29.91	759.7	61.2	16.2	64	NE	6.3	2.8			7	E		0.339	8.6		Prof. Schiaparelli.
Padua	29.87	758.6	29.97	761.3	58.6	14.8	70	NE	9.4	4.2			10	NE		0.492	12.5		Prof. Dott. Lorenzoni.
Moncalieri	28.98	736.2	29.88	759.0	55.0	12.8	81	N	3.8	1.7			9	N		0.591	15.0		Prof. P. F. Denza.
Genoa	29.74	755.4	29.93	760.2	60.8	16.0	51	S	5.6	2.5			10	S		0.134	3.4		Prof. G. M. Garibaldi.
Mondovi	27.98	710.6	29.87	758.6	54.5	12.5	63	SE			2		10			0	0		Prof. D. C. Bruno.
Pesaro	29.89	759 3	29.94	760.5	63.3	17.4	68	NE	11.9	5.3			6	SSE		0	0		Prof. Luigi Guidi.
Florence	29.68	753.8	29.93	760.3	64.4	18.0	51	N			2		4			0.272	6.9		Cav. F. Meucci.
Leghorn	29.87	758.5	29.95	760.6	65.5	18.6	54	W	2.5	1.1			10			0	0		Prof. P. Monte.
Rome	29.76	756.0	29.94	760.4	69.6	20.9	53	SW	8.7	3.9			6			0	0		Prof. P. S. Ferrari
Lecce	29.69	754.1	29.94	760.4	67.3	19.6	44	NE	7.4	3.3			2			0	0		Prof. C. De Giorgi.
Cosenza	29.02	737.1	29.90	759.4	72.0	22.2	72	SW	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.54	750.4	29.73	755.2	71.6	22.0	45	SE			4		7	SW		0	0		Prof. A. Pacinotti.
Palermo	29.66	753.3	29.91	759.7	64.2	17.9	62	ENE	9.4	4.2			1			0	0		Prof. G. Cincciatore.
Syracuse	29.76	755.8	29.80	756.9	71.4	21.9	66	NE	4.9	2.2			9	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.41	747.0	29.92	760.0	67.3	19.6	65	ESE	0	0			7	S		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.6	17.0	68	NNE	4.1	1.8			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.70	754.4	29.90	759.4	68.5	20.3	91	SW	0.6	0.3			2s			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.88	758.9	29.94	760.5	61.5	16.4	81	ESE	8.7	3.9		0	0			0	0	Clear	The Staff.
Wakayama	29.87	758.7	29.92	759.9	61.6	16.4	67	E	2.5	1.1			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Bandt, C. E.
Guadalajara	25.04	636.1	30.12	765.0	51.8	11.0	40	NE			1	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.69	601.9			62.2	16.8	68	N	1.8	0.8		0	k			0	0	Clear.	Vicente Fernandez.
Leon	24.43	620.6	30.06	763.4	64.0	17.8	68	SW			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.65	753.2	29.91	759.7	70.0	21.1	75	SE			1	0	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.10	586.8	30.06	763.4	57.2	14.0	71	NW	6.7	3.0		2k	0			Inap.	Inap.	Clear	The Staff
Morelia	24.02†	610.2†			67.8	19.9	35	SE			3	4c	0	S		0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.98	609.1	29.89	759.3	63.9	17.7	27	SW			1	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.44	595.3	30.19	766.8	54.8	12.4	37	Calm	0	0		1c	0	E		0.14*	3.6	Clear	Prof. P. Spina.
San Luis Potosi	24.23	615.4	30.07	763.8	67.5	19.7	64	SE			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.93	760.1	29.94	760.4	79.9	26 6	90	E			1	1	4	NW	W	0	0	Fair	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.61	574.2	30.17	766.4	58.6	14.8	42	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.5 m., or 7,434.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	29.94	760.5	29.94	760.5	59.0	15.0		E			4					0	0		
Groningen	30.02	762.4	30.07	763.8	54.5	12.5		E								0	0		
Helder	30.02	762.5	30.02	762.5	55.0	12.8		ENE			4					0	0		
Hellevoetsluis	29.94	760.5	29.94	760.5	56.1	13.4	43	E			3					0	0		
Utrecht	29.94	760.4	29.98	761.6	56.7	13.7	38	ENE			3		8			0	0	Very cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Emperature of he Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.23	767.7	30.28	769.1	56.1	13.4	32	ENE	6.0	2.7			0			0	0		
Brône	30.37	771.4	30.41	772.4	48.9	9.4	42	SW	9	4			5			0	0		
Christiania	30.13	765.4	30.28	769.1	55.6	13.1	26	ENE	13	6			4			0.024	0.6		
Tromsö	29.95	760.8	30.01	762.2	39.9	4.4	82	SW	31	14			10			0.732	18.6		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.69	754.2	29.91	759.6	62.6	17.0	69	W			4		2			0.394	10.0		Dr. J. A. Sampaio.
Campo Major	28.73	729.7	29.73	755.1	54.7	12.6	77	W	3.1	1.4			10			0.311	7.9		Dr. A. M. R. dos Santos
Funchal (Madeira)	29.95	760.7	30.04	762.9	66.4	19.1	51	SW	8.7	3.9			5			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.45	748.1	29.82	757.3	57.0	13.9	65	WNW	17.4	7.8			9			0.087	2.2		The Staff.
Ponta Delgada (Azores)	29.84	757.9	29.91	759.7	61.2	16.2	87	SSW	15.0	6.7			10			0.067	1.7	Light rain	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A.M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mossamedes, Benguela			29.90	759.5	72.5	22.5		W			1		1		W	1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J.T.d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds.			30.25	768.4	77.9	25.5		NNE			3		2		NE	2	NE		D. clouds	Antonio Sarmento, Q.M
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Novo Redondo, S 11° 32', E. 12° 45'			29.90	759.4	77.0	25.0		NNW			2		1			1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Hong-Kong, China			30.00	762.0	84.9	29.4		SSE			2		2		SSE	1			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	30.37	771.3	30.39	771.8	44.8	7.1	48	N	4	2			0						Capt. Sselliwerstow.
Astrakhan	29.96	761.0	29.88	758.9	65.5	18.6	32	ESE	16	7		10cp							Capt. Wisganow.
Barnaul	29.77	756.1	30.26	768.7	57.2	14.0	35	NE	0	0			0						Meteorological Obs.
Dorpat	30.02	762.4	30.26	768.7	48.9	9.4	78	ENE	16	7			9ks;n						Prof. Dr. Weihrauch.
Ekaterinburg	29.13	739.9	30.00	763.4	72.5	22.5	26	WSW	22	10			6k;ks					Hazy	Meteorological Obs.
Irkutsk																			
Kasan	29.81	757.2	30.07	763.7	76.3	24.6	37	Calm	0	0			10						Physical Cabinet.
Kertch	29.82	757.5	29.84	758.0	55.0	12.8	98	SSE	7	3			8						Lagorio.
Kieff	29.15	740.4	29.77	756.1	63.7	17.6	76	NNE	4	2			10cks,n					Light rain	Physical Cabinet.
Krotkowo*	29.63	752.7	30.08	764.1	77.9	25.5	24	NW	0.2	0.1			1						Cand. Fatjanow.
Lugan	29.61	752.0	29.81	757.1	70.7	21.5	44	ENE	18	8			10			Blank	Blank		Meteorological Obs.
Moscow	29.58	751.3	30.10	764.6	70.0	21.1	47	SE	7.8	3.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.69	754.0	29.76	755.8	60.4	15.8	25	S	9	4			10n						Kurdakof.
Nikolaievsk, on the Amoor	30.18	766.5	30.26	768.7	32.4	0.2	89	E	9	4			10n					Snowing	
Nukuss	29.57	751.1	29.79	756.7	82.6	28.1	13	NNE	13	6			0						
Orenburg																			
Pekin (China)	29.69	754.1	29.83	757.7	59.9	15.5	66	Calm	0	0			5ks						Physical Observatory.
St. Petersburg	30.32	770.1	30.34	770.5	47.5	8.6	65	E	13	6			5k						Central Physical Obs.
Tashkend	28.15	715.0	29.64	752.9	75.7	24.3	57	Calm	0	0			8					Light clouds	Teich, A. M.
Tiflis	28.32	719.3	29.68	753.8	70.7	21.5	62	S	9	4			9n						Physical Observatory.
Vladivostock																			
Warsaw	29.65	753.1	30.07	763.8	54.0	12.2	60	W	4	2			8ks						Astronomical Obs.
Wilna	29.61	752.1	30.02	762.4	66.0	18.9	69	NE	4	2			5						Astronomical Obs.
Yeniseisk	29.94	760.4	30.22	767.6	56.5	13.6	35	SW	11	5			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47', E. 48° 34'.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.56	760.8	29.67	753.5	61.7	16.5	62	SSE	2.7	1.22			9			0.096	2.44	Raining	Antonio Rave, Director
Bilbao, Met. Obs'y	29.65	753.1	29.71	754.6	53.6	12.0	85	N	1.1	0.51			10			0.020	0.5	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.67	677.5			42.4	5.8	91	NE	3.8	1.72			9			0.177	4.5	Almost cov'd	Domingo Martin y Peres
Madrid, Royal Observatory	27.41	696.2	29.68	753.9	41.4	5.2	90	W	15.7	7.00		0	10			0.571	14.5	Raining	The Staff.
Murcia, Met. Obs'y	29.49	749.1	29.64	752.9	64.2	17.9	64	SSW	6.7	3.00		5	5	NE		0.022	0.55	Raining	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.74	730.1	29.63	752.6	56.8	13.8	61	N	8.7	3.9			8			0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.92	759.9	29.98	761.5	75.2	24.0	85	E	3.6	1.6			10n			0.035	0.9	Raining	Benito Vines, S. J.
Manilla, Philippine Islands	29.79	756.6	29.84	757.9	87.8	31.0	64	ENE	4.0	1.8			s			0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.76	755.8	29.86	758.3	61.0	16.1	66	W	21.3	9.5		0	10		W	0.062	1.6		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.97	761.2	30.06	763.5	77.4	25.2	94	SE		1.60		6ck	5kn	SE	SE	0.266	6.75	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.30	769.6	30.34	770.6	40.3	4.6	.....	S	.....	.....	4	.....	0	.....	.....	0	0	.....	
Umea	30.41	772.3	30.46	773.6	45.0	7.2	55	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Hernosand	30.42	772.6	30.47	773.9	53.2	11.8	47	E	.....	.....	2	.....	0	.....	.....	0	0	.....	
Stockholm	30.12	765.0	30.30	769.5	42.1	5.6	75	NE	.....	.....	8	.....	5	.....	.....	.....	.....	Raining	
Wisby	30.00	761.9	30.06	763.4	43.9	6.6	85	E	.....	.....	6	.....	5	.....	.....	0.051	1.3	.....	
Sub-Series.																			
Upsala	30.22	767.6	30.31	769.8	49.6	9.8	40	ENE	17.2	7.7	.....	.....	9	.....	.....	0.001	0.02	.....	Nils Ekholm.

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

Swedish Naval Series.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 47° 13′, W. 12° 54′	.....	.....	29.78	756.5	52.2	11.2	73	E	.....	.....	1	.....	9	.....	.....	.....	.....	.....	Misty	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.41	721.7	29.84	758.0	52.9	11.6	58	NNW	.....	.....	3	.....	2	.....	.....	0.276	7.0	Cloudy	The Observatory.
Zurich	28.25	717.5	29.89	759.3	52.0	11.1	72	W	.....	.....	1	.....	8	.....	.....	0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.1 mm.; Thermometer, —4.3 Cent. Relative Humidity, +1 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.83	757.6	61.2	16.2	79	N	8	3.5	.....	.....	8	.....	SW	0.087	2.2	Raining	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.98	761.5	68.9	20.5	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightlycld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.92	759.9	73.4	23.0	58	W	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	55.0	12.8	.....	SW	1	0.4	.....	.....	10n	.....	.....	0.20	5.1	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.64	752.8	29.70	754.4	55.0	12.8	90	SW	10	4.5	.....	.....	10k	.....	.....	0.50	12.7	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.72	754.9	29.77	756.1	46.0	7.8	92	S	3	1.3	.....	.....	10s	.....	.....	0.015	0.38	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.93	760.2	59.8	15.4	63	W	.....	.....	2	0	5s	.....	.....	0.169	4.29	Fair	James Smith, M. A.
Dalhousie, N. B.	29.52	749.8	29.69	754.1	43.0	6.1	.....	NW	.....	.....	1	.....	10n	.....	.....	0.04	1.0	Raining	H. A. Johnson.
Father Point, Quebec	29.73	755.1	29.76	755.9	37.3	2.9	90	SW	9	4.0	.....	.....	10n	.....	.....	0.22	5.6	Foggy	J. McWilliams.
Fredericton, N. B.	29.73	755.1	29.79	756.7	52.4	11.3	86	W	1	0.4	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.31	744.5	30.15	765.8	41.0	5.0	82	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear.	James Stewart.
Granton, Ontario	29.00	736.6	30.10	764.5	53.0	11.7	86	NW	.....	.....	1	0	0	.....	.....	0.38	9.7	Clear.	James Grant.
Halifax, N. S.	29.77	756.1	29.90	759.4	53.2	11.8	87	S	5	2.2	.....	8cs	0	.....	.....	0.015	0.38	Fair	A. Allison.
Hamilton, Ontario	29.51	749.5	29.88	758.9	58.7	14.8	82	NW	.....	.....	1	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Henrr's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.67	753.6	30.00	762.0	57.6	14.2	78	W	7	3.1	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.76	755.9	29.80	756.9	44.5	6.9	92	SW	8	3.6	.....	9k	0	SW	.....	0.11	2.8	Cloudy	C. H. Rigby.
Montreal, Quebec	29.72	754.9	29.92	760.0	59.5	15.3	73	W	10	4.5	.....	.....	10ks	.....	.....	0.19	4.8	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.71	754.6	29.74	755.4	38.5	3.6	86	W	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.33	745.0	30.02	762.5	55.8	13.2	70	NW	10	4.5	.....	0	4s	.....	.....	0.16	4.1	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.38	746.2	30.07	763.8	48.2	9.0	74	W	5	2.2	.....	0	0	.....	.....	0.08	2.0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.32	744.7	30.08	763.5	56.7	13.7	69	NW	.....	.....	1	0	0	.....	.....	0.20	5.1	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.41	747.0	30.09	764.3	59.1	15.1	94	N	5	3.6	.....	0	0	.....	.....	0.03	0.8	Clear	H. Morgan.
Port Stanley, Ontario	29.45	748.0	30.09	764.3	58.1	14.5	82	NW	4	1.8	.....	0	0	.....	.....	0.01	0.3	Clear.	M. Payne.
Quebec, Quebec	29.52	749.8	29.83	757.7	57.0	13.9	81	NE	.....	.....	1	2c	6s	.....	.....	0.04	1.0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.54	750.3	30.00	762.0	51.0	10.6	82	NW	8	3.6	.....	0	2ks	.....	.....	0.12	3.0	Fair	W. H. McIntyre.
St. John, N. B.	29.67	753.6	29.84	757.9	44.0	6.7	100	S	12	5.4	.....	.....	Fog	.....	.....	0	0	Dense fog	G. Murdock, C. E.
Saugeen, Ontario	29.45	748.0	30.17	766.3	49.1	9.5	71	SW	5	2.2	.....	0	0	.....	.....	0.24	6.1	Clear	K. Stewart.
Stratford, Ontario	28.83	732.3	30.10	764.5	52.9	11.6	80	NW	5	2.2	.....	0	0	.....	.....	0.407	10.34	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.79	756.7	29.83	757.7	49.0	9.4	91	SW	4	1.8	.....	9ck	1n	W	.....	0.10	2.5	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.72	754.9	30.10	764.5	56.0	13.3	74	NW	8	3.6	.....	2cs	0	.....	.....	0	0	Clear.	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.04	737.6	30.08	764.0	58.3	14.6	64	NW	11	4.9	.....	0	0	.....	.....	0.02	0.5	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.85	758.2	29.92	760.0	46.8	8.2	98	SW	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.07	763.8	30.23	770.4	34	1.1	100	SE	.....	.....	.....	.....	10n	.....	.....	.....	.....	Sleeting	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	30.22	767.6	42.1	5.6	.....	S	.....	.....	2	.....	.....	.....	.....	1.20	30.5	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 4 and 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.92	760.0	29.99	761.7	69	20.6	61	NW	7	3.1		2c	5s	W	W	0.39	9.9	Fair	
Alpena, Michigan	29.46	748.3	30.10	764.5	51	10.6	72	W	7	3.1		0	0			0.25	6.3	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.99	736.3	30.12	765.0	64	17.8	89	NE	7	3.1		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.04	763.0	30.06	763.5	60	15.6	94	S	11	4.9		5k;Hz	Fog	Calm	Calm	0	0	Hazy	
Augusta, Georgia	29.99	761.7	30.18	766.6	71	21.7	85	NE	4	1.8		0	8s		SE	0	0	Fair	
Baltimore, Maryland	30.00	762.0	30.04	763.0	71	21.7	75	S	6	2.7		8ck	Fog	W	Calm	0	0	Fair	
Barnegat, New Jersey	30.00	762.0	30.03	762.7	64	17.8	83	SW	13	5.8		5ck	Haze	NW	Calm	0	0	Fair	
Bismarck, Dakota	28.16	715.3	30.02	762.5	57	13.9	55	SE	10	4.5		0	0			Inap.	Inap.	Clear	
Boerne, Texas	28.58	725.9	29.86	758.4	68	20.0	90	SE	2	0.9		0	5ks		SE	0	0	Fair	
Boise City, Idaho	26.73	678.9	29.69	754.1	57	13.9	87	SE	6	2.7			10s		Calm	0.04	1.0	Cloudy	
Boston, Massachusetts	29.78	756.4	29.93	760.2	70	21.1	61	SW	16	7.2		8k	Haze	SW	Calm	0	0	Fair	
Brackettville, Texas	28.85	732.8	29.87	758.7	72	22.2	85	E	12	5.4			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	29.12	739.6	30.13	765.3	45	7.2	84	SE	6	2.7			10s		SW	0	0	Cloudy	
Brownsville, Texas	29.88	758.9	29.93	760.2	79	26.1	87	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.39	746.5	30.09	764.3	51	10.6	97	SW	4	1.8			Fog		Calm	0.30	7.6	Foggy	
Burkes, Arizona					61	16.1	35	S			1	0	0			0	0	Clear	
Burlington, Vermont	29.67	753.6	29.95	760.7	62	16.7	61	NW	10	4.5		2cs	2ks	W	NW	0.17	4.3	Fair	
Cairo, Illinois	29.78	756.4	30.16	766.1	69	20.6	90	N	14	6.3			10s		N	0	0	Threatening	
Campo, California																			
Cape Hatteras, N. Carolina	30.17	766.3	30.17	766.3	73	22.8	85	SW	4	1.8		2cs	0	W		0	0	Clear	
Cape Henry, Virginia	30.11	764.8	30.12	765.0	70	21.1	80	SW	16	7.2		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	73	22.8	85	SE	1	0.4		10c	0	Calm		0	0	Cloudy	
Cape May, New Jersey	30.03	762.7	30.06	763.5	65	18.3	84	S	7	3.1		1k	Haze	SW		0	0	Clear	
Castroville, Texas	29.20	741.7	29.88	758.9	74	23.3	76	SE	2	0.9			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.01	762.2	30.03	762.7	75	23.9	77	E	5	2.2		0	4ks		SE	0	0	Fair	
Charleston, South Carolina	30.06	763.5	30.12	765.0	76	24.4	86	SE	9	4.0		0	8s		E	0	0	Cloudy	
Charlotte, North Carolina	29.31	744.5	30.11	764.8	66	18.9	84	SW	1	0.4		8c	Sm'e	SW	Calm	0	0	Fair	
Chattanooga, Tennessee	29.37	746.0	30.16	766.1	66	18.9	84	Calm	0	0		5cs	Sm'e	S	Calm	0	0	Fair	
Cheyenne, Wyoming	24.01	609.8	29.95	760.7	43	6.1	59	SE	1	0.4		0	0			0	0	Clear	
Chicago, Illinois	29.49	749.0	30.18	766.6	58	14.4	58	N	6	2.7		0	0			0.10	2.5	Clear	
Chincoteague, Virginia	30.07	763.8	30.09	764.3	65	18.3	93	SW	14	6.3		1c	0	NE		0	0	Clear	
Cincinnati, Ohio	29.51	749.5	30.15	765.8	66	18.9	74	N	4	1.8			10ks		N	2.14	54.4	Cloudy	
Cleveland, Ohio	29.41	747.0	30.13	765.3	59	15.0	70	W	10	4.5		1cs	0	W		0.31	7.9	Clear	
Coleman City, Texas	28.23	717.0	29.83	757.7	72	22.2	76	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.29	744.0	30.11	764.8	64	17.8	78	N	4	1.8		5k	0	W		0.65	16.5	Fair	
Concho, Texas	28.08	713.2	29.68	753.9	70	21.1	90	SE	2	0.9			10s		SW	0	0	Cloudy	
Corsicana, Texas	29.59	751.6	30.05	763.3	68	20.0	84	S	3	1.3			10ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.58	751.3	30.22	767.6	57	13.9	75	NW	2	0.9		0	0			0	0	Clear	
Dayton, Washington T'y					47	8.3	77	SW			1		10ks		Calm	0.20	5.1	Cloudy	
Deadwood, Dakota	25.29	642.4			56	13.3	35	SW	8	3.6		5c	0	W		0	0	Fair	
Decatur, Texas	28.90	734.0	30.02	762.5	76	24.4	69	SE	8	3.6		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.03	762.7	30.05	763.3	71	21.7	71	SW	17	7.6		2c	0	SW		0	0	Clear	
Denison, Texas	29.26	743.2	30.01	762.2	73	22.8	85	S	2	0.9		0	2ks		Calm	0	0	Clear	
Denver, Colorado	24.75	628.6	29.97	761.2	43	6.1	79	E	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.31	744.5	30.19	766.8	55	12.8	74	Calm	0	0		0	Haze		Calm	0	0	Clear	
Detroit, Michigan	29.45	748.0	30.12	765.0	54	12.2	74	NW	6	2.7		0	0			0.11	2.8	Clear	
Dodge City, Kansas	27.43	696.7	29.68	753.9	56	13.3	81	SE	4	1.8			10s		Calm	0	0	Cloudy	
Dubuque, Iowa	29.53	750.0	30.23	767.8	55	12.8	62	W	1	0.4		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.48	748.8	30.17	766.3	49	9.4	85	SW	6	2.7		5c	0	NW		0.17	4.3	Fair	
Eagle Pass, Texas	29.18	741.1	29.88	758.9	75	23.9	81	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	29.72	754.9	29.78	756.4	48	8.9	93	S	7	3.1			10s;fg		SW;calm	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.40	746.7	30.09	764.3	69	20.6	75	W	7	3.1		2c	0	W		1.76	44.7	Fair	
Escanaba, Michigan	29.49	749.0	30.14	765.5	55	12.8	62	NW	7	3.1		5c	0	NW		0	0	Fair	
Florence, Arizona	28.37	720.6	29.97	761.2	63	17.2	57	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.03	635.8	30.48	774.2	44	6.7	45	E	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.87	707.9	29.68	753.9	49	9.4	63	SE	5	2.2		8c	0	NW		0.04	1.0	Cloudy	
Fort Custer, Montana	26.63	676.4			50	10.0	44	E	6	2.7			10s		Calm	0	0	Cloudy	
Fort Davis, Texas	25.23	640.8	30.19	766.8	61	16.1	40	W	5	2.2		0	0			0	0	Clear	
Fort Elliot, Texas	26.97	685.0	29.17	740.9	55	12.8	68	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Gibson, Indian Ter.	29.50	749.3	30.01	762.2	74	23.3	76	E	3	1.3		2ck	0	W		0	0	Fair	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	61	16.1	14	E	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.72	729.5	29.95	760.7	70	21.1	85	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.13	689.1			45	7.2	67	Calm	0	0		5cs	0	Calm		0	0	Fair	
Fort McKavett, Texas	27.74	704.6	29.60	751.8	68	20.0	84	Calm	0	0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.78	731.0	29.84	757.9	74	23.3	81	SE	3	1.3		0	0			0	0	Clear	
Fort Stevenson, Dakota	28.13	714.5			45	7.2	76	E	8	3.6		2c	0	Calm		0	0	Fair	
Fort Verde, Arizona					52	11.1	29	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.97	761.2	30.01	762.2	77	25.0	86	S	1	0.4		2k	0	S		0	0	Clear	
Grand Haven, Michigan	29.53	750.0	30.17	766.3	57	13.9	75	W	3	1.3		0	0			0.15	3.8	Clear	
Helena, Montana					42	5.6	74	SW	4	1.8			10s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.39	746.5	30.16	766.1	61	16.1	71	NW	2	0.9		5c	0	W		0.40	10.2	Fair	
Indianola, Texas	29.98	761.5	30.01	762.2	78	25.6	82	SE	6	2.7		0	1ks		SE	0	0	Clear	
Jacksboro, Texas	28.88	733.5	29.95	761.0	75	23.9	77	SW	6	2.7		0	0			0	0	Clear	
Jacksonville, Florida	30.02	762.5	30.04	763.0	76	24.4	82	E	5	2.2		5cs;k	0	Calm		0.13	3.3	Fair	
Keokuk, Iowa	29.56	750.8	30.16	766.1	64	17.8	53	N	5	2.2		0	0			0	0	Clear	
Key West, Florida	29.98	761.5	30.01	762.2	73	22.8	90	SE	14	6.3			10s		SE	3.11	79.0	Cloudy	
Kittyhawk, North Carolina	30.15	765.8	30.18	766.6	72	22.2	85	SW	10	4.5		5c	Haze		Calm	0	0	Fair	
Knoxville, Tennessee	29.18	741.1	30.16	766.1	67.5	19.7	79	W	1	0.4			10ks		SW	0	0	Cloudy	
La Crosse, Wisconsin	29.48	748.8	30.22	767.6	50	10.0	79	SW	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	48	8.9	56	Calm	0	0		0	2s		Calm	0	0	Fair	
Laredo, Texas																			
Leavenworth, Kansas	29.29	744.0	30.11	764.8	64	17.8	53	E	8	3.6		9k	0	SW		0	0	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.73	755.1	30.04	763.0	74	23.3	90	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.62	752.3	29.95	760.7	57	13.9	87	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.56	750.8	30.11	764.8	66	18.9	79	N	7	3.1			10s		Calm	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.42	747.3	30.08	764.0	74	23.3	63	SW	2	0.9		10c	Sm'e	W	Calm	0	0	Cloudy	
Madison, Wisconsin	29.20	741.7	30.19	766.8	54	12.2	61	NW	4	1.8		0	0			0	0	Clear	
Marquette, Michigan	29.40	746.7	30.10	764.5	52	11.1	73	W	11	4.9		0	0			0.18	4.6	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.36	720.3	30.05	763.3	73	22.8	81	SE	6	2.7			10s		Calm	0	0	Cloudy	
Memphis, Tennessee	29.71	754.6	30.04	763.0	74	23.3	81	SE	6	2.7		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.46	748.3	30.19	766.8	55	12.8	56	NW	10	4.5		1c	0			0.06	1.5	Clear	
Mobile, Alabama	30.01	762.2	30.05	763.3	72	22.2	85	NE	6	2.7		5k	2s	NE	Calm	Inap.	Inap.	Fair	
Montgomery, Alabama	29.87	758.7	30.10	764.5	70	21.1	90	NE	7	3.1		2k	0	E		0.11	2.8	Clear	
Morgantown, West Virginia	29.09	738.9	30.05	763.3	68	20.0	79	NE	1	0.4			10s		Calm	0	0	Cloudy	
Mt Washington, N H	23.70	602.0	30.06	763.5	38	3.3	100	NW	44	19.7			Fog		NW	0.15	3.8	Foggy	
Nashville, Tennessee	29.61	752.1	30.12	765.0	73	22.8	76	NE	2	0.9		5ks	0	N		0	0	Fair	
New Haven, Connecticut	29.87	758.7	29.98	761.5	67	19.4	84	SW	3	1.3			10s		SW	0	0	Cloudy	
New London, Connecticut	29.95	760.7	29.99	761.7	63	17.2	89	SW	9	4.0		8ck	2s;hz	SW	SW Calm	0	0	Cloudy	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	79	26.1	82	NW	8	3.6		0	5ks		NW	0	0	Fair	
Newport, Rhode Island	29.93	760.2	29.98	761.5	55	12.8	93	SW	12	5.4			Fog			0	0	Foggy	
New River, North Carolina					76	24.4	72	Calm			0	10cs	Haze	W	Calm			Cloudy	
New York, New York	29.84	757.9	30.01	762.2	66	18.9	90	W	10	4.5		8k	Haze	SW	Calm	0.09	2.3	Fair	
Norfolk, Virginia	30.06	763.5	30.12	765.0	75	23.9	72	SW	6	2.7		0	8s		Calm	0	0	Fair	
North Platte, Nebraska	27.14	689.3	29.67	753.6	55	12.8	56	S	24	10.7		0	0			0	0	Clear	
Olympia, Washington Ter	29.49	749.0	29.53	750.0	44.0	6.7	92	SW	1	0.4			10n		SW	0.29	7.4	Light rain	
Omaha, Nebraska	29.00	736.6	30.08	764.0	62	16.7	51	E	6	2.7		0	1s		W	0	0	Clear	
Oswego, New York	29.75	755.6	30.08	764.0	52	11.1	79	W	8	3.6		2c	0	W		1.00	25.4	Fair	
Pembina, Dakota	29.21	741.9	30.04	763.0	46	7.8	77	Calm	0	0		0	0			0	0	Clear	
Pensacola, Florida	30.02	762.5	30.05	763.3	71	21.7	85	NE	6	2.7			10ks			0.31	7.9	Cloudy	
Philadelphia, Pennsylvania	29.98	761.5	30.02	762.5	69	20.6	85	SW	12	5.4			10s		W	0	0	Cloudy	
Phœnix, Arizona	28.62	726.9	30.49	774.4	60	15.6	49	NE	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.83	452.9	30.04	763.0	24	— 4.4	48	SW	42	18.8		0	0			0	0	Clear	
Pilot Point, Texas	29.26	743.2	30.08	764.0	72	22.2	85	S	4	1.8		0	0			0	0	Clear	
Pioche, Nevada	23.87	606.3	29.64	752.8	52	11.1	35	S	12	5.4		0	2s		Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.24	742.7	30.01	762.2	64	17.8	73	N	5	2.2		10k	0	N		0.07	1.8	Cloudy	
Port Huron, Michigan	29.45	748.0	30.12	765.0	47	8.3	85	NE	9	4.0		2c	0	Calm		0.03	0.8	Clear	
Portland, Maine	29.80	756.9	29.85	758.2	62	16.7	77	SW	8	3.6		5k	2s	Calm	Calm	Inap.	Inap.	Fair	
Portland, Oregon	29.50	749.3	29.57	751.1	45	7.2	88	N	2	0.9			10n		NW	0.06	1.5	Light rain	
Portsmouth, North Carolina					73	22.8	81	SE	5	2.2		8cs;k	0	Calm		0	0	Cloudy	
Prescott, Arizona	24.71	627.6	30.07	763.8	42	5.6	58	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	75	23.9	77	E	7	3.1		8cs	1ks	E	E	0.83	21.1	Cloudy	
Red Bluff, California	29.36	745.7	29.72	754.9	50.5	10.3	86	SE	19	8.5			10s		S	0.54	13.7	Cloudy	
Rio Grande City, Texas	29.87	758.7	30.09	764.3	75	23.9	81	SE	12	5.4		0	0			0	0	Clear	
Rochester, New York	29.45	748.0	30.05	763.3	60	15.6	65	NW	9	4.0		0	0			0.35	8.9	Clear	
Roseburg, Oregon	29.06	738.1	29.63	752.6	41	5.0	91	SE	3	1.3			10ks		SW	0.46	11.7	Cloudy	
Sacramento, California	29.75	755.6	29.82	757.4	52	11.1	93	SW	13	5.8			10n		Calm	0.27	6.9	Light rain	
St. Louis, Missouri	29.63	752.6	30.20	767.1	62	16.7	67	N	5	2.2		8ck	0	S		0.04	1.0	Fair	
St. Paul, Minnesota	29.34	745.2	30.17	766.3	49	9.4	78	NE	2	0.9		0	0			0	0	Clear	
Salt Lake City, Utah	29.40	745.2	29.73	755.1	61	16.1	40	SE	15	6.7		5k	0	W		0	0	Fair	
San Antonio, Texas	29.33	745.0	30.01	762.2	72	22.2	85	E	3	1.3			10s		Calm	0	0	Cloudy	
San Diego, California	29.92	760.0	30.00	762.0	57	13.9	87	NW	1	0.4			Fog		SW	0	0	Foggy	
Sandusky, Ohio	29.47	748.5	30.13	765.3	60	15.6	65	W	12	5.4		0	0			0.54	13.7	Clear	
Sandy Hook, New Jersey	29.97	761.2	30.00	762.0	68	20.0	84	SW	13	5.8		8ck	0	W		0	0	Fair	
San Francisco, California	29.82	757.4	29.88	758.9	50	10.0	89	W	10	4.5			10n		Calm	0.61	15.5	Light rain	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	51	10.6	16	NE	7	3.1		0	0			0	0	Clear	
Savannah, Georgia	30.01	762.2	30.10	764.5	72	22.2	90	E	5	2.2			10s		SE	0.01	0.3	Cloudy	
Shreveport, Louisiana	29.84	757.9	30.06	763.5	76	24.4	86	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.12	765.0	30.16	766.1	76	24.4	82	SE	8	3.6		10k	0	Calm		0	0	Cloudy	
Socorro, New Mexico	25.43	645.9	29.49	749.0	49	9.4	31	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.56	750.8	30.23	767.8	61	16.1	63	NE	5	2.2		0	2s		W	0.32	8.1	Fair	
Springfield, Massachusetts	29.84	757.9	29.96	761.0	66	18.9	84	S	4	1.8		0	8ks		SW	0	0	Cloudy	
Stockton, Texas	26.93	684.0	29.93	760.2	66	18.9	74	SE	1	0.4		0	0			0	0	Clear	
Thatcher's Island, Mass	29.86	758.4	29.91	759.7	56	13.3	100	S	5	2.2			Fog			0	0	Light fog	
Toledo, Ohio	29.45	748.0	30.12	765.0	62	16.7	56	W	8	3.6		0	0			0.28	7.1	Clear	
Tucson, Arizona	27.46	697.5	30.01	762.2	66	18.9	27	S	6	2.7			0			0	0	Clear	
Umatilla, Oregon	29.18	741.1	29.66	753.4	47	8.3	85	W	5	2.2			10n		SE	0.05	1.3	Light rain	
Uvalde, Texas																			
Vicksburg, Mississippi	29.83	757.7	30.08	764.0	74	23.3	85	E	1	0.4		5ck	0	NW		0	0	Fair	
Virginia City, Montana	23.96	608.6	29.44	747.8	45	7.2	75	W	6	2.7			10s		Calm	0.05	1.3	Cloudy	
Visalia, California	29.52	749.8	29.88	758.9	55	12.8	81	SE	6	2.7			10ks		S	0	0	Cloudy	
Washington, D. C.	29.95	760.7	30.06	763.5	72	22.2	71	S	5	2.2		5ck	2s	W	Calm	0	0	Fair	
Wickenburg, Arizona					61	16.1	45	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.09	764.3	30.17	766.3	74	23.3	81	SE	2	0.9		10c	0	Calm		0	0	Cloudy	
Winnemucca, Nevada	29.28	642.1	29.64	752.8	55	12.8	39	SW	12	5.4		0	5ks		SW	0	0	Fair	
Wood's Holl, Massachusetts	29.95	760.7	29.99	761.7	54	12.2	100	SW	25	11.2			Fog		SW	0	0	Foggy	
Yankton, Dakota	28.60	734.0	30.20	767.1	52	11.1	54	S	12	5.4		10c	0	W		0	0	Cloudy	
Yuma, Arizona	29.66	753.4	29.80	756.9	62	16.7	67	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0			63.5	17.5	66	Calm	0	0		2ck	0			0.11	2.8	Fair	Thomas Herran.
Havana, Cuba, W. I.	29.97	761.2	30.02	762.5	77	25.0	82	Calm	0	0		8cs	4ks	SW	SE	0.26	6.6	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	79	26.1	79	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Nassau, W. I.	29.92	760.0	30.00	762.0	79.5	26.4	74	E	5	2.2		5ck	5cs	SE	E	0.03	0.8	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	81	27.2	83	E			3		8ks	E		0.400	10.16	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.39	746.5	29.94	760.5	79	26.1	89	Calm			0		Fog			0	0	Foggy	Francesco J. Cisneros.
Rivas, Nicaragua					77.0	25		SE				7ks		NW	SE	0.87	22.	Covered	Carl Flint.
Santiago de Cuba, W. I.	29.98	761.5	30.01	762.2	80	26.7	78	Calm	0	0		2cs	4k	Calm	SE	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.07	763.8	30.12	765.0	27.0	— 2.8	94	N	11	4.9		1c	0	N		0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,383 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm.; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.06	763.5	71	21.7	90	NNE	14	6.3			10		SE	0.77	19.6			Cloudy	
§ Navy Yard, Portsmouth, N. H.	29.90	759.4	63	17.2	83	SW	6	2.7			10			0	0			Foggy	
Naval Hospital, Yokohama, Japan	29.93	760.2	65	18.3	73	Calm			0		0			0	0			Clear	
§ Adams, Punta Arenas, Costa Rica	29.91	759.7	79	26.1	91	NE			1		5		NE					Fair	
§ Alaska, Callao, Peru *	29.96	761.0	63	17.2	89	SSE			2		10					Long	SW	Hazy	
§ Alert, N. 31° 50′, E. 140° 27′	29.90	759.4	71	21.7	80	NNW			1		2		Calm			Long	NW	Clear	
Alliance, Norfolk, Va.	30.13	765.3	70	21.1	95	SW			1		1		SW	0	0			Pleasant	
§ Colorado, New York, N. Y.	29.99	761.7	68	20.0	90	SW	5	2.2			5		W	0	0			Hazy	
§ Constitution, Hampton Roads, Va.	30.13	765.3	68	20.0	100	SW	9	4.0			5							Pleasant	
§ Franklin, Off Navy Yard, Norfolk, Va	30.16	766.1	71	21.7	85	SW	8.4	3.8			2		SW	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.95	760.7	52	11.1	100	W	2.4	1.1			2		W	0.442	11.23			Raining	
§ Jamestown, Sitka, Alaska *	29.75	755.6	40	4.4	91	Calm			0		8					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	29.97	761.2	80	26.7	81	NW			2		2		NW			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	29.97	761.2	60	15.6	100	NE			2		10			0	0	Smooth		Foggy	
§ Michigan, Erie, Pa.	30.03	762.7	61	16.1	77	SW			3		2		NW					Fair	
§ Monocacy, Shanghai, China	29.63	752.6	73	22.8	85	SSE			2		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	29.94	760.5	73	22.8	90	ESE	12	5.4			10		Calm	0	0			Cloudy	
Nipsic. Villafranca, France	29.88	758.9	62	16.7	61	ESE			2		10							Overcast	
§ Onward, Ancon Bay, Peru †	29.95	760.7	64	17.8	89	SSW			2		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.65	753.1	74	23.3	90	SSE			2		5?							Cloudy?	
§ Passaic, Washington, D. C.	30.03	762.7	73	22.8	81	NW			2		2			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.80	756.9	55	12.8	100	SW			3		10					Smooth		D. clouds	
§ Powhatan, Annapolis, Md	30.04	763.0	71	21.7	80	SW			1		5		NW					Hazy	
§ Quinnebaug, Gibraltar, Mediterranean	29.83	757.7	58	14.4	82	W			3		10		W			Smooth		Showery	
§ Richmond, Shanghai, China	29.64	752.8	73	22.8	95	NW			2		0			0	0			Clear	
§ Rio Bravo, Brownsville, Texas †	30.16	766.1	72	22.2	??	SE			1		5		Calm	0	0			Fair	
§ Saratoga, N. 39° 30′, W. 26° 19′	29.89	759.2	59	15.0	94	NW			4		2		Calm	Heavy	Heavy	Mod'ate	SW	Clearing	
§ Shenandoah, Montevideo, Uruguay	29.95	760.7	59	15.0	100	W			1		0					Smooth		Foggy	
§ St. Louis, League Island, Pa.	30.03	762.7	68	20.0	90	SW	6	2.7			2			0	0			Clear	
Swatara, Singapore, India †	29.80	756.9	85	29.4	83	WSW			0-1		5		W			Smooth		Fair	
§ Tennessee, N. 9° 50′, W. 79° 38′	29.92	760.0	81	27.2	91	NE	5	2.2			8		Calm	1.0	25.	Smooth		Rainy	
Ticonderoga, Yokohama, Japan	29.92	760.0	68	20.0	90	SSE			1		0					Smooth		Clear	
§ Trenton, Sarl Siglar, Archipelago	29.82	757.4	68	20.0	65	NE			2		5			4 h'rs light	4 h'rs light	Mod'ate	SW	Cloudy	
§ Tuscarora, Mare Island, Cal.	29.85	758.2	53	11.7	86	S			4		10		SW	0.1	3.	Smooth		Rainy	
§ Vandalia, Navy Yard, Brooklyn, N. Y.	30.00	762.0	69	20.6	80	WSW			3		8		SW					Hazy	
§ Wabash, Boston, Mass.	29.95	760.7	71	21.7	71	SW	12	5.4			8			0	0			Cloudy	
§ Wachusett, Montevideo, Uruguay	29.97	761.2	59	15.0	??	W			1		Fog			0	0	Smooth	W	Foggy	
Wyoming, Constantinople, Turkey	29.83	757.7	60	15.6	88	N			2		5		N			Smooth	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
Liverpool, Eng	30.00	762.0	55	12.8	56	E			4		6		E	Light	Light			Fair	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 50° 30', W. 16° 48' ...*†	29.95	760.7	57	13.9	87	NE			4		8		NE	1 h'r	1 h'r	Rough	NE	Cloudy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
‡ S. S. Newbern, W. Metzger, N. 24° 20', W. 110° 10' ...†	29.76	755.9	72	22.2	95	WSW			3		0			0	0	Small	NW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 47° 59', W. 29° 41'	29.86	758.4	61	16.1	61	SSE			5–6		2		SSE			2	SE	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strasburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
‡ S. S. Belgic, L. Meyer, Hong-Kong, China ...†	29.91	759.7	84	28.9	87	S			3		5		SSW			Smooth		Fair	D. A. Joyce.
‡ S. S. Gaelic, W. H. Kidley, San Francisco, Cal ...†	29.92	760.0	54	12.2		SW			4		n		S	Considerable.		Smooth		Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
‡ S. S. Ancon, E. Alexander, San Francisco, Cal ...†	29.92	760.0	55	12.8		SW			5		10		SW					Rainy	
‡ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
‡ S. S. State of California G. Dubney, Portland, Oregon ...†	29.59	751.6	40	4.4		SE			1		8		S					Showery	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 25° 25′, W. 113° 12′....†	29.93	760.2	62	16.7	83	NW			3		8		E			Mod'ate	NW	Cloudy	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury. N. 16° 55′, W. 100° 25′....†	29.88	758.9	79	26.1	86	Calm			0		0					Small	WSW	Clear	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. N. 37° 07′, W. 124° 55′....†	29.83	757.7	50	10.0	100	W			4		2		NW	0	0	Heavy	WSW	Clear.	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 24° 46′ W. 111° 10′....†	29.96	761.0	63	17.2		NW			3		5		NW	0	0	Mod'ate	NW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry.... N 36° 48′, W. 156° 00′....†	30.24	768.1	60	15.6	94	WNW			4		8		W			Mod'ate	SW	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	29.87	758.7	60	15.6		SW			5		8		SE	0	0	Smooth		Hazy	E. LeSack.
§ S. S. City of Tokio, J. Maury Yokohama, Japan.....†	29.84	757.9	65	18.3	78	NW			3		0			0	0			Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama.....†	29.92	760.0	83	28.3	83	NNE			5		2		E	0	0			Clear	
§ S. S. Dakota, D. E. Griffiths N. 39° 40′, W. 124° 10′...†	29.78	756.4	51	10.6	79	SW			4		2		SW	0	0	Mod'ate	W	Clear	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly																			
§ S. S. Idaho, N. 47° 03′, W. 124° 45′....†	30.03	762.7				SW			1		8		SW	0	0	Mod'ate	W	Cloudy	
§ S. S. Zealandia, R. C. Ghest, N. 22° 39′, W. 153° 30′.....	30.17	766.3				E			4				E			Mod'ate	E	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 42′ W. 57° 48′....†	30.14	765.5	67	19.4		W			3		2		W	0	0	Smooth		Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 44° 28′, W. 43° 06′.....†	30.09	764.3	47	8.3		SE			3		2		SE	0	0	Smooth	E	D. clouds	W. S. Waugh.
S. S. Britanic, H. Perry.....																			
S. S. Celtic, B. Gleadell.....																			J. Jones.
S. S. Republic, P. J. Irving																			
																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.....																			
Schr. Adelle Fuller, J. Jorgensen, Sandy Hook, N. J.....	29.99	761.7	68	20.0	74	WSW	8	3.6			8k		W	0	0			Cloudy	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 35° 45′, W. 67° 06′.....†	30.24	768.1	72	22.2		SSW			3		10		SW	Lt. sho	wers.	Smooth	S	Misty	J. Jorgensen. L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 27° 40′, E. 39° 20′.....†	30.20	767.1	72	22.2		SSW			6		2		SSW	0	0	Rough	SW	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin. Arroyo, Porto Rico	30.20	767.1	78	25.6		E			3		10		E	Show	ers.	Smooth		Showery	
Hippolyta, N. 48° 45′, W 12° 09′.....*	29.59	751.6	53	11.7		ESE			2		8		E;SW	Sli	ght.	Mod'ate	E	Cloudy	
Iron Cross, W. Randall.....																			W. Randall.
Barque Syringa, E. Lewis...																			E. Lewis.

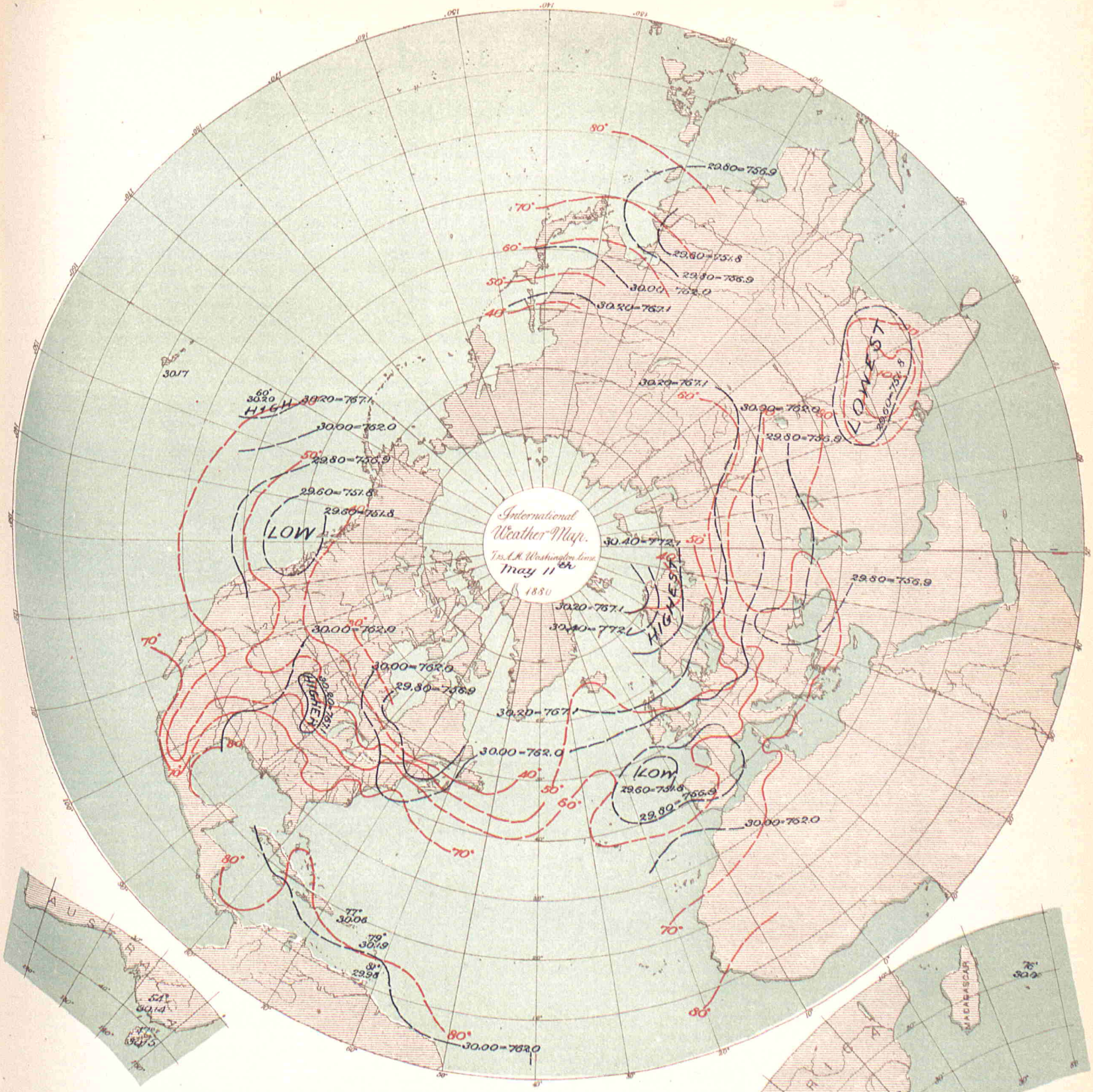
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 12, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.16	766.1				NW			1		1			0	0	Very fair	Dr. Ollive.
Nemours			30.04	762.9	66.7	19.3	78	NNW			2		5			0	0	Cloudy	Metge.
Algiers			29.97	761.3	68.0	20.0	50	W			7		0			0.020	0.5	Clear.	Nicolas.
La Calle			29.92	760.0	67.1	19.5	72	NW			3		5			0	0	Cloudy	Fonfrède.
Tunis			29.89	759.1															Jacques.
Sfax			29.98	761.4															Gau.
Saida			30.03	762.8															Bernard.
Tebessa			29.96	760.9	67.5	19.7	28	NNW			3		0			0	0	Clear	Watrin.
Geriville					72.1	22.3	39	N			1		0			0	0	Clear	Brugniaux.
Laghouat			30.01	762.2	71.4	21.9	25	S			2		0			0	0	Clear.	Suart.
Biskra			29.93	760.1	75.9	24.4	38	NW			4		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.34	745.3	29.87	758.7	71.2	21.8	51	E			3		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.2	30.03	762.7	54.3	12.4	91	N	4.7	2.1			10			0.075	1.9		Dr. Wierzbicki.
Eperies	29.06	738.1	29.93	760.2	58.3	14.6	76	N			1		10ks		S	0	0		Julius Mikolik.
Gratz	28.66	727.9	29.87	758.8	65.8	18.8	50	SSW			3		0			0	0		Andreas Rospini.
Hermannstadt	28.42	721.8	29.81	757.1	64.0	17.8	76	NW			2		10			0.053	1.35	Raining	Prof. A. Gottschling
Kremsmünster, Observatory	28.48	723.5	29.78	756.3	66.7	19.3	72	ENE			4		1			0	0		The Staff.
Lemberg	28.91	734.2	29.86	758.5	65.5	18.6	72	NE			1		9			0.295	7.5		Dr. T. Stanecki.
Pola	29.75	755.7	29.86	758.4	72.9	22.7	54	S			1		2			0	0		I.R. Hydrographic Office.
Szathmar	29.39	746.4	29.83	757.7	71.6	22.0	56	NW			2		6			0.012	0.3		Pet. Pancsics, S. J.
Szegedin	29.57	751.0	29.84	757.9	65.8	18.8	75	NW			3		5			0	0		Karl Stancel.
Trieste	29.76	756.0	29.87	758.6	70.9	21.6	75	NW			1		5			0	0		P. Busin.
Vienna	29.22	742.3	29.97	761.1	64.8	18.2	58	SE			1		3			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.24	768.1	30.34	770.6	47.9	8.8		ENE	17	7.6			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.23	767.8	30.25	768.3	52	11.1		ENE			4		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.96	761.0	30.19	766.8	50.3	10.2		E	16	7.2			4					Misty	S. Call.
Bidston (Liverpool Obs)			30.14	765.5	53.1	11.7		ENE	29	13.0			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.61	752.1	30.13	765.3	51.4	10.8		E	31	13.9			5					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.78	756.4	30.18	766.6	50.4	10.2	60	E			4		7			0	0	D. clouds	J. McLandsborough.
Bridgetown, Barbadoes	29.91	759.7	29.94	760.5	81.5	27.5		NE			2		6					Gloomy	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.99	761.7	30.09	764.3	55.2	12.9		E			2		5					D. clouds	H. Todd.
Cardington			30.05	763.3	55.0	12.8		E			2		7					Blue sky	John McLaren.
Chatham (School M. E.)	29.92	760.0	30.05	763.3	54.1	12.3		E			7		5					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.19	766.8	30.23	767.8	52	11.1		SE			3		0					Blue sky	J. Mac Gowan.
Dover	29.96	761.0	29.99	761.7	52	11.1		ENE			5		1					¾ clouded	J. Costello.
Falmouth (Observatory)	29.74	755.4	29.96	761.0	55.6	13.1		E			4		1					Foggy	The Staff.
Fort Napier, Natal	27.86	707.6	30.06	763.5	72.7	22.6		NE			2		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.81	757.2	30.04	763.0	87	30.6		Calm			0		10					D. clouds	
Galway (Queen's College)			30.00	762.0	58	14.4		E			3		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.98	761.5	30.04	763.0	64.8	18.2		W			4		2					Blue sky	Sgt. W. Allen.
Glasgow, (Observatory)	30.06	763.5	30.26	768.6	50.8	10.4		E			4		5k					D. clouds	D. G. Maclean.
Great Yarmouth	30.10	764.5	30.10	764.5	50	10.0		ENE			6		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.86	758.4	30.03	762.7	59.8	15.4		NE			5		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.67	753.6	29.89	759.2	51.5	10.8		NE			3		7					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.14	765.5	30.26	768.6	60	15.6		E			6	c				0	0	Very fine	M. P. Moyle.
Holyhead	30.09	764.3	30.13	765.3	55	12.8		E			6		0					Blue sky	John Tilston.
Jersey	29.61	752.1	29.90	759.4	54.2	12.3		ENE			4		8					Misty	J. Fisher.
Kew (Observatory)	29.99	761.7	30.03	762.7	56.4	13.6		ENE	28	12.5			8					Threatening	The Met'g'l Office.
Leicester (Museum)	29.87	758.7	30.13	765.3	54.9	12.7		NE			1		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.67	753.6	29.75	755.6	66.4	19.1		NE			3		8					Overcast	A. King.
Nairn	30.22	767.6	30.31	769.9	52	11.1		SE			5		0					Clear	W. D. Penny.
Nassau, Bahamas			29.97	761.2	75.5	24.2		E			2		10					Drizzling	C. S. Duncombe.
Nottingham (Observatory)	29.96	761.0	30.15	765.8	54.0	12.2		NE			4		5k		NE	0.002	0.05	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.57	751.1	30.10	764.5	53.0	11.7		NE			5–6		8					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.82	757.4	30.07	763.8	54	12.2		N			4		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.87	758.7	29.94	760.5	60.3	15.7		E			5		4					D. clouds	John Merrifield.
*Roche's Point	29.95	760.7	30.05	763.3	53	11.7		ESE			6		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.85	758.2	30.01	762.2	56	13.3		E			5		4					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.36	771.1	50.7	10.4		E	8	3.6			5					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.75	755.6	29.82	757.2	63.4	17.4		Calm			0		9					Showery	Serg't W. H. Lyne.
Sheffield	29.92	760.0	30.20	767.1	51.7	10.9		NE			3		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.18	766.6	30.21	767.3	52.3	11.3	63	E			7		5			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.18	766.6	52.0	11.1		E	19	8.5			8					D. clouds	Rev. S. J. Perry.
Strathfield Turgiss	29.70	756.7	30.01	762.2	56.4	13.6		E			3–4		9					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.94	760.5	29.96	761.0	65	18.3		E			6		4					D. clouds	W. Newcombe.
Valencia Observatory)	29.94	760.5	29.97	761.2	55.6	13.1		E	21	9.4			10					Misty	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.08	764.0	30.12	765.0	68.2	20.1	72	WNW	5.6	2.5		6	2			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.12	765.0	48.0	8.9	87	S			2		6k			0.35	8.9		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.31	769.9	50.8	10.4		E			4		3k			0.02	0.5	Fine	Andrew Gibb.
Mauritius (Observatory)	29.85	758.2	30.04	762.9	77.1	25.1	55	SSE	11.5	5.1		0	1			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	30.15	765.8	30.24	768.1	53.5	11.9	74	S	5	2.2			10			0.02	0.5	Gloomy	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.21	769.9	51	10.6		SE			3	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.37	771.4				NE			2		2			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount.	Clouds. Direction.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																Capt. J. P. Maclear, R.N.
City of Agra																Capt. Thos. Young.
City of Cashmere																Capt. W. M. Grieve.
Barque Commewyne																Capt. Jas. Buchan.
Ship British Commodore																Capt. J. W. Thorne.
Barque Decapolis																Capt. T. M. Almond.
Barque Dochra																Capt. H. Spalding.
S. S. Ethiopia																Capt. A. Campbell.
Barque Fedalma																Capt. H. L. Fox.
Brig. Fylde																Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			30.00	762.0	80	26.7		Calm			0		6		D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																Capt. Wm. Waring.
Barque Hope																Capt. Jas. Campbell.
S. S. Richmond																Capt. W. H. Stuart.
Barque Royal Alexandra, N. 48° 37′, W. 7° 48′			29.88	758.9	52.6	11.4		ENE			4		3		Misty	Capt. W. P. Hughes.
S. S. Strathleven																Capt. C. W. Pearson.
S. S. Sunbeam																Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	29.90	759.4	68.0	20.0	92	SE			1	8c; ck				Inap.	Inap	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.19	766.7	30.23	767.9	49.1	9.5	71	ESE			2		7						
Fanöe	30.17	766.3	30.19	766.8	51.4	10.8	61	ENE			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.20	767.0	30.24	768.1	52.5	11.4	78	S			2		2						
Thorshavn (Faröe)	30.39	772.0	30.43	772.9	48.4	9.1	75	SE			2		8						
Vestervig	30.14	765.5	30.23	767.9	50.4	10.2	73	NE			2		10						

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

FRENCH SERIES.

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

Alençon, Normal School	29.33	745.0	29.88	759.0	64.4	18	53	E			1		5kn		E	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.84	758.0	29.95	760.7	69.4	20.6	92	NE			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.67	753.5	29.91	759.8	64.6	18.1	40	E			3	ck	5k		E	0	0		Klein, Commandant.
Avignon, Normal School	29.73	755.1	29.81	757.1	56.3	13.5	95	N			1		10		SE	0.59	15.	Raining	Giraud, Director.
Bar-sur-Seine	29.26	743.3	29.80	757.0	66.6	19.2	45	SE			1		8n			0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.62	752.4	29.88	759.0	64.2	17.9	35	ENE			2	c			S	0	0		Frère Eugene Marie.
Besançon, Normal School	28.91	734.2	29.77	756.2	65.1	18.4	56	NNE			1		2		NNE	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.58	751.2	29.77	756.2	57.6	14.3	80	WSW			1		10	SW	WNW	0.004	0.1	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.92	734.6	29.84	757.9	66.2	19	60	SW			1		8cn		NW	0.024	0.6	Very cloudy	Marlot, Director.
Bourges, Normal School	29.28	743.6	29.82	757.4	63.9	17.7	73	ESE			1		5ckn		ENE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.62	752.3	29.86	758.5	60.1	15.6	62	NE			3		5		NE	0	0	Threatening	Ch. de Rermaree, Dir.
Caen, Normal School	29.75	755.7	29.83	757.6	51.8	11	68	NNE			1		5		S	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.32	744.7	29.73	755.1	58.3	14.6	78	N			2		8		N	2.17	55.	Very cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.53	750.0	29.84	758.0	71.4	21.9	53	E			2		2			0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.23	742.4	29.79	756.7	65.3	18.5	88	E			1		0			0.020	0.5	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.43	722.1	29.82	757.5	63.0	17.2	47	SE			1		10		S	0.024	0.6		Allnard, Director.
Commercy, Normal School	28.99	736.3	29.82	757.4	63.3	17.4	46	E			1		kn	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.67	728.2	29.81	757.2	55.2	12.9	81	E			1		10		E	0.28	7.	Raining	L. Kina, Director.
Grenoble, Normal School	29.06	738.2	29.82	757.3	60.1	15.6	71	NW			1		kn			0.020	0.5		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.62	752.3	29.83	757.7	58.8	14.9	78	E			4		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.54	750.2	29.84	757.8	65.3	18.5	56	ESE			3		5		ESE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.86	733.0	29.76	755.9	65.3	18.5	57	W			1		5s		N			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.75	755.7	29.86	758.5	61.5	16.4	59	E			2		8	NE	E	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.18	741.1	29.78	756.3	64.4	18.0	57	NW			1		cn		NW	0.110	2.8		Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.48	748.7	29.75	755.6	56.3	13.5	90	NW			1		10		E	0.638	16.20	Raining	E. Stephan, Director.
Mirecourt, Normal School	28.78	731.1	29.80	756.8	63.7	17.6	53	NE			1		sn		NE	0	0		Barbier, Director.
Mont-Louis	24.58	624.3	29.82	757.3	41.0	5.0	84	WSW	9.4	4.2			9			0.354	9.0		M. Cave, for Dr. Fines.
Nîsmes, Normal School	29.72	755.0	29.76	755.9	59.0	15.0	76	N			3		10	E	N	0.228	5.8	Light rain	Capt. Boissière, Director.
Perpignan	29.58	751.4	29.79	756.6	59.2	15.1	79	NE			1		10		S	0.492	12.5	Covered	M. Boyer, Director.
Pic du Midi (Plantade) H. P	29.66	753.4	29.77	756.1	58.5	14.7	74	NE	9.4	4.2			7		NNE	3.82	97.0		Dr. Fines.
Pic du Midi (Summit) H. P	22.28	566.0			33.8	1.0							10		SW	0.783	19.9	Snowy	M. Baylac, for Gen'l de Nansouty
Privas, Normal School	28.77	730.7	29.83	757.7	55.8	13.2	77	N			1		5n	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	24.95	633.7			40.6	4.8	91	ESE			4		10			0.051	1.3	Misty	Allnard, Director.
Rochefort, Naval Obs'y	29.77	756.1	29.80	756.9	59.7	15.4	70	ESE			3		10	WNW	WNW	0.59	15.	Raining	Lt E. Devante, Director
Rouen, Normal School	29.79	756.7	29.88	758.9	65.1	18.4	53	ENE			1		5		E	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.82	757.3	29.85	758.2	59.9	15.5	63	ENE			3		5	NE	NE	0	0	Cloudy	Lt. Hercouet, Director
Saint Maur (near Paris)	29.69	754.2	29.86	758.4	67.5	19.7	36	NNE			2		2	S	SE	0	0		E. Renou, Director.
Tarbes, Normal School	28.71	729.3	29.78	756.3	59.0	15	78	NW											T. Huguet, Director
Toulouse, Observatory	29.14	740.1	29.86	758.4	52.3	11.3	85	NW			2		10			0.394	10.0	Covered	B. Baillaud, Dir.
Tours	29.61	752.0	29.80	757.0	66.2	19.0	51	E			2		10		E	0.035	0.9	Covered	M. de Tastes.
Versailles, Observatory	29.38	746.3	29.87	758.8	63.0	17.2	34	E			2		5			0	0	Fair	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.04	737.6	29.73	755.2	66.2	19	63	SSE			1		10			0.12	3.	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.12	765.0	30.15	765.7	79.2	26.2										0.24	6.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.59	751.5			65.3	18.5	36	NNE			1		3		SE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.97	761.3	30.00	761.9	61.0	16.1	85	NNE	4.7	2.1			10			0.594	15.1	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.06	738.2	29.92	760.0	66.2	19.0	48	E			8		6ks	E		0	0		Prof. Dr. Hoh.
Berlin	29.92	760 0	30.09	764.3	62.6	17.0	41	E			1		7			0	0		Prof. Dr. Arndt.
Breslau	29.57	751.1	30.10	764.6	58.8	14.9	61	ESE			3		4			0	0		Royal University Obs'y.
Carlsruhe	29.40	746.7	29.81	757.1	66.4	19.1	64	NE			4		9	SW		0	0		Albert Senz.
Cassel	29.37	746.0	29.98	761.4	64.8	18.2	40	ENE			4		0			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.57	751.0	29.93	760.3	69.8	21.0	29	NE			3		3			0	0		Physical Society.
Friedrichshafen	28.36	720.4	29.76	755.8	64.8	18.2	56	NE			7		5	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.07	763.6	30.13	765.4	54.0	12.2	64	ENE			3		0			0	0		Dr. Reinhold Kleeman.
Kiel	30.15	765.8	30.17	766.2	51.1	10.6	55	ENE			4		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.10	764.5	30.18	766.6	50.7	10.4	84	NW			4		10	NW		0.004	0.1		Prof. E. Luther.
Köslin			30.15	765.8	56.5	13.6		NE			2		3			0	0		H. Müller.
Leipsic Observatory	29 63	752.6	30.05	763.2	61.5	16.4	41	E			3		8	SE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.85	758.2	30.08	764.0	61.5	16.4	53	ENE			4		2cs	E		0	0		Dr. Assmann.
Memel	30.08	764.0	30.13	765.2	53.4	11.9	94	N			1–2		9ks						Reinbrecht & Issermann.
Munich	28.03	711.9	29.88	758.9	62.6	17.0	50	NE			5		2			0	0	Squally	Dr. C. Lang.
Neufahrwasser	30.21	767.3	30.23	767.7	48.6	9.2	74	NE			3		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.32	744.8	29.85	758.2	66.9	19.4	47	NNE			2		5			0	0		Reallehrer Dicknether.
Posen	29.83	757.7	30.12	765.0	59.2	15.1	57	NE			6		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.29	744.0	29.83	757.6	64.4	18.0	56	NE			4		7	SE		0	0		Imp. University Observatory.
Stuttgart	28.87	733.3	29.73	755.1	69.3	20.7	40	SE					4	S		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.39	721.2	29.97	761.1	64.6	18.1	64	E	5.1	2.3		4ck		E		0	0		Reallehrer J. Hopfner.
Wustrow	30.17	766.3	30.19	766.9	50.9	10.5	59	E			3		3s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.49	749.0	29.87	758.7	72.3	22.4		SW			3.0		5					½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.64	753.0	29.70	754.2	83.8	28.8	74	SSW					0			0	0	Blue sky	
Deesa	29.16	740.8	29.62	752.3	99.0	32.2	13	WSW	18.7	8.4			0			0	0	Blue sky	
Bombay	29.76	755.9	29.80	756.9	87.4	30.8	71	W	9	4.0			0			0	0	Blue sky	
Poona (Yarrowda)	27.93	709.4	29.74	755.5	88.5	31.4	29	WNW	24	10.7			0			0	0	Blue sky	
Belgaum	27.28	692.8	29.76	756.0	85.1	29.5	53	WNW	4	1.8			3	E		0	0	D. clouds	
Lahore	28.82	732.1	29.54	750.3	94.1	34.5	29	N	7.8	3.5			5			0	0	Misty	
Roorkee	28.66	727.9	29.52	749 9	94.8	34.9	33	E	5	2.2			4			0	0	Thunder	
Agra	29.00	736.6	29.54	750.2	102.6	39.2	16	SW	5.9	2.6			0			0	0		
Nagpur	28.60	726.3	29 59	751.6	101.3	38.5	16	NW	6.4	2.9			0			0	0	Blue sky	
Jubbulpore	28.29	718.6	29.62	752.3	92.2	33.4	16	Calm	4.2	1.9			0			0	0	Blue sky	
Lucknow	29.19	741.5	29.56	750.7	99.4	37.4	55	SSE	0.6	0.3			0			0	0	Blue sky	
Allahabad	29.25	742.9	29.55	750.5	100.7	38.2	27	Calm	2.0	0.9			4			0	0	D. clouds	
Patna	29.41	747.1	29.59	751.6	91.1	32.8	57	E	3.2	1.4			6	E	E	0	0	D. clouds	
Hazaribagh	27.65	702.4	29.66	753.2	77.6	25.3	72	ESE	9.9	4.4			7		E	0.81	20.6	Thunder-storm.	
Cuttack	29.61	752.0	29.69	754.1	88.9	31.6	53	SSW	8.7	3.9			2			0	0	D. clouds	
Calcutta (Alipore)	29.63	752.5	29.65	753.0	85.7	29.8	61	S	4.0	1.8			2		NNW	0	0	D. clouds	
Goalpara	29.28	743.7	29.69	754.0	79.1	26.2	85	Calm	3.9	1.7			1			0.21	5.3	D. clouds	
Chittagong	29.62	752.4	29.71	754.6	83.9	28.8	83	SSW	7.4	3.3			3			0	0		
Sibsagar	29.38	746.3	29.72	754.8	79.5	26.4	89	NE	1.3	0.6			10	W	W	0.07	1.8	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.48	748.7	29.88	759.0	70.9	21.6	38	E	1.3	0.6			3			0	0		Prof. Giovanni Clodig.
Milan	29.35	745.4	29.86	758.4	61.7	16.5	62	N	3.1	1.4			9	E		0.378	9.6		Prof. Schiaparelli.
Padua	29.78	756.5	29.89	759 2	67.3	19.6	47	ESE	11.9	5.3			2			0.051	1.3		Prof. Dott. Lorenzoni.
Moncalieri	28.99	736.4	29.89	759.3	50.7	10.4	92	N	3.8	1.7			10			0.953	24.2		Prof. P. F. Denza.
Genoa	29.62	752.4	29.81	757.2	57.2	14.0	69	N	15.5	6.9			10	SE		0.713	18.1		Prof. G. M. Garibaldi.
Mondovi	28.02	711.7	29.91	759.7	45.0	7.2	91	S			4		10			2.402	61.0		Prof. D. C. Bruno.
Pesaro	29.80	757.0	29.85	758 2	63.5	17.5	72	NE	13.0	5.8			4			0	0		Prof. Luigi Guidi.
Florence	29.54	750.4	29 80	756.9	68.9	20.5	57	SE			2		10	SW		0	0		Cav. F. Meucci.
Leghorn	29.72	755.0	29.81	757.2	62.2	16.8	82	ENE	10.5	4.7			10			0.331	8.4		Prof. P. Monte.
Rome	29.64	752.9	29.82	757.3	65.3	18.5	75	SSW	10.5	4.7			10			0.205	5.2		Prof. P. S. Ferrari
Lecce	29.59	751.5	29.84	757 8	68.9	20.5	55	ENE	3.8	1.7			3			0	0		Prof. C. De Giorgi.
Cosenza	28.99	736.3	29.86	758.5	68.0	20.0	71	NW	0	0			10			0.012	0.3		Prof. D. Conti.
Cagliari	29.58	751.2	29.76	756.0	65.3	18.5	55	WNW			4		3	NW		0.501	12.7		Prof. A. Pacinotti.
Palermo	29.60	751.9	29.85	758 2	61.2	16.2	67	NNW	11.9	5.3			10	WSW		0	0		Prof. G. Ciacciatore.
Syracuse	29.67	753.6	29.71	754.7	72.1	22.3	75	E	5.6	2.5			6	ESE		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.32	744.6	29.83	757.7	61.9	16.6	80	W	5.6	2.5			10		SW	0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					63.9	17.7	97	NE	0.7	0.3			10n			0.960	24.89	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.64	752.8	29.83	757.7	68.0	20.0	99	WSW	5.4	2.4			10m			1.260	31.75	Raining	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.83	757.7	29.89	759 2	61.9	16.6	70	ESE	8.2	3.7		0	0			0	0	Clear	The Staff.
Wakayama	29.77	756.1	29.82	757.4	71.1	21.7	77	S	8.3	3.7			10ckn		S	0.270	6.86	Light rain	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.05	636.3	30.07	763.7	57.2	14.0	42	E			1	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.69	601.7			63 1	17.3	66	Calm	0	0		0	0			0	0	Clear	Vicente Fernandez.
Leon	24.48	620.5	30.05	763.3	63.9	17.7	71	S			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.70	754.3	29.96	760.9	72.2	22.3	95	E			1	1cs	0			0	0	Foggy	F. Quijano, C. E.
Mexico, Central Observatory	23.11	587.1	30.07	763.8	57.2	14.0	76	Calm	0	0		0	0			0	0	Fine	The Staff
Morelia	23.94†	608.1†			69.6	20.9	33	NE			2	0	0			0	0	Clear.	M. Fena, M. D.
Pabellon (Aguascalientes)	23.97	608.9	29.89	759.2	63.0	17.2	68	Calm			0	0	0			0	0	Hazy	M. Y. de Leon, M. E.
Puebla (Catholic Institute)	23.44	595.4	30.26	768.6	50.0	10.0	75	Calm	0	0		1s	0	N		Inap.	Inap.	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.09	764.3	64.9	18.3	64	SE			1	1	4	W	E	0.14	3.6	Fair	G. Barroeta, M. D.
Tiacotalpam	29.91	759.6	29.92	759.9	79.9	26.6	91	W			1	0	0			0	0	Hazy	Prof M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.91	574.2	30.18	766.5	57 7	14.3	63	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	29.99	761.8	29.99	761.8	60.8	16.0		NE			4					0	0		
Groningen	30.04	762.9	30.09	764.3	56 7	13 7		E								0	0		
Helder	30.07	763.8	30.07	763.8	50.7	10.4		NE			4					0	0		
Hellevoetsluis	29.99	761.7	29.99	761.7	60.8	16.0	48	ENE			4					0	0		
Utrecht	29.97	761.2	30.02	762.4	62.4	16.9	38	ENE			4		2			0	0	L'tly cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.20	767.1	30.26	768.5	56.5	13.6	48	W	7.8	3.5			1			0	0		
Brōno	30.29	769.4	30.33	770.4	49.6	9.8	52	Calm	0	0			9			0	0		
Christiania	30.18	766.5	30.33	770.3	49.8	9.9	64	ENE	7	3			10			0	0		
Tromsō	30.16	766.0	30.21	767.4	36.3	2.4	57	SW	7	3			10			0.020	0.5		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.27	743.5	29.48	748.9	59.0	15.0	80	SW			4		6			0.709	18.0		Dr. J. A. Sampaio.
Campo Major	28.97	735.7	29.97	761.1	59.0	15.0	50	W	3.8	1.7			9			0	0		Dr. A. M. R. dos Santos
Funchal (Madeira)	29.89	759 2	29.98	761.4	64.4	18.0	71	SW	9.4	4.2			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.64	752.8	30.00	762.0	59.9	15.5	66	SW	11.2	5.0			7	W		0 004	0.1		The Staff.
Ponta Delgada (Azores)	29.38	746.2	29.41	747.0	60.1	15.6	66	SW	11.2	5.0			3			0.417	10.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A.M. de Sande, Com'd't
Duque da Terceira																				J. C M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela			29.88	758.9	69.6	20.9		SW			1		0			1	NE		Blue sky	C. J. de Sonna Barcellos, Q. M.
Rio Duro																				J.T.d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds.			30.27	768.8	79.7	26.5		NE			3		7		NE	2	NE		D. clouds	Antonio Sarmento, Q.M
Sâ da Bandeirâ																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello Lobito, Benguela			29.86	758.5	76.1	24.5		NNW			2		1			1			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Hong-Kong, China			30.04	763.0	80.6	27.0		SW			4		6		SW	2	wsw		D. clouds	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	30.14	765.5	30.16	766.0	45 5	7.5	60	WSW	9	4			9k						Capt. Sseliwerstow.
Astrakhan	29.93	760.2	29.85	758.1	71.4	21.9	42	SE	13	6			10						Capt. Wisganow.
Barnaul	29.58	751.2	30.07	763 7	60.3	15.7	36	S	0	0			9					Light clouds	Meteorological Obs.
Dorpat	30.04	762.9	30.27	768.9	66.4	19.1	63	E	7	3			3ck						Prof. Dr. Weihrauch.
Ekaterinburg	29.15	740.4	30.10	764.5	61.0	16.1	59	N	4	2			8kn						Meteorological Obs.
Irkutsk																			
Kasan	29.88	758.9	30.14	765.6	69.3	20.7	52	N	7	3			7						Physical Cabinet.
Kertch	29.88	758.9	29.90	759.4	58.1	14.5	96	S	4	2			10						Lagorio.
Kieff	29.25	743.0	29.86	758.4	72.0	22.2	44	NE	7	3			0					Dense haze.	Physical Cabinet.
Krotkowo*	29.64	752.9	30.09	764.3	77.7	25.4	19	NNE	4	2			10						Cand. Fatjanow.
Lugan	29.59	751.5	29.76	756 5	77.0	25.0	31	E	22	10			9					Light clouds	Meteorological Obs.
Moscow	29.65	753.1	30.19	766.7	67.3	19.6	55	NW	10.1	4.5			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.84	757.9	29.91	759.7	69.4	20.8	65	S	4	2			5cs;ks						Kurdakof.
Nikolaievsk, on the Amoor																			
Nukuss	29.69	754.0	29.91	759.6	83.3	28.5		NNE	9	4			0						
Orenburg																			
Pekin (China)	29.79	756.6	29.93	760.2	65.7	18.7	18	NW	16	7			0						Physical Observatory.
St. Petersburg	30.31	769.8	30.32	770.2	53 6	12.0	72	E	4	2			10kn					Light clouds	Central Physical Obs.
Tashkend	28.28	718.3	29.78	756.3	76.5	24.7	48	Calm	0	0			2					Light clouds	Teich, A. M.
Tiflis	28 42	721.9	29.77	756.1	77.5	25.3	38	Calm	0	0			3ks						Physical Observatory.
Vladivostock																			
Warsaw	29.65	753.1	30.07	763.8	54.3	12.4	94	NNE	11	5			10n					Raining	Astronomical Obs.
Wilna	29.72	754.9	30.13	765.3	71.1	21.7	54	ENE	2	1			8						Astronomical Obs.
Yeniseisk	29.71	754.7	30.00	762.0	46.4	8.0	87	SW	13	6			10					Raining	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.67	753.6	29.77	756.2	66.9	19.4	54	SW	6.0	2.69			8k			0.006	0.15		Antonio Rave, Director
Bilbao, Met. Obs'y	29.89	759.3	29.95	760.8	58.8	14.9	75	NW	1.8	0.81			10			0.055	1.4	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26 95	684.6			51.4	10.8	77	SW	0.7	0.33			8			0.020	0.5	Raining	Domingo Martin y Perez
Madrid, Royal Observatory	27.70	703.7	29.95	760.6	52.7	11.5	64	W	7.4	3.33		0	8			0.098	2.5	Very cloudy	The Staff.
Murcia, Met. Obs'y	29.78	756.4	29.93	760.2	69.8	21.0	52	NW	1.4	1.97		3	4	SE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.97	735.8	29.86	758.4	57.6	14.2	69	SW	15.0	6.7			9			0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.87	758.6	29.93	760.3	74.8	23.8	84	SE	4.9	2.2		1ck;cs	3k	SW	SE	1.268	32.2	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.79	756.6	29.84	757.9	87.5	30.8	64	NNE	5.1	2.3			1s			0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.97	761.3	30.07	763.8	63.3	17.4	66	WSW	4.1	1.8		0	7		SW	0.168	4.3		Capt. C. Pulsxon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	78.8	26.0	89	E	7.5	3.34		5ks	3k	E	E	0.984	25.00	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150 5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.12	765.1	30.16	766.1	44.6	7.0	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	.....	
Umea	30.26	768.5	30.31	769.8	57.2	14.0	39	SW	.....	.....	4	.....	4	.....	.....	0	0	.....	
Hernosand	30.29	769.3	30.34	770.6	57.9	14.4	38	S	.....	.....	4	.....	0	.....	.....	0	0	.....	
Stockholm	30.18	766.6	30.36	771.1	50.4	10.2	62	E	.....	.....	7	.....	8	.....	.....	0.039	1.0	.....	
Wisby	30.10	764.6	30.16	766.1	56.8	13.5	73	E	.....	.....	2	.....	10	.....	.....	0.016	0.4	.....	
Sub-Series.																			
Upsala	30.21	767.4	30.30	769.6	56.8	13.8	45	ENE	8.7	3.9	.....	.....	3	.....	.....	0	0	.....	Nils Ekholm.

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

SWEDISH NAVAL SERIES.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia, N. 48° 02′, W. 12° 10′	.....	.....	29.79	756.6	54.7	12.6	76	SSE	.....	.....	4	.....	3	.....	.....	.....	.....	.....	D. clouds	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.37	720.5	29.78	756.5	56.8	13.8	58	NNE	.....	.....	2	.....	8	.....	.....	0	0	Covered	The Observatory.
Zurich	28.17	715.4	29.78	756.3	62.1	16.7	65	E	.....	.....	2	.....	1	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —4 4 mm.; Thermometer, —2 2 Cent Relative Humidity, +1 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.85	758.2	66.6	19.2	67	SW	7	3.0	.....	.....	8	.....	SW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.91	759.6	72.0	22.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.69	759.2	71.8	22.1	58	W	.....	.....	2	.....	7ks	.....	SE	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	46.0	7.8	.....	SW	1	0.4	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.66	753.4	29.73	755.1	49.8	9.9	79	N	6	2.7	.....	.....	10k	.....	.....	0.15	3.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.66	753.4	29.70	754.4	54.9	12.7	83	SE	8	3.6	.....	.....	6s	.....	.....	0	0	Fair	H. J. Cundall, C. E
Cornwall, Ontario	29.69	754.1	29.88	758.9	54.2	12.3	70	NW	.....	.....	1	0	1s	.....	.....	0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.61	752.1	29.78	756.4	43.0	6.1	.....	NE	.....	.....	1	.....	10ks	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.78	756.4	29.80	756.9	46.5	8.1	61	SW	2	0.9	.....	.....	10n	.....	.....	Inap.	Inap.	Threatening	J. McWilliams.
Fredericton, N. B.	29.66	753.4	29.72	754.9	52.9	11.6	75	NW	6	2.7	.....	.....	10n	.....	.....	0.110	2.79	Light rain	Prof. Harrison.
Fort Garry, Manitoba	29.21	741.9	30.02	762.5	58.7	14.8	50	SE	20	8.9	.....	5k	5n	SW	.....	0	0	Threatening	James Stewart.
Granton, Ontario	29.10	739.1	30.21	767.3	51.0	10.6	86	W	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.62	752.3	29.75	755.6	49.0	9.4	98	SE	4	1.8	.....	.....	Fog	.....	.....	0.370	9.40	Foggy	A. Allison.
Hamilton, Ontario	29.76	755.9	30.14	765.5	56.5	13.6	66	NW	.....	.....	1	2ck	0	NW	.....	0	0	Fair	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.65	753.1	29.99	761.7	54.9	12.7	55	W	17	7.6	.....	0	0	.....	.....	0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.72	754.9	29.76	755.9	41.2	5.1	86	SW	2	0.9	.....	5k	0	SW	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.68	753.9	29.88	758.9	52.1	11.2	60	W	22	9.8	.....	.....	10ks	.....	.....	0.18	4.6	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	30.04	763.0	30.07	763.8	33.0	0.6	92	NW	.....	.....	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	J. R. Nason.
Norwood, Ontario	29.34	745.2	30.03	762.7	55.8	13.2	48	NW	10	4.5	.....	3ck	0	.....	.....	.....	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.41	747.0	30.11	764.8	50.0	10.0	68	W	15	6.7	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.32	744.7	30.06	763.5	56.7	13.7	51	W	.....	.....	2	0	0	.....	.....	.....	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.50	749.3	30.10	766.8	56.1	13.4	87	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.57	751.1	30.21	767.3	57.9	14.4	90	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.49	749.0	29.81	757.2	52.0	11.1	66	W	.....	.....	3	0	5s	.....	.....	0.03	0.8	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.49	749.0	29.95	760.7	50.1	10.1	62	NW	6	2.7	.....	2c	0	NW	.....	0.01	0.3	Fair	W. H. McIntyre.
St. John, N. B.	29.58	751.3	29.74	755.4	46.0	7.8	92	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.49	749.0	30.21	767.3	49.0	9.4	71	SW	4	1.8	.....	5ck	0	W	.....	0	0	Fair	K. Stewart.
Stratford, Ontario	28.90	734.0	30.18	766.6	52.1	11.2	72	W	10	4.5	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.75	755.6	29.79	756.7	62.3	16.8	50	SE	5	2.2	.....	2ck	0	.....	.....	0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.76	755.9	30.14	765.5	55.7	13.2	49	W	21	9.4	.....	4cs	0	W	.....	0	0	Fair	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.11	739.4	30.17	766.3	57.4	14.1	59	SW	13	5.8	.....	1cs	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.68	753.9	29.74	755.4	51.1	10.6	86	NW	2	0.9	.....	6k	2s	SW	.....	0.04	1.0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.64	752.8	29.90	759.4	42	5.6	91	NE	.....	.....	.....	.....	Fog	.....	.....	0.40	10.2	Foggy	John Delany.
St. Pierre, N. F., Pilotial Maritime.	.....	.....	30..2	765.0	43.9	6.6	.....	SE	.....	.....	1	.....	.....	.....	.....	0	0	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 f., for 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.94	760.5	30.02	762.5	61	16.1	45	W	12	5.4		0	0			0	0	Clear.	
Alpena, Michigan	29.58	751.3	30.24	768.1	49	9.4	64	NW	10	4.5		8c	0	NW		0	0	Fair.	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.95	735.3	30.06	763.5	68	20.0	79	NE	5	2.2		5c	0	Calm		0	0	Fair.	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	63	17.2	57	N	11	4.9		5c	0	Calm		0	0	Fair.	
Augusta, Georgia	29.94	760.5	30.14	765.5	72	22.2	85	Calm	0	0		5cs	0	W		0	0	Fair.	
Baltimore, Maryland	30.09	764.3	30.14	765.5	66	18.9	41	N	6	2.7		8cs	Haze	Calm	Calm	0	0	Fair.	
Barnegat, New Jersey	30.02	762.5	30.04	763.0	64	17.8	39	NW	15	6.7		8cs	0	W		0	0	Fair.	
Bismarck, Dakota	27.95	709.9	29.81	757.2	65	18.3	73	SE	12	5.4		0	0			0	0	Clear.	
Boerne, Texas	28.57	725.7	29.84	757.9	69	20.6	90	SW	2	0.9			10s		SW	0	0	Cloudy.	
Boise City, Idaho	26.90	683.2	29.86	758.4	44	6.7	88	NW	8	3.6			10s		W	0.19	4.8	Cloudy.	
Boston, Massachusetts	29.75	755.6	29.90	759.4	62	16.7	41	NW	16	7.2		Haze	Haze	Calm	Calm	Inap.	Inap.	Hazy.	
Brackettville, Texas	28.84	732.5	29.86	758.4	71	21.7	85	E	10	4.5			10ks		E	0	0	Cloudy.	
Breckenridge, Minnesota	28.93	734.8	29.90	759.4	57	13.9	87	SE	30	13.4			10n		S	Inap	Inap.	Light rain.	
Brownsville, Texas	29.89	759.2	29.94	760.5	79	26.1	91	SE	1	0.4		0	0			0	0	Clear.	
Buffalo, New York	29.45	748.0	30.15	765.8	52	11.1	66	SW	12	5.4		2c	0	NW		0	0	Clear.	
Burkes, Arizona					63	17.2	42	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.65	753.1	29.94	760.5	55	12.8	56	NW	9	4.0		2ck	0	NW		0	0	Fair.	
Cairo, Illinois	29.80	756.9	30.18	766.6	70	21.1	66	NE	5	2.2		0	0			0	0	Clear.	
Campo, California																			
Cape Hatteras, N. Carolina	30.07	763.8	30.08	764.0	73	22.8	85	E	9	4.0		5k	5s	SE	E	0.01	0.3	Cloudy.	
Cape Henry, Virginia	30.07	763.8	30.08	764.0	68	20.0	70	NE	15	6.7		5k	2s	NE	Calm	0.02	0.5	Fair	
Cape Lookout, N. Carolina	30.09	764.3	30.10	764.5	71	21.7	90	NW	12	5.4		10k	0	W		0	0	Cloudy.	
Cape May, New Jersey	30.05	763.3	30.08	764.0	64	17.8	57	N	20	8.9		0	0			0.03	0.8	Clear.	
Castroville, Texas	29.23	742.4	29.90	759.4	75	23.9	77	Calm	0	0			10s		SE	0	0	Cloudy.	
Cedar Keys, Florida	29.98	761.5	30.01	762.2	73	22.8	85	NE	9	4.0		2cs	1ks	Calm	Calm	0	0	Fair.	
Charleston, South Carolina	30.02	762.5	30.07	763.8	76	24.4	86	SE	4	1.8		0	8ks		E	0	0	Cloudy.	
Charlotte, North Carolina	29.28	743.7	30.06	763.5	72	22.2	71	N	2	0.9		0	Sm'e		Calm	0.02	0.5	Clear.	
Chattanooga, Tennessee	29.33	745.0	30.10	764.5	70	21.1	80	N	3	1.3		5cs	Sm'e	Calm	Calm	0.27	6.9	Fair.	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	46	7.8	40	NW	4	1.8		0	0			0	0	Clear.	
Chicago, Illinois	29.56	750.8	30.25	768.3	57	13.9	69	NE	4	1.8		0	0			0	0	Clear.	
Chincoteague, Virginia	29.96	761.0	29.99	761.7	67	19.4	72	NE	21	9.4		0	0			Inap	Inap.	Clear.	
Cincinnati, Ohio	29.60	751.8	30.25	768.3	62	16.7	58	E	4	1.8		0	Sm'e		Calm	0	0	Clear.	
Cleveland, Ohio	29.51	749.5	30.23	767.8	60	15.6	71	S	2	0.9		0	0			0	0	Clear.	
Coleman City, Texas	28.20	716.3	29.80	756.9	70	21.1	85	SE	4	1.8		0	0			0	0	Clear.	
Columbus, Ohio	29.41	747.0	30.24	768.1	59	15.0	65	N	4	1.8		0	0			0	0	Clear.	
Concho, Texas	28.10	713.7	29.72	754.9	66	18.9	89	E	5	2.2		5k	0	SE		0	0	Fair.	
Corsicana, Texas	29.60	751.8	30.06	763.5	70	21.1	90	SE	2	0.9		0	0			0	0	Clear.	
Davenport, Iowa	29.57	751.1	30.20	767.1	59	15.0	65	E	10	4.5		0	0			0	0	Clear	
Dayton, Washington T'y					41	5.0	83	SW			1		10s		Calm	0.25	6.3	Cloudy.	
Deadwood, Dakota	25.20	640.1			52	11.1	41	Calm	0	0		5c	0	S		0	0	Fair.	
Decatur, Texas	28.90	734.0	30.02	762.5	73	22.8	67	SE	8	3.6		2ck	0	SW		0	0	Fair.	
Delaware Breakwater, Del.	30.08	764.0	30.10	764.5	66	18.9	64	N	17	7.6		5cs	Haze	Calm		0	0	Fair.	
Denison, Texas	29.27	743.4	30.03	762.7	73	22.8	81	SE	3	1.3		0	0			0	0	Clear.	
Denver, Colorado	24.64	625.8	29.86	758.4	56	13.3	24	SE	4	1.8		0	0			0	0	Clear.	
Des Moines, Iowa	29.22	742.2	30.08	764.0	63	17.2	62	S	6	2.7		8c	0	W		0	0	Fair.	
Detroit, Michigan	29.58	751.3	30.25	768.3	54	12.2	74	NW	2	0.9		5ck	0	W		0	0	Fair.	
Dodge City, Kansas	27.38	695.4	29.59	751.6	62	16.7	77	SE	6	2.7		5ck	5s	S	Calm	0	0	Cloudy.	
Dubuque, Iowa	29.50	749.2	30.20	767.1	59	15.0	54	SE		0.9		8c	0	Calm		0	0	Fair.	
Duluth, Minnesota	29.56	750.8	30.24	768.1	52	11.1	73	NE	2	0.9		1cs	0	Calm		0	0	Clear.	
Eagle Pass, Texas	29.21	741.9	29.91	759.7	75	23.9	81	SE	8	3.6		0	0			0	0	Clear.	
Eastport, Maine	29.64	752.8	29.71	754.6	60	15.6	60	NW	11	4.9		2ck	0	W		Inap.	Inap.	Clear.	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.50	749.3	30.21	767.3	58	14.4	49	SW	2	0.9		0	0			0	0	Clear.	
Escanaba, Michigan	29.64	752.8	30.30	769.6	51	10.6	65	N	7	3.1			10s		NW	0	0	Cloudy.	
Florence, Arizona	28.35	720.1	29.95	760.7	63	17.2	63	Calm	0	0		0	0			0	0	Clear.	
Fort Apache, New Mexico	24.95	633.7	30.40	772.1	41	5.0	41	NE	2	0.9		0	0			0	0	Clear.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.61	701.3	29.35	745.5	56	13.3	74	SE	16	7.2		0	0			0	0	Clear.	
Fort Custer, Montana	26.49	672.8			56	13.3	39	SW	8	3.6		0	0			0	0	Clear.	
Fort Davis, Texas	25.18	639.6	30.14	765.5	64	17.8	68	SW	4	1.8		2cs	0	SW		0	0	Fair.	
Fort Elliot, Texas	26.92	683.8	29.07	738.3	64	17.8	58	SE	10	4.5		5ck	0	SE		0	0	Fair.	
Fort Gibson, Indian Ter.	29.52	749.8	30.04	763.0	74	23.3	76	Calm	0	0			0			0	0	Clear.	
Fort Grant, Arizona	25.13	638.3	29.93	760.2	58	14.4	23	N	8	3.6		0	0			0	0	Clear.	
Fort Griffin, Texas	28.75	730.2	29.99	761.7	65	18.3	63	Calm	0	0		0	0			0	0	Clear.	
Fort Keogh, Montana	26.94	684.3			50	10.0	64	E	1	0.4		0	0			0	0	Clear.	
Fort McKavett, Texas	27.75	704.8	29.59	751.6	67	19.4	79	E	8	3.6		0	1ks		S	0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.80	731.5	29.86	758.4	74	23.3	72	SE	13	5.8		0	0			0	0	Clear.	
Fort Stevenson, Dakota	27.89	708.4			64	17.8	78	SE	5	2.2		0	0			0	0	Clear.	
Fort Verde, Arizona					51	10.6	59	SW			2	0	Haze		Calm	0	0	Clear.	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	78	25.6	86	NW	4	1.8		5k	0	E		0	0	Fair.	
Grand Haven, Michigan	29.64	752.8	30.29	769.4	56	13.3	69	SW	11	4.9		5c	0	Calm		0	0	Fair.	
Helena, Montana					47	8.3	85	SW	5	2.2			10s		Calm	0.05	1.3	Cloudy.	
Henrietta, Texas																			
Indianapolis, Indiana	29.45	748.0	30.22	767.6	61	16.1	55	N	5	2.2		0	0			0	0	Clear.	
Indianola, Texas	30.00	762.0	30.03	762.7	77	25.0	86	E	8	3.6		0	0			0	0	Clear.	
Jacksboro, Texas	28.70	729.0	29.98	761.5	80	26.7	51	S	3	1.3		0	0			0	0	Clear.	
Jacksonville, Florida	29.99	761.7	30.01	762.2	73	22.8	85	E	6	2.7			10s		E	0.65	16.5	Cloudy.	
Keokuk, Iowa	29.52	749.8	30.12	765.0	62	16.7	56	SE	14	6.3		5cs	0	Calm		0	0	Fair.	
Key West, Florida	29.93	760.2	29.96	761.0	76	24.4	86	E	3	1.3			10s		SW	0.05	1.3	Cloudy.	
Kittyhawk, North Carolina	30.07	763.8	30.10	764.5	67	19.4	74	NW	17	7.6		2c	0	Calm		0	0	Clear.	
Knoxville, Tennessee	29.16	740.7	30.14	765.5	67	19.4	79	NE	4	1.8		5cs	2s	SW	Calm	0.49	12.4	Fair.	
La Crosse, Wisconsin	29.47	748.5	30.20	767.1	59	15.0	70	SE	1	0.4			10ks		SE	0	0	Cloudy.	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	50	10.0	32	Calm	0	0		0	0			0	0	Clear.	
Laredo, Texas																			
Leavenworth, Kansas	29.19	741.4	30.00	762.0	68	20.0	70	SE	7	3.1		0	0			0	0	Clear.	
Lewiston, Idaho																			
Little Rock, Arkansas	29.76	755.9	30.07	763.8	74	23.3	95	N	2	0.9		0	0			0	0	Clear.	
Los Angeles, California	29.62	752.3	29.96	761.0	52	11.1	79	SW	6	2.7		0	4s		SW	0.04	1.0	Fair.	
Louisville, Kentucky	29.63	752.6	30.19	766.8	60	15.6	65	N	10	4.5		0	0			0	0	Clear.	
Lynchburg, Virginia	29.49	749.0	30.15	765.8	72	22.2	46	E	5	2.2		8c;ck	0	Calm		0.30	7.6	Fair.	
Madison, Wisconsin	29.23	742.4	30.21	767.3	58	14.4	70	S	4	1.8		8cs	0	W		0	0	Fair.	
Marquette, Michigan	29.59	751.6	30.30	769.6	52	11.1	66	NW	1	0.4			10s		NW	0	0	Cloudy.	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.38	720.8	30.09	764.3	68	20.0	90	SW	5	2.2			10s		S	0	0	Cloudy	
Memphis Tennessee	29.73	755.1	30.05	763.3	74	23.3	81	NE	5	2.2		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.53	750.0	30.26	768.6	57	13.9	52	W	5	2.2		3ck;k	0	W		0	0	Fair	
Mobile, Alabama	29.99	761.7	30.03	762.7	72	22.2	85	NE	3	1.3		0	0			0	0	Clear	
Montgomery, Alabama	29.87	758.7	30.10	764.5	71	21.7	85	NE	4	1.8		5c	0	E		0	0	Fair	
Morgantown, West Virginia	29.23	742.4	30.21	767.3	60	15.6	65	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	28.56	598.4	29.92	760.0	27	— 2.8	100	NW	26	11.6			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.62	752.3	30.13	765.3	72	22.8	67	N	4	1.8		0	0			0	0	Clear	
New Haven, Connecticut	29.87	758.7	29.99	761.7	65	18.3	49	NW	9	4.0		0	0			0.04	1.0	Clear	
New London, Connecticut	29.92	760.0	29.97	761.2	65	18.3	40	NW	10	4.5		1cs	0	W		0	0	Clear	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	75	23.9	76	NE	8	3.6		0	0			0	0	Clear	
Newport, Rhode Island	29.87	758.7	29.92	760.0	61.5	16.4	48	W	12	5.4		0	0			0	0	Clear	
New River, North Carolina					71	21.7	90	NW			1		10ks		NW			Cloudy	
New York, New York	29.86	758.4	30.04	763.0	63	17.2	42	NW	12	5.4		0	Haze		Calm	Inap	Inap	Clear	
Norfolk, Virginia	30.04	763.0	30.10	764.5	70	21.1	57	NE	13	5.8		2ck	8s;hz	NE	Calm	0.01	0.3	Cloudy	
North Platte, Nebraska	26.92	683.8	29.33	745.0	72	22.2	34	S	40	17.9		8c	0	W		0	0	Fair	
Olympia, Washington Ter	29.90	759.4	29.94	760.5	40.0	4.4	91	S	4	1.8			10s		S	0.25	6.3	Cloudy	
Omaha, Nebraska	28.84	732.5	29.90	759.4	66	18.9	69	SE	12	5.4			10s		Calm	0	0	Cloudy	
Oswego, New York	29.77	756.4	30.10	764.5	49	9.4	64	W	12	5.4		0	0			0	0	Clear	
Pembina, Dakota	29.09	738.9	29.90	759.4	54	12.2	74	S	24	10.7			10s		S	0.12	3.0	Threatening	
Pensacola, Florida	30.00	762.0	30.04	763.0	73	22.8	81	F	9	4.0		9cs;k	0	calm;E		0.01	0.3	Fair	
Philadelphia, Pennsylvania	30.03	762.7	30.08	764 0	63	17.2	42	NW	20	8.9		8c	0	NW		0	0	Cloudy	
Phœnix, Arizona	28.67	728.2	30.43	772.9	62	16.7	51	NE	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.02	762.5	24	— 4.4	48	SW	32	14.3		2cs	0	Calm		0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.77	603.8	29.54	750.3	45	7.2	24	S	9	4.0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.40	746.7	30.21	767.3	54	12.2	74	NW	5	2.2		0	0			0	0	Clear	
Port Huron, Michigan	29.56	750.8	30.22	767.6	57	13.9	58	W	6	2.7		0	0			0	0	Clear	
Portland, Maine	29.78	756.4	29.83	757.7	61	16.1	45	NW	8	3.6		0	0			0	0	Clear	
Portland, Oregon	29.90	759.4	29.98	761.5	35	1.7	100	S	3	1.3			Fog		Calm	0.34	8.6	Dense fog	
Portsmouth, North Carolina					73	22.8	85	W	12	5.4		10k	0	W		0	0	Cloudy	
Prescott, Arizona	24.64	625.8	30.00	762.0	50	10.0	39	S	5	2.2		0	0			0	0	Clear	
Fanta Rassa, Florida	29.94	760.5	29.96	761.0	72	22.2	90	NE	8	3.6			10s		SE	0.03	0.8	Threatening	
Red Bluff, California	29.66	753.4	30.03	762.7	46.0	7.8	84	S	13	5.8			10s		S	0	0	Cloudy	
Rio Grande City, Texas	29.81	757.2	30.02	762.5	74	23.3	86	SE	6	2.7		0	8s		SE	0	0	Fair	
Rochester, New York	29.49	749.0	30.10	764.5	56	13.3	51	W	14	6.3		1k	0	W		0	0	Clear	
Roseburg, Oregon	29.38	746.2	29.96	761.0	38.5	3.6	90	Calm	0	0		5c;k	0	Calm;S		Inap.	Inap.	Fair	
Sacramento, California	29.99	761.7	30.07	763.8	41	5.0	91	SE	6	2.7		0	5s		Calm	0.38	9.7	Fair	
St. Louis, Missouri	29.60	751.8	30.17	766.3	64	17.8	63	E	8	3.6		0	0			0	0	Clear	
St. Paul, Minnesota	29.31	744.5	30.12	765.0	60	15.6	55	SE	8	3.6			10ks		SE	0	0	Cloudy	
Salt Lake City, Utah	25.34	643.6	29.67	753.6	56	13.3	24	E	4	1.8		1c	0	W		0	0	Clear	
San Antonio, Texas	29.44	747.8	30.12	765.0	73	22.8	85	SE	2	0.9		0	5ks		SE	0	0	Fair	
San Diego, California	29.96	761.0	30.03	762.7	58	13.3	81	NW	9	4.0			10s		NW	0.06	1.5	Cloudy	
Sandusky, Ohio	29.56	750.8	30.23	767.8	60	15.6	77	NW	8	3.6		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.02	762.5	30.05	763.3	65	18.3	54	NW	10	4.5		5c	0	NW		0.06	1.5	Fair	
San Francisco, California	30.02	762.5	30.09	764.3	47	8.3	85	SW	1	0.4		0	4ks		W	0.33	8.4	Fair	
Santa Fé, New Mexico	29.26	590.8	29.80	756.9	55	12.8	50	SE	14	6.3		1c	1ks;hz	Calm	Calm	0	0	Fair	
Savannah, Georgia	30.00	762.0	30.09	764.3	72	22.2	95	E	5	2.2			10s		SE	0.14	3.6	Cloudy	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	77	25.0	77	E	2	0.9		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.09	764.3	30.13	765.3	72	22.2	90	NW	5	2.2		5k;hz	Haze	Calm	Calm	0	0	Hazy	
Socorro, New Mexico	25.33	643.4	29.39	746.5	50	10.0	26	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.56	750.8	30.23	767.8	60	15.6	60	E	8	3.6		1c	2s	W	W	0	0	Fair	
Springfield, Massachusetts	29.85	758.2	29.98	761.5	63	17.2	47	W	10	4.5		0	0			0	0	Clear	
Stockton, Texas	26.90	683.2	29.90	759.4	68	20.0	90	SE	36	16.1		5cs	5s	W	SE	0	0	Cloudy	
Thatcher's Island, Mass	29.81	757.2	29.86	758.4	59	15.0	83	W	14	6.3		0	0			0	0	Clear	
Toledo, Ohio	29.54	750.3	30.22	767.6	59	15.0	70	W	9	4.0		1c	0	W		0	0	Clear	
Tucson, Arizona	27.48	698.0	29.98	761.5	68	20.0	34	S	5	2.2		0	0			0	0	Clear	
Umatilla, Oregon	29.58	751.3	30.07	763.8	42	5.6	83	W	9	4.0		10cs	0	W		0.01	0.3	Cloudy	
Uvalde, Texas	29.04	737.6	29.84	757.9	73	22.8	85	E	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.82	757.4	30.07	763.8	77	25.0	69	Calm	0	0		0	0			0	0	Clear	
Virginia City, Montana	23.99	609.3	29.47	748.5	47	8.3	34	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.70	754.4	30.08	764.0	43	6.1	83	NW	4	1.8			10ks		Calm	0.28	7.1	Cloudy	
Washington, D. C	30.05	763.3	30.16	766.1	63	17.2	47	NW	8	3.6		1cs	Haze	Calm	Calm	1.40	35.6	Clear	
Wickenburg, Arizona					60	15.6	44	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.04	763.0	30.12	765.0	70	21.1	90	NW	2	0.9			10s		Calm	0	0	Cloudy	
Winnemucca, Nevada	25.42	645.7	29.78	756.4	31	— 0.6	89	SW	6	2.7			10n		Calm	0.01	0.3	Light snow	
Wood's Holl, Massachusetts	29.85	758.2	29.89	759.2	59	15.0	65	NW	12	5.4		2ck	0	W		0.02	0.5	Fair	
Yankton, Dakota	28.63	727.2	29.86	758.4	68	20.0	65	SE	10	4.5		0	0			0	0	Clear	
Yuma, Arizona	29.67	753.6	29.82	757.4	64	17.8	48	W	14	6.3		0	Haze		Calm	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.00	558.8			64.5	18.1	56	Calm	0	0		2ck	0			0.17	4.3	Fair	Thomas Herran.
Havana, Cuba, W. I	29.93	760.2	29.98	761.5	75	23.9	85	Calm	0	0		8cs	0	SW		1.30	33.0	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	30.01	762 2	30.02	762.5	79	26.1	79	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	79	26.1	74	E	12	5.4			10	SE	E	0	0	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.01	762 2	30.01	762.2	80	26.7	82	E			2	3c	5k	E		0.600	15.24	Fair	C. J. Hering.
Puerto Perrio, U.S.Col'bia‖	29.41	747.0	29.97	761.2	76	24.4	94	Calm			0		10s			0.02	0.5		Francesco J. Cisneros.
Rivas, Nicaragua					75.2	24		S				8	6	NE	S	0.35	9.	Covered	Carl Flint.
Santiago de Cuba, W. I	29.95	760 7	29.97	761.2	78	25.6	82	Calm	0	0		8ck	4s	SE	S	0.530	13.46	H'y shower.	Robert Mason
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.34	770.6	30.39	771.9	25.5	— 3.8	94	Calm	0	0		5k	4s	S	S	0	0	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,100 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.06	763.5	71	21.7	90	NE	11	4.9			8		E					Fair	
§ Navy Yard, Portsmouth, N. H.	29.85	758.2	60	15.6	71	NW	11	4.9			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.90	759.4	62.5	16.9	77	SE			3		2k; h'ze		W	0	0			Fair	
§ Adams, Punta Arenas, Costa Rica	29.90	759.4	78	25.6	86	N			2		8		N					Cloudy	
§ Alaska, Callao, Peru*	29.95	760.7	63	17.2	89	Calm			0		10					Long	SW	Cloudy	
§ Alert, N 31° 40′, E. 140° 13′	29.96	761.0	70	21.1	70	SW			3		2		Calm	0	0	Long	NE	Clear	
Alliance, Norfolk, Va.	30.08	764.0	71	21.7	71	NNE			2		8		NE	Light	Light			Cloudy	
Colorado, New York, N. Y.	29.94	760.5	62	16.7	66	NW	14	6.3			2			0	0			Clear	
§ Constitution, Hampton Roads, Va.	30.09	764.3	68	20.0	90	NNE	10	4.5			5		NW					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.08	764.0	70	21.1	90	NE	15.6	7.0			5		NE	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.04	763.0	47	8.3	100	SW	1.2	0.5			5		SW	0.178	4.52			Fair	
§ Jamestown, Sitka, Alaska*	29.71	754.6	42	5.6	91	Calm			0		8							Cloudy	
Kearsarge, Boca del Toro, Chiriqui	29.93	760.2	80	26.7	81	NW			1		5		NW			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	29.72	754.9	62	16.7	94	NE			5		10			Blank	Blank	Mod'ate	NE	Overcast	
§ Michigan, Erie, Pa.	30.16	766.1	58	14.4	64	SW			2									Clear	
§ Monocacy, Shanghai, China	29.95	760.7	64	17.8	83	N			1		10							Cloudy	
§ New Hampshire, Port Royal, S. C.	30.03	762.7	73	22.8	95	NE	9	4.0			10		SE	0.08	2.0			Cloudy	
Nipsic, Villafranca, France	29.75	755.6	61	16.1	66	N			2		10							Raining	
§ Onward, Ancon Bay, Peru†	29.97	761.2	65	18.3	89	Calm			0		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.94	760.5	63	17.2	89	NNE			2		8							Cloudy	
§ Passaic, Washington, D. C.	30.08	764.0	65	18.3	78	NW			1		0			0.14	3.6			Clear	
§ Pensacola, San Francisco, Cal.	30.01	762.2	47	8.3	85	SW			1		0					Smooth		Hazy	
§ Powhatan, Annapolis, Md.	30.13	765.3	65	18.3	58	N			2		8		N					Hazy	
§ Quinnebaug, Gibraltar, Mediterranean	30.03	762.7	62	16.7	77	WSW			2		8		W			Mod'ate chop.		Fair	
§ Richmond, Shanghai, China	29.97	761.2	65	18.3	84	NE			2		10		NE	0.05	1.3			Cloudy	
§ Rio Bravo, Brownsville, Texas†	30.17	766.3	71	21.7	100	ENE	1	0.4			5		Calm	0	0			Fair	
§ Saratoga, N. 39 29′, W. 24° 20′	29.39	746.5	56	13.3	94	Calm			0		10		Calm	Heavy	Heavy	Smoot	E	Squally	
§ Shenandoah, Montevideo, Uruguay	29.67	753.6	61	16.1	94	NNE			3		10					Smooth		Cloudy	
§ St. Louis, League Island, Pa.	30.09	764.3	63	17.2	57	NNW	9	4.0			5?		NNW	0	0			Clear?	
Swatara, Singapore, India†	29.77	756.1	84	28.9	91	Calm			0		1		Calm			Smooth		Clear	
§ Tennessee, Aspinwall, Panama	29.90	759.4	81	27.2	91	S	3	1.3			5?		Calm	0	0	Smooth		Cloudy?	
Ticonderoga, Yokohama, Japan	29.90	759.4	66	18.9	79	S			2		0					Smooth		Clear	
§ Trenton, Sarl Siglar, Archipelago	29.86	758.4	69	20.6	61	SW			2		2			0	0			Fair	
§ Tuscarora, Mare Island, Cal.	30.04	763.0	48	8.9	85	W			2		5		S;W	0.1	3.	Smooth		Fair	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.01	762.2	63	17.2	47	NW			5		0							Clear	
§ Wabash, Boston, Mass.	29.85	758.2	61	16.1	45	NW	10	4.5			0			0	0			Clear	
§ Wachusett, S. 37° 40′, W. 55° 59′	29.70	754.4	61	16.1	100	N			2		Fog			0	0	Long	NNE	Foggy	
Wyoming, Constantinople, Turkey	29.86	758.4	61	16.1	82	SW			1		5		SW			Smooth	SW	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of vessels and captains.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent Liverpool, Eng	30.13	765.3	57	13.3	87	NE			4		5		E	Light	Light			Fair	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 51° 32', W. 10° 44' *†	29.98	761.5	55	12.8	88	E			4		4		E	2 h'rs	2 h'rs	Rough	E	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 27° 10', W. 110° 56' †	29.80	756.9	74	23.3	90	NNW			2		8		NW	0	0	Smooth	NW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 46° 42', W. 36° 51'	29.94	760.5	61	16.1	82	NE			4		1		NE	0	0	3	NE	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strasburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of vessels and captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.91	759.7	84	28.9	91	S			1		2		SW			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal †	30.07	763.8	53	11.7		SW			3		8		S	20 minutes		Smooth		Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal †	30.09	764.3	50	10.0		S			1		10		W					Cloudy	
§ S. S. Idaho, E. Alexander																			
§ S. S. Orizaba																			
§ S. S. State of California, G. Debney, Portland, Oregon †	29.93	760.2	42	5.6		Calm			0		2		Calm					Clear	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 23° 08', W. 110° 32'....†	29.90	759.4	64	17.8	100	NW			3		2		N			Light	NW	Clear	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury. N. 17° 57', W. 103 18'....†	29.90	759.4	81	27.2	87	NE			2		0					Mod'ate	SW	Clear.	
§ S. S. City of New York, W. B. Cobb, N. 35° 03', W. 130° 10'....†	30.13	765.3	54	12.2	93	W			4		5		NW			Heavy	WSW	Rain-squalls	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 26° 12' W. 113° 55'....†	30.02	762.5	61	16.1		NW			3		8		NW	0	0	Large	NW	Hazy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry.... N 36° 45', W. 161° 12'.....†	30.26	768.6	60	15.6	82	S			5		2		SSW			Mod'ate	SW	Fair	
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	30.04	763.0	62	16.7		SE			6		8		SE	0	0	Smooth		Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury Yokohama, Japan.....†	30.13	765.3	64	17.8	78	SE			1		0			0	0			Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 7° 20', W. 82° 20'.....†	29.87	758.7	82	27.8	100	WSW			3		10		SW	0.08	2.0	Mod'ate	S	Cloudy	
§ S. S. Dakota, D. E. Griffiths N. 44° 00', W. 124° 18'....†	29.93	760.2	48	8.9	75	NNE			2		2		S	0	0		W	Clear	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 35° 16', W. 121° 30'....†	30.11	764.8	52	11.1	??	E			1		2k		N	0	0	Heavy	WNW	Clear	
§ S. S. Idaho, N. 48° 26', W. 124° 40'....†	30.09	764.3				SW			1		2		SW	0	0	Mod'ate	W	Fair	
§ S. S. Zealandia, R. C. Ghest, N. 25° 57', W. 149° 32'.....	30.30	769.6				E			4				E			Smooth	E	Squally	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 33' W. 63° 15'....†	29.75	755.6	67	19.4		WSW			3		8		W	0	0	Smooth	WSW	Showery	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 46° 06', W. 37 12'.....†	29.85	758.2	55	12.8		N			3		2		E	0	0	Mod'ate	E	D. clouds	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell. St. George's Channel *†	30.02	762.5	54	12.2		ESE			3		5		E	3 h'rs	3 h'rs	Smooth		Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr. Addie Fuller, J. Jorgensen, N. 39° 38', W. 73° 56'.....	30.02	762.5	61	16.1	61	NW	7	3.1		2c				0	0	Short		Clear	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 34° 00', W. 64° 59'.....†	30.15	765.8	72	22.2		SW			3		2		SW	0	0	Smooth	S	Fair	J. Jorgensen L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 28° 00', E. 37° 08'.....†	30.35	770.9	70	21.1		SE			2		2		SE	0	0	Rough	S	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin, Arroyo, Porto Rico.....†	30.15	765.8	78	25.6		E			5		2		E	Showers.		Smooth		Clearing	
Hippolyta, N. 50° 20', W 10° 20'.....*	29.68	753.9	58	14.4		ESE			6		5		SE	Slight.		Mod'ate	E	Fair	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

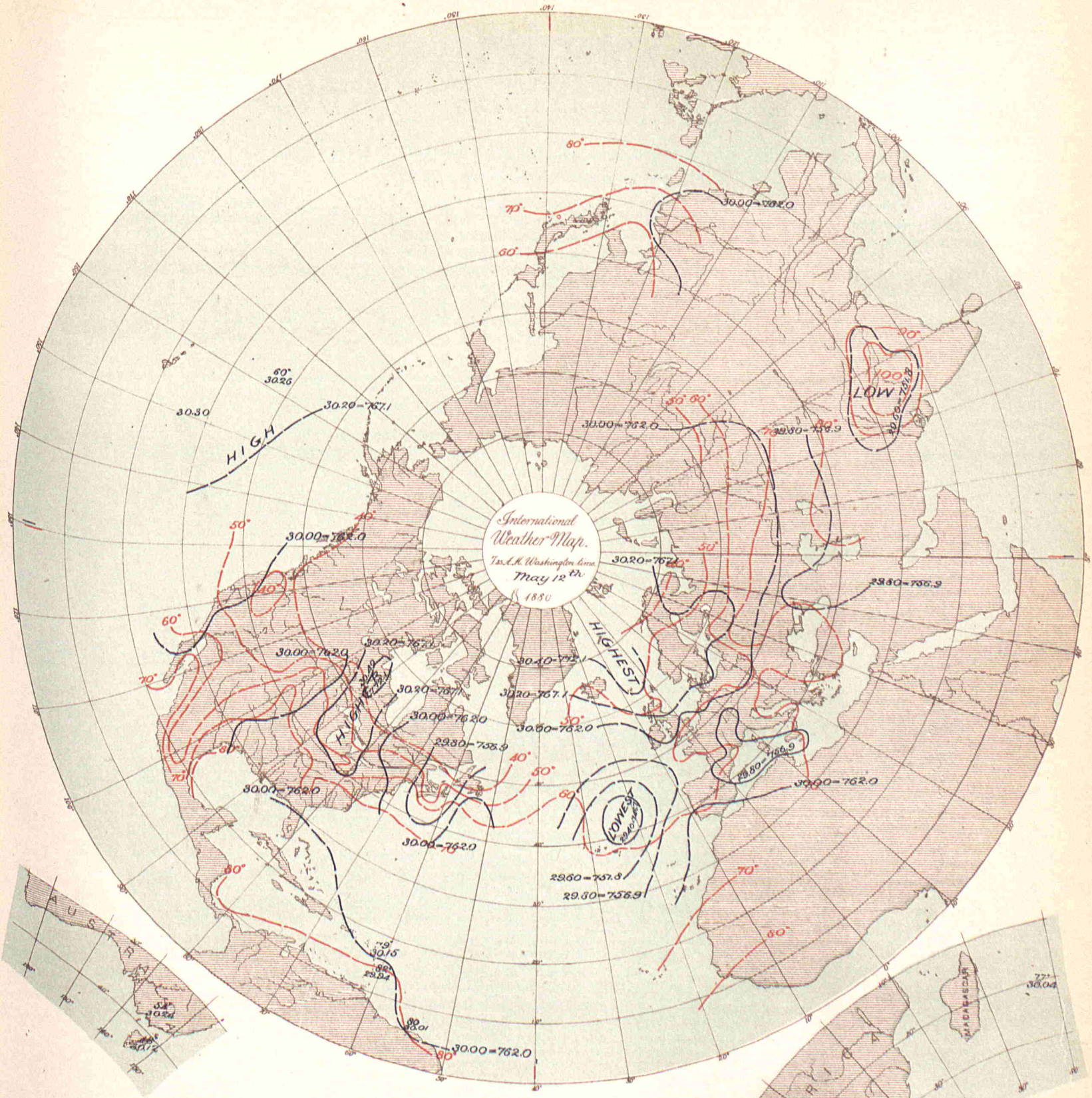
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 13, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.12	765.1				SW			1		1			0	0	Very fair	Dr. Ollive.
Nemours			30.01	762.2	68.7	20.4	74	E			2		5			0	0	Cloudy	Metge.
Algiers			30.03	762.7	68.0	20.0	60	WNW			3		0			0	0	Clear	Nicolas.
La Calle			30.01	762.2	65.7	18.7	69	NNW			5		6			0	0	Cloudy	Fonfrède.
Tunis			29.96	761.0															Jacques.
Stax			30.06	763.5															Gau.
Saida			30.01	762.2															Bernard.
Tebessa			30.03	762.7	65.7	18.7	15	N			6		3			0	0	Pretty fair	Watrin.
Geriville					82.0	27.8	30	N			3		0			0	0	Clear	Brugniaux.
Laghouat			30.04	763.0	77.7	25.4	24	NW			3		0			0	0	Clear.	Suart.
Biskra			30.00	761.9	79.2	26.2	42	NW			5		0			0	0	Clear.	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.32	744.7	29.85	758.3	64.4	18.0	60	W			2		8			0.177	4.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.19	741.4	29.94	760.4	66.6	19.2	68	NE	10.5	4.7			7			0.118	3.0		Dr. Wierzbicki.
Eperies	28.99	736.3	29.83	757.7	70.9	21.6	55	N			1		9ks			Inap.	Inap		Julius Mikolik.
Gratz	28.66	727.9	29.87	758.8	65.3	18.5	78	S			3		10			0	0		Andreas Rospini.
Hermannstadt	28.39	721.2	29.78	756.5	64.2	17.9	69	S			2		10			0.073	1.85	Raining	Prof. A. Gottschling
Kremsmünster, Observatory	28.59	726.1	29.90	759.4	63.3	17.4	76	NE			1		6			0	0		The Staff.
Lemberg	28.90	734.0	29.84	758.0	71.6	22.0	47	NE			2		4			0	0	Foggy	Dr. T. Stanecki.
Pola	29.71	754.7	29.82	757.5	69.1	20.6	66	W			1		0			0	0		I.R.Hydrographic Office.
Szathmar	29.37	746.1	29.82	757.4	75.2	24.0	39	E			2		10			0.039	1.0		Pet. Pancsics, S. J.
Szegedin	29.49	749.1	29.76	756.0	65.1	18.4	92	NE			4		10			0.122	3.10		Karl Stancel.
Trieste	29.74	755.3	29.84	757.9	70.9	21.6	70	Calm			0		3			0	0	Almost clear	P. Busin.
Vienna	29.20	741.6	29.93	760.1	63.7	17.6	72	N			2		6			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 11, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.‖
Aberdeen	30.29	769.4	30.39	771 9	48.4	9.1		E	9	4.0			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.29	769.4	30.31	769.9	52	11.1		ENE			3		8					Misty	G.Carrick.
Armagh, (Observatory)	30.06	763.5	30.29	769.4	51.0	10.6		ENE	10	4.5			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.22	767 6	57.8	14.3		E	10	4.5			9					Overcast	John Hartnup.
Bolton (Sharples)	29.68	753.9	30.19	766.8	55.9	13.3		E	19	8.5			8					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.85	758.2	30.25	768.3	53.7	12.1	55	NE			3		5			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	82	27.8		NE			2		7					Gloomy	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.08	764.0	30.17	766.3	62.9	17.2		NNE			1		7					Misty	H. Todd.
Cardington			30.17	766.3	60.0	15.6		NE			1		8					Overcast	John McLaren.
Chatham (School M. E.)	30.02	762.5	30.15	765.8	56.1	13.4		E			2		1					Blue sky	Sapper W. Gibson, R. E.
Donaghadee	30.27	768.8	30.31	769.9	52	11.1		SE			3		5					D. clouds	J. Mac Gowan.
Dover	30.08	764.0	30.11	764.8	55	12.8		NE			5		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.86	758.4	30.10	764.5	55.6	13.1		E			3		9					Foggy	The Staff.
Fort Napier, Natal	27.85	707.4	30.06	763.5	78.8	26.0		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.74	755.4	29.97	761.2	78	25.6		W			1		10					Drizzling	
Galway (Queen's College)			30.14	765.5	58.5	14 7		ENE			3		5					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.92	760.0	29.97	761.2	65.4	18.6		E			3		1					Blue sky	Sgt. W. Allen.
Glasgow, (Observatory)	30.11	764.8	30.32	770.1	51.9	11.1		NE			5		10k					Gloomy	D. G. Maclean.
Great Yarmouth	30.20	767.1	30.21	767.3	49	9.4		NE			4		3					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.96	761.0	30.13	765.3	65.9	18.8		ENE			3		4					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.84	757.9	30.06	763 5	54	12.2		NE			3		5					D. clouds	Dr. S.E Hoskins, F.R.S.
Helston	30.22	767.6	30.34	770.6	58	14.4		E			4	4c				Blank	Blank	Fine	M. P. Moyle.
Holyhead	30.17	766.3	30.21	767.3	57	13.9		ENE			4		1					Blue sky	John Tilston.
Jersey	29.78	756.4	30.07	763.8	58.2	14.6		ENE			4		6					Misty	J. Fisher.
Kew (Observatory)	30.11	764.8	30.15	765 8	62.0	16.7		NE	19	8.5			4					Misty	The Met'g'l Office.
Leicester (Museum)	29.95	760.7	30.20	767.1	57.6	14.2		NE			1		5					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.79	756.7	29.89	759 2	67	19.4		NW			3		1					Blue sky	A. King.
Nairn	30.27	768.8	30.37	771.4	54	12.2		ENE			3		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			29.88	758.9	74.0	23.3		SE			1		10n					Overcast	C. S. Duncombe.
Nottingham (Observatory)	30.05	763.3	30.24	768.1	56.3	13.5		NE			3	c	8k		ENE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.68	753.9	30.20	767.1	59.0	15.0		NNE			4		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.95	760.7	30.20	767.1	59	15.0		N			1		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	30.01	762.2	30.08	764 0	62.3	16.8		SE			5		7					D. clouds	John Merrifield.
*Roche's Point	30.07	763.8	30.17	766.3	53	11.7		E			6		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.97	761.2	30.14	765.5	59	15.0		E			2		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.41	772.4	52.4	11.3		NE	11	4.9			1					Blue sky	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.70	754.4	29.76	755.9	73.4	23.0		SW			1		3					D. clouds	Serg't W. H. Lyne.
Sheffield	29.99	761.7	30.27	768.8	57.1	13.9		NE			2		1			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.24	768.1	30.27	768.8	55.3	12.9	61	E			4		6			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.27	768.8	56.4	13.6		ENE	13	5.8			5					D. clouds	Rev. S. J. Perry.
Strathfield Turgiss	29.94	760.5	30.16	766.1	62.9	17.2		NE			4–5		1					Squally	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.08	764 0	30.10	764.5	68	20.0		E			4		2					D. clouds	W. Newcombe.
Valencia Observatory)	30.07	763.8	30.10	764.5	57.6	14.2		E	30	13.4			5					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.99	761.7	30.03	762.7	76.5	24.7	52	SW	2.3	1.0		0	4			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.05	763.3	47.0	8.3	80	S			3		6k			0.02	0.5		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.37	771.4	49.2	9.6		E			4		10k			0	0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.95	760.7	30.14	765.7	73.3	22.9	54	SE	19.5	8.7		0	4		SSE	0	0	Squally	C. Meldrum.
Melbourne (Observatory)	30.21	767.3	30.30	769.6	53.1	11.7	66	SSE	5	2.2			10			0	0	Gloomy	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.35	770.9	56	13.3		Calm			0	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.38	771.6				NE			2	4	2	N		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from	Weather	Observer
H. M. S. Alert				Capt. J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 48° 33′, W. 7° 01′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.15	664.2	29.87	758.7	70.7	21.5	87	SE			2	9cs				1.30	33.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.18	766.6	30.23	767.8	59.9	15.5	78	NNE			2		0						
Fanöe	30.21	767.4	30.23	767.9	59.2	15.1	69	NW			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.24	768.0	30.28	769.1	46.4	8.0	82	SW			4		2						
Thorshavn (Faröe)	30.39	771.8	30.42	772.7	50.4	10.2	68	SW			2		10						
Vestervig	30.18	766.6	30.28	769.0	56.5	13.6	72	NE			2		10						

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.49	749.0	30.04	763.0	71.6	22	43	NE			1		8		NE	0.012	0.3	Very cloudy	Collignon, Director.
Amiens, Normal School	29.91	759.7	30.02	762.5	72.3	22.4	96	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.74	755.4	30.03	762.8	66.9	19.4	31	ENE			3		7s			0	0		Klein, Commandant.
Avignon, Normal School	29.85	758 3	29.93	760.3	67.5	19.7	63	N			1					0.39	10.		Giraud, Director.
Bar-sur-Seine	29.41	746.9	29.95	760 6	70.7	21.5	46	E			1		5kn		E	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.75	755.6	30.01	762.3	66.9	19.4	43						2			0	0	Slightly cld'y	Frère Eugene Marie.
Besançon, Normal School	29.08	738.7	29.95	760.7	67.1	19.5	57	N			1		5		NE	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.80	756.8	29.99	761.5	63.5	17.5	57	NNE			1		8	NE	S	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.11	739.3	30.03	762.7	63.7	17.6	67	N			1		8cn	N	N	0	0	Very cloudy	Marlot, Director.
Bourges, Normal School	29.47	748.4	30.01	762.3	63.0	17.2	88	ENE			1		5k		NE	0.137	3.48	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.77	756.2	30.01	762.3	67.3	19.6	64	SE			1		4		SE	0	0		Ch. de Rermaree, Dir.
Caën, Normal School	29.90	759.4	29.97	761.3	60.8	16	84	NE			3		5			0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.58	751.2	29.98	761.5	66.2	19	63	WNW			2		2		WNW	0.012	0.3	Slightly cl'dy	September, Director.
Châlons-sur-Marne, N. Sch	29.68	753.8	29.99	761.7	74.5	23.6	53	ENE			1		2		NE	0	0	Slightly cl'dy	Jadot, Director
Chartres, Normal School	29.33	744.9	29.89	759.1	72.3	22.4	89	ENE			1		9			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.63	727.1	29.95	760.8	64.4	18.0	62	E			1		8		SE	0.039	1.0		Alluard, Director.
Commercy, Normal School	29.12	739.6	29.95	760.8	67.6	19.8	50	E			4		k		E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.88	732.2	29.97	761.2	68.5	17.5	59	N			2		8		SW	0.43	11.		L. Kina, Director.
Grenoble, Normal School	29.20	741 6	29.95	760.6	65.1	18.4	66	NW			1		k		SW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.80	757.0	30.02	762.4	61.9	16.6	73	W			1		5		SSW	0.157	4.0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.71	754.6	30.01	762.2	65.7	18.7	56	NE			1		5	E	ESE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.04	737.7	29.96	760.9	67.6	19.8	65	W			1		5k		SW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.93	760.1	30.04	762.9	65.1	18.4	71	S			3		2		NE	0.272	6.90	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.36	745.7	29.97	761.1	64.2	17.9	63	N			1		10		NW	0.063	1.6	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.63	752.7	29.90	759.4	67.3	19.6	76	WSW			1		4		E	0.157	4.00		E. Stephan, Director.
Mirecourt, Normal School	28.91	734.3	29.93	760.1	67.1	19.5	60	NE			1		8		NE	0	0		Barbier, Director.
Mont-Louis	24.79	629.7	30.03	762.7	50.5	10.3	59	SW	7.4	3.3			6		W	0	0		M. Cave, for Dr. Fines.
Nice	29.86	758.5	29.90	759.4	65.8	18.8	75	SW			2		5	W	SW	0.283	7.2	Cloudy	Capt. Boissiere, Director.
Nismes, Normal School	29.71	754.7	29.91	759.8	73.2	22.9	48	NW			1		2		NW	0.295	7.5	Slightly cl'dy	M. Boyer, Director.
Perpignan	29.86	758.4	29.97	761.1	65 7	18.7	37	NE	18.0	5.8			1	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.49	571.3			43.9	6.6							1		NE	0.236	6.0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.86	733.0	29.91	759.6	62.6	17	66	N			4		5n	N	N	0	0	Cloudy	M. Taillen
Puy de Dome (Summit) Ob	25.15	638.9			42.8	6 0	100	NNE			1		10			0.063	1.6		Alluard, Director.
Rochefort, Naval Obs'y	30.92	762.6	30.06	763.4	66.2	19.0	68	SW			3		8	E	E	0	0	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.92	760.0	30.01	762.2	72.1	22.3	36	NE			1		0			0	0	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	29.98	761.5	30.01	762.2	64.0	17.8	63	NNE			3		0			0.043	1.10	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.83	757.7	30.00	761.9	71.6	22.0	40	NNE			1		5	ESE	E	0	0		E. Renou, Director.
Tarbes, Normal School	28.90	734.1	29.99	761.8	68.0	20	55	NE											T. Huguet, Director
Toulouse, Observatory	29.36	745.8	30.09	764.2	61.2	16.2	66	NW			1		5			0.008	0.2	Cloudy	B. Bailland, Dir.
Tours	29.80	757.0	30.00	762.0	68.0	20.0	58	SSW			1		8	SSE	NNW	0.173	4.4	¾ covered	M. de Tastes.
Versailles, Observatory	29.52	749.8	30.01	762.2	71.6	22.0	35	NE			1		0			0	0	Clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.28	743.8	29.98	761.5	66.6	19.2	70	NNW			1		10		NW	0	0	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.12	765.0	30.15	765.7	77.4	25.2										0.24	6.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.72	754.9			71.1	21.7	39	NNE			1		5		SE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	30.01	762.2	30.03	762.8	60.8	16.0	74	ENE	7.2	3.2			10ck			0.016	0.4	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,556.40 m., or 5,264.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.15	740.5	30.02	762.4	66.4	19.1	57	E			6		6k	E		0	0		Prof. Dr. Hoh.
Berlin	29.93	760.1	30.10	764.4	68.0	20.0	57	N			2		7			0	0		Prof. Dr. Arndt.
Breslau	29.51	749.6	30.04	763.1	65.5	18.6	70	NE			3		10			0	0		Royal University Obs'y
Carlsruhe	29.55	750.5	29.97	761.1	67.6	19.8	64	NE			2		1	E		0	0		Albert Senz.
Cassel	29.47	748.6	30.08	764.1	65.8	18.8	62	ENE			3		6	NE		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.60	751.7	30.08	764.0	70.3	21.3	35	E			2		1			0	0		Physical Society.
Friedrichshafen	28.55	725.1	29.97	761.2	57.6	14.2	72	NE			5		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.11	764.9	30.19	766.7	59.9	15.5	72	ENE			5		0			0	0		Dr. Reinhold Kleeman.
Kiel	30.21	767.3	30.23	767.7	54.0	12.2	68	NE			3		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.04	762.9	30.12	765.0	68.0	20.0	75	NE			5		5	E		0.067	1.7		Prof. E. Luther.
Köslin			30.12	765.0	61.9	16.6		N			4		1			0	0		H. Müller.
Leipsic Observatory	29.67	753.7	30.09	764.2	65.8	18.8	57	ENE			3		8	NE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.89	759.3	30.12	765.1	67.3	19.6	61	NE			4		3cs	NE		0	0		Dr. Assmann.
Memel	30.10	764.5	30.15	765.7	69.1	20.6	68	ENE			1–2		8ks						Reinbrecht & Issermann
Munich	28.16	715.2	30.02	762.5	61.3	16.3	56	NE			2		8	NE		0	0		Dr. C. Lang.
Neufahrwasser	30.14	765.6	30.16	766.0	51.4	10.8	89	N			2		10			0.043	1.1		A. Lothes.
Neustadt (Palatinate)	29.45	748.0	29.98	761.5	70.0	21.1	48	NNE			1		2	NNE		0	0		Reallehrer Dicknether.
Posen	29.78	756.3	30.06	763.4	67.8	19.9	62	NE			2		5			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.44	747.8	29.97	761.3	67.8	19.9	60	ENE			3		3	E		0	0		Imp. University Observatory.
Stuttgart	29.02	737.0	29.88	759.0	67.6	19.8	47	NE					3	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.50	723.8	30.08	763.9	65.3	18.5	64	NNE	2.2	1.0			5k		NNE	0	0		Reallehrer J. Hopfner.
Wustrow	30.19	766.9	30.22	767.5	52.0	11.1	75	NE			3		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.41	747.0	29.80	756.8	69.8	21.0		SW			3.0		5					½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.64	752.9	29.69	754.2	84.4	29.1	77	SW					0			0	0	Blue sky	
Deesa	29.16	740.6	29.61	752.2	100.3	37.9	15	WSW	13.1	5.8			0			0	0	Misty	
Bombay	29.74	755.3	29.77	756.2	85.7	29.8	70	WNW	20	8.9			0			0	0	Blue sky	
Poona (Yarrowda)	27.90	708.6	29.71	754.6	89.0	31.7	41	W	26	11.6			0			0	0	Blue sky	
Belgaum	27.24	691.8	29.73	755.0	83.4	28.6	57	WSW	16	7.2			5	E		0	0	D. clouds	
Lahore	28.89	733.7	29.60	751.9	96.2	35.7	22	ESE	2.9	1.3			0			0.11	2.8	Blue sky	
Roorkee	28.69	728.8	29.56	750.9	90.8	32.7	19	E	4	1.8			7			0.09	2.3	Thunder-storm	
Agra	29.01	736.9	29.56	750.7	94.6	34.8		W	4.3	1.9			0			0	0		
Nagpur	28.57	725.7	29.57	751.0	101.0	38.3	14	WNW	5.9	2.6			1			0	0	Blue sky	
Jubbulpore	28.28	718.3	29.59	751.6	98.7	37.1	16	NW	4.2	1.9			3			0	0	D. clouds	
Lucknow	29.22	742.1	29.58	751.3	97.7	36.5	22	NNE	1.0	0.4			0			0	0	Blue sky	
Allahabad	29.24	742.7	29.54	750.3	98.7	37.1	29	Calm	2.0	0.9			0			0	0	Blue sky	
Patna	29.40	746.8	29.58	751.2	93.5	34.2	51	E	1.4	0.6			0			0	0	Blue sky	
Hazaribagh	27.61	701.4	29.56	750.7	92.6	33.7	31	WNW	5.3	2.4			3		W	0	0		
Cuttack	29.56	750.9	29.64	752.9	94.3	34.6	81	SSW	4.8	2.2			2			0	0	D clouds	
Calcutta (Alipore)	29.63	752.6	29.65	753.2	84.7	29.3	77	SSW	8.0	3.6			0			0	0	Blue sky	
Goalpara	29.24	742.7	29.65	753.0	80.0	26.7	85	ESE	0.9	0.4			1		W	0.29	7.4	D. clouds	
Chittagong	29.61	752.1	29.70	754.3	83.9	28.8	83	SSW	6.7	3.0			0			0	0		
Sibsagar	29.31	744.5	29.64	753.0	80.4	26.9	80	NE	1.2	0.5			10	W	W	0.02	0.5	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.44	747.8	29.85	758.1	73.2	22.9	33	E	0.7	0.3			2			0	0		Prof. Giovanni Clodig.
Milan	29.34	745.2	29.85	758.1	67.5	19.7	48	SW	4.3	1.9			1			0.051	1.3		Prof. Schiaparelli.
Padua	29.75	755.6	29.85	758.3	69.4	20.8	43	ESE	8.7	3.9			0			0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.95	735.3	29.85	758.1	66.9	19.4	53	S	2.5	1.1			2	NW		0	0		Prof. P. F. Denza.
Genoa	29.69	754.0	29.87	758.8	63.3	17.4	70	SW	4.3	1.9			2	NE		0.646	16.4		Prof. G. M. Garibaldi.
Mondovi	28.00	711.2	29.89	759.3	69.9	17.7	47	W			2		4	NE		0.248	6.3		Prof. D. C. Bruno.
Pesaro	29.80	757.0	29.85	758.2	63.1	17.3	81	NW	8.7	3.9			3	NE		0	0		Prof. Luigi Guidi.
Florence	29.60	751.8	29.85	758.3	68.0	20.0	64	E			2		9	E		0.862	21.9		Cav. F. Meucci.
Leghorn	29.78	756.5	29.87	758.7	64.6	18.1	64	WNW	3.1	1.4			7	NE		0.150	3.8		Prof. P. Monte.
Rome	29.66	753.3	29.83	757.7	64.9	18.3	66	W	5.6	2.5			6			0.079	2.0		Prof. P. S. Ferrari
Lecce	29.59	751.6	29.84	757.9	70.5	21.4	84	NNE	9.8	4.4			10	N		0.039	1.0		Prof. C. De Giorgi.
Cosenza	28.96	735.5	29.83	757.7	63.0	17.2	74	NW	0	0			10			0.047	1.2		Prof. D. Conti.
Cagliari	29.52	749.8	29.71	754.6	68.8	14.9	82	WNW			4		10	W		0.217	5.5		Prof. A. Pacinotti.
Palermo	29.63	752.7	29.89	759.1	63.5	17.5	51	WNW	6.9	3.1			10			0.047	1.2		Prof. G. Ciacciatore.
Syracuse	29.74	755.5	29.79	756.6	68.2	20.1	57	SE	6.3	2.8			7	S		0	0		Prof. V.G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.29	744.0	29.80	757.0	64.8	18.2	69	S	0	0			9	S		0.201	5.1		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					60.9	16.1	61	NE	3.0	1.6			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.74	755.4	29.94	760.5	65.0	18.3	71	NNE	4.2	1.9		1ck				0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.76	755.9	29.83	757.7	64.6	18.1	91	Calm	0	0		0	0			0	0	Clear	The Staff.
Wakayama	29.83	757.7	29.88	758.9	62.3	16.8	66	E	3.8	1.7			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.96	634.0	30.00	762.0	58.6	12.0	41	SW			1	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.60	599.5			64.9	18.3	49	Calm	0	0		0	0			Inap.	Inap.	Clear	Vicente Fernandez.
Leon	24.33	617.9	29.92	760.0	64.0	17.8	68	NW			2	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.58	751.3	29 84	757.8	71.2	21.8	90	Calm			0	3cs	0			0	0	Clear	F. Quiljano, C. E.
Mexico, Central Observatory	23.01	584.5	29.93	760.3	57.6	14.2	70	Calm	0	0		0	0			0	0	Hazy	The Staff
Morelia	23.87†	606.2†			70.7	21.5	25	E			2	2c	0	E		0	0	Clear	M. Fena, M. D.
Pabellon (Aguascalientes)	23.86	606.1	29.82	757.3	60.6	15.9	65	Calm			0	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.40	594.4	30.19	766.7	51.6	10.9	30	Calm	0	0		0	0			0.20	5.0	Clear	Prof. P. Spina.
San Luis Potosi	24.11	612.5	30.02	762.5	60.8	16.0	72	S			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.76	756.0	29.78	756.3	77.5	25.3	82	S			1	0	0			0	0	Hazy	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.52	572.1	30.08	764.0	61.9	16.6	52	Calm			0	2c	0	W		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,498 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.10	764.5	30.10	764.5	63.7	17.6		NE			4					0	0		
Groningen	29.99	761.8	30.05	763.2	58.5	14.7		NE								0	0		
Helder	30.17	766.2	30.17	766.2	51.3	10.7		NE			4					0	0		
Hellevoetsluis	30.09	764.3	30.09	764.3	63.7	17.6	47	ENE			3					0	0		
Utrecht	30.07	763.6	30.11	764.8	64.4	18.0	53	ENE			4		2			0	0	L'ly cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.25	768.4	30.31	769.8	56.5	13.6	52	N	2.5	1.1			0			0	0		
Brönø	30.32	770.1	30.36	771.1	46.8	8.2	83	NNE	18	8			1			0	0		
Christiania	30.17	766.4	30.32	770.1	65.3	18.5	49	SW	4	2			9			0.035	0.9		
Tromsö	30.28	769.0	30.33	770.4	38.5	3.6	60	SSW	13	6			10			0.110	2.8		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.47	748.5	29.68	753.9	60.8	16.0	83	N			6		4			0.315	8.0		Dr. J. A. Sampaio.
Campo Major	28.98	736.0	29.97	761.1	65.1	18.4	47	SSW	5.6	2.5			8			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.78	756.5	29.87	758.7	67.1	19.5	68	W	16.1	7.2			3			0.327	8.3		Capt. D. A. de Cunha.
Lisbon Observatory	29.59	751.6	29.95	760.7	59.0	15.0	78	S	13.6	6.1			10			0.016	0.4		The Staff.
Ponta Delgada (Azores)	29.53	750.1	29.60	751.9	59.0	15.0	68	NW	18.1	8.1			3			0.169	4.3		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mossamedes, Benguela			29.89	759.3	69.8	21.0		W			2		0			2	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Preya, Cape Verde I'ds.			30.17	766.2	79.0	26.1		NNE			1		2		NNE	1	NNE		D clouds	Antonio Sarmento, Q.M
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello Benguela, Benguela			29.91	759.7	75.2	24.0		NNW			2		3		W.	2			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães, Macao, China			30.05	763.2	80.6	27.0		E			2		0			2			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	30.42	772.6	30.44	773.1	35.4	1.9	64	NW	18	8			0						Capt. Sselilwerstow.
Astrakhan	29.96	760.9	29.87	758.8	76.8	24.9	48	E	4	2			3cs					Light clouds	Capt. Wisganow.
Barnaul	29.52	749.7	30.02	762.4	53.1	11.7	91	NE	0	0			10					Light clouds	Meteorological Obs.
Dorpat	30.06	763.5	30.30	769.5	67.8	19.9	56	NE	9	4			1ck						Prof. Dr. Weihrauch.
Ekaterinburg	28.99	736.4	29.92	760.0	67.8	19.9	27	SW	13	6			6c					Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.78	756.5	30.04	763.1	73.4	23.0	41	NE	2	1			7						Physical Cabinet.
Kertch	29.86	759.3	29.91	759.8	56.5	13.6	97	S	7	3			3						Lagorio.
Kieff	29.21	741.8	29.82	757.3	72.3	22.4	48	N	7	3			0					Dense haze	Physical Cabinet.
Krotkowo*	29.57	751.0	30.02	762.4	80.4	26.9	26	N	4	2			7k						Cand. Fatjanow.
Lugan	29.60	751.7	29.80	756.8	71.8	22.1	49	SSE	9	4			4			Blank	Blank	Light clouds	Meteorological Obs.
Moscow	29.65	753.2	30.19	766.8	71.2	21.8	43	N	4	2			0						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.76	755.9	29.83	757.7	65.1	18.4	80	SW	9	4			10n					Raining	Kurdakof.
Nikolaievsk, on the Amoor	29.65	753.1	29.74	755.3	32.7	0.4	90	E	20	9			10n						
Nukuss	29.50	749.3	29.72	754.9	88.2	31.2		ENE	9	4			0						
Orenburg																			
Pekin (China)	29.92	759.9	30.06	763.5	67.1	19.5	38	S	4	2			7n						Physical Observatory.
St. Petersburg	30.32	770.2	30.34	770.6	61.9	16.6	30	ENE	7	3			0						Central Physical Obs.
Tashkend	28.04	712.2	29.52	749.7	79.5	26.4	44	Calm	0	0			0						Teich, A. M.
Tiflis	28.46	722.8	29.85	758.3	58.3	14.6	87	W	4	2			9n						Physical Observatory.
Vladivostock																			
Warsaw	29.58	751.4	29.99	761.7	73.0	22.8	45	ENE	9	4		10c							Astronomical Obs.
Wilna	29.73	755.1	30.13	765.4	72.9	22.7	42	ENE	2	1			7						Astronomical Obs.
Yeniseisk	29.79	756.6	30.08	763.9	45.7	7.6	48	W	7	3			2						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.90	759.4	30.00	762.0	64.8	18.2	47	S	3.2	1.44			0			0.075	1.91	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.92	760.0	29.98	761.4	75.7	24.3	69	SE	2.1	0.95		3	2	NW		0	0	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.05	687.0			61.7	16.5	55	SE	16.5	7.36			0			0.079	2.0	Clear	Domingo Martin y Perez
Madrid, Royal Observatory	27.81	706.4	30.02	762.4	62.2	16.8	68	S	6.0	2.67		1	4			Inap.	Inap.	Clouds	The Staff.
Murcia, Met. Obs'y	29.86	758.4	30.00	762.1	76.6	24.8	50	NE	2.2	0.97		1	5	SW		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.92	734.6	29.82	757.3	55.0	12.8	76	SE	18.1	8.1			10			0.047	1.2	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.74	755.3	29.80	757.0	76.5	24.7	85	SSE	3.1	1.4		1ck	1k		SSE	0.358	9.1	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.83	757.6	29.88	758.9	86.0	30.0	71	SE	3.3	1.5			7kn			0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.95	760.8	30.05	763.3	71.1	21.7	48	S	5.2	2.3		1	2	W	S	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.87	758.7	29.96	761.0	77.0	25.0	92	SE	0	0		5ks	3k	SE	SE	0.128	3.25	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.38	771.6	30.42	772.6	48.2	9.0		S			2		0			0	0		
Umea	30.37	771.5	30.43	772.8	55.0	12.8	57	S			2		1			0	0		
Hernosand	30.30	769.7	30.35	771.0	58.3	14.6	52	NE			2		0			0	0		
Stockholm	30.21	767.4	30.39	771.9	60.4	15.8	32	ENE			2		0			0	0		
Wisby	30.16	766.0	30.22	767.5	47.5	8.6	78	NE			4		5			0	0		
Sub-Series.																			
Upsala	30.24	768.2	30.33	770.4	65.1	18.4	21	ENE	8.5	3.8			0			0	0		Nils Ekholm.

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

SWEDISH Naval Series.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia, N. 49° 25′, W. 10° 25′			29.98	761.6	52.7	11.5	92	E			5		10						Misty	J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.52	724.5	29.92	760.0	63.9	17.7	56	N			2		1			0	0	Clear.	The Observatory.
Zurich	28.37	720.6	30.00	761.9	57.6	14.2	81	N			2		8			0	0	Foggy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm.; Thermometer, +1.5 Cent. Relative Humidity, —1 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.81	757.2	70.3	21.3	53	N	7	3.0			5		SW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.86	758.5	70.2	21.2		NW			1		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.89	759.1	70.9	21.6	61	W			1		2ks		SW	0.025	0.64		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					38.8	3.8		N	2	0.9			10ks			0.50	12.7	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.83	757.7	29.90	759.4	37.2	2.9	90	N	16	7.2			10n			0.32	8.1	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.69	754.1	29.73	755.1	35.1	1.7	100	N	15	6.7			10s			0.370	9.40	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.83	757.7	30.02	762.5	41.0	5.0	88	N			1		10n			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.79	756.7	29.96	761.0	38.0	3.3		N			2	10k	0			0.62	15.7	Cloudy	H. A. Johnson.
Father Point, Quebec	30.12	765.0	30.14	765.5	38.5	3.6	91	NE	32	14.3			10n			0	0	Threatening	J. McWilliams.
Fredericton, N. B.	29.82	757.4	29.89	759.2	39.4	4.1	72	NE	21	9.4			10s			Inap.	Inap.	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.02	737.1	29.83	757.7	55.0	12.8	50	SE	8	3.6		5k	5ks	SE		0	0	Cloudy	James Stewart.
Granton, Ontario	29.12	739.6	30.25	768.3	42.0	5.6	74	N			2	0	0			0	0	Clear	James Grant.
Halifax, N. S.	29.60	751.8	29.73	755.1	45.2	7.3	87	NW	6	2.7			10n			0.030	0.76	Cloudy	A. Allison.
Hamilton, Ontario	29.82	757.4	30.20	767.1	47.7	8.7	78	NW			2	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.75	755.6	30.00	764.3	45.1	7.3	59	NW	15	6.7		8k	0	NW		0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.04	752.8	29.68	753.9	36.7	2.6	93	S	1	0.4			10n			0.12	3.0	Overcast	C. H. Rigby.
Montreal, Quebec	29.80	756.9	30.01	762.2	42.1	5.6	91	N	14	6.3			10n			0.03	0.8	Light rain	C. H. McLeod, C. E
Moose Factory, Ontario	30.46	773.7	30.49	774.4	36.2	2.3	74	NE			3	0	0			0.10	2.5	Clear	J. R. Nason.
Norwood, Ontario	29.46	748.3	30.17	766.3	41.0	5.0	55	NE	8	3.6		8k	0	NE		0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.45	748.0	30.22	767.6	41.7	5.4	57	N			1	3k	0			0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.59	751.6	30.30	769.6	39.0	3.9	77	N	20	8.9		2ck	5ks	NE		0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.51	749.5	30.22	767.6	43.9	6.6	84	N	14	6.3		0	0			0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.56	750.8	30.22	767.6	45.9	7.7	66	N	8	3.6		0	0			0	0	Clear	M. Payne.
Quebec, Quebec	29.68	753.9	30.01	762.2	41.0	5.0	82	E			5		10n			0.54	13.7	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.75	755.6	30.22	767.6	41.0	5.0	65	NW	6	2.7		0	6s			0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.65	753.1	29.82	757.4	37.0	2.8	100	NE	20	8.9			10s			0.240	6.10	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.56	750.8	30.29	769.4	43.1	6.2	67	N	13	5.8		1cs	0			0	0	Clear	K. Stewart.
Stratford, Ontario	28.91	734.3	30.23	767.8	40.4	4.7	69	NW	8	3.6		0	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.65	753.1	29.70	754.4	41.6	5.3	95	N	3	1.3			10n			0.27	6.9	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.85	758.2	30.24	768.1	44.9	7.2	60	N	20	8.9		0	0			0	0	Clear	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.14	740.1	30.22	767.6	43.9	6.6	61	N	18	8.0		0	0			0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.66	753.4	29.73	755.1	46.1	7.8	84	N	4	1.8			10s			0.05	1.3	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.47	748.5	29.78	755.1	33	0.6	100	N					10			0	0	Foggy	John Delany.
St. Pierre, N. F., l'Hopital Maritime.			29.65	753.1	42.1	5.6		SE			2					0.16	4.1		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 f., for 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.90	759.4	29.99	761.7	50	10.0	39	N	11	4.9		8k	0	NW		Inap.	Inap.	Fair	
Alpena, Michigan	29.69	754.1	30.35	770.9	45	7.2	61	NE	9	4.0		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.83	732.3	29.93	760.2	68	20.0	74	NE	7	3.1		8c	0	Calm		0	0	Fair	
Atlantic City, New Jersey	29.95	760.7	29.96	761.0	57	13.9	52	NW	14	6.3		Haze	Sm'e	Calm	NW	0	0	Hazy	
Augusta, Georgia	29.82	757.4	30.02	762.5	72	22.2	80	N	3	1.3		5cs	2s	W	Calm	0.09	2.3	Fair	
Baltimore, Maryland	29.96	761.0	30.01	762.2	63	17.2	28	N	10	4.5		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	56	13.3	40	NW	28	12.5		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.81	706.4	29.67	753.6	69	20.6	56	SE	24	10.7		5cs	0	S		0	0	Fair	
Boerne, Texas	28.42	721.9	29.68	753.9	66	18.9	89	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.17	690.1	30.13	765.3	38	3.3	72	SE	2	0.9		0	5s		W	0.12	3.0	Fair	
Boston, Massachusetts	29.69	754.1	29.84	757.9	47	8.3	41	NW	22	9.8		0	5ks		NW	0	0	Fair	
Brackettville, Texas	28.68	728.5	29.70	754.4	70	21.1	30	E	12	5.4		2ck	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.83	732.3	29.79	756.7	61	16.1	82	SE	28	12.5			10s		SE	0.20	5.1	Cloudy	
Brownsville, Texas	29.77	756.1	29.82	757.4	80	26.7	87	Calm	0	0		0	0			0	0	Clear	
Buffalo, New York	29.46	748.3	30.18	766.6	45	7.2	53	N	12	5.4		1k	0	Calm		0	0	Clear	
Burkes, Arizona					55	12.8	39	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.71	754.6	30.00	762.0	41	5.0	82	NW	15	6.7			10n		NW	0.01	0.3	Light rain	
Cairo, Illinois	29.66	753.4	30.04	763.0	70	21.1	57	E	4	1.8		0	Haze			0	0	Clear	
Campo, California																			
Cape Hatteras, N. Carolina	30.01	762.2	30.01	762.2	70	21.1	70	NE	4	1.8		0	Haze			0	0	Hazy	
Cape Henry, Virginia	29.98	761.5	30.00	762.0	67	19.4	42	NW	7	3.1		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	29.99	761.7	30.01	762.2	72	22.2	80	E	4	1.8		5c	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	29.94	760.5	29.97	761.2	59	15.0	43	N	20	8.9		0	0			0	0	Clear	
Castroville, Texas	29.07	738.4	29.75	755.6	69	20.6	85	E	2	0.9		5k	5s	W	S	0	0	Cloudy	
Cedar Keys, Florida	29.86	758.4	29.88	758.9	72	22.2	85	NE	12	5.4			10ks		NE	0.08	2.0	Cloudy	
Charleston, South Carolina	29.91	759.7	29.97	761.2	75	23.9	86	NE	6	2.7		5c	0	Calm		0	0	Fair	
Charlotte, North Carolina	29.17	740.9	29.95	760.7	68	20.0	69	NE	8	3.6		0	0			0	0	Clear	
Chattanooga, Tennessee	29.22	742.2	29.99	761.7	70	21.1	61	NE	3	1.3		2cs	Sm'e	Calm	Calm	0	0	Fair	
Cheyenne, Wyoming	23.78	604.0	29.72	754.9	51	10.6	28	NW	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.46	748.3	30.15	765.8	55	12.8	62	NE	12	5.4		5ck	2s	NW	Calm	Inap.	Inap.	Fair	
Chincoteague, Virginia	29.97	761.2	29.99	761.7	62	16.7	61	N	14	6.3			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.46	748.3	30.10	764.5	64	17.8	58	NE	5	2.2		7cs	Sm'e	Calm	Calm	0	0	Fair	
Cleveland, Ohio	29.47	748.5	30.20	767.1	50	10.0	58	NE	13	5.8		1k	0	NE		0	0	Clear	
Coleman City, Texas	28.06	712.7	29.65	753.1	71	21.7	75	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.28	743.7	30.11	764.8	57	13.9	47	NE	8	3.6		0	0			0	0	Clear	
Concho, Texas	27.96	710.2	29.56	750.8	70	21.1	70	SE	5	2.2		0	0			0	0	Clear	
Corsicana, Texas	29.43	747.5	29.88	758.9	70	21.1	80	SE	4	1.8		0	0			0	0	Clear	
Davenport, Iowa	29.48	748.8	30.11	764.8	60	15.6	55	E	10	4.5		8c	0	Calm		0	0	Fair	
Dayton, Washington T'y					36	2.2	90	F			1	0	5s		E	0.49	12.4	Fair	
Deadwood, Dakota	25.04	636.0			55	12.8	45	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.71	729.2	29.83	757.7	71	21.7	75	SE	8	3.6		2c	0	Calm		0	0	Clear	
Delaware Breakwater, Del.	29.95	760.7	29.97	761.2	62	16.7	56	N	28	12.5		0	Haze			0	0	Hazy	
Denison, Texas	29.11	739.4	29.86	758.4	74	23.3	68	SE	5	2.2		0	0			0	0	Clear	
Denver, Colorado	24.50	622.3	29.72	754.9	55	12.8	28	S	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	29.08	738.6	29.92	760.0	69	20.6	75	S	5	2.2		8cs	0	SW		0	0	Fair	
Detroit, Michigan	29.56	750.8	30.24	768.1	47	8.3	62	N	9	4.0		2cs	0	N		0	0	Clear	
Dodge City, Kansas	27.24	691.9	29.43	747.5	62	16.7	61	S	18	8.0		0	0			0	0	Clear	
Dubuque, Iowa	29.49	749.0	30.18	766.6	60	15.6	71	NW	5	2.2			10ks		N	0	0	Cloudy	
Duluth, Minnesota	29.52	749.8	30.21	767.3	43	6.1	75	NE	5	2.2		10cs	0	SE		0.09	2.3	Cloudy	
Eagle Pass, Texas	29.05	737.9	29.74	755.4	76	24.4	69	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	29.74	755.4	29.81	757.2	42	5.6	70	NE	16	7.2			10s		NE	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.48	748.8	30.20	767.1	46	7.8	55	NE	15	6.7		0	0			0	0	Clear	
Escanaba, Michigan	29.68	753.9	30.31	769.9	52	11.1	47	E	5	2.2		0	5s		N	0	0	Fair	
Florence, Arizona	28.32	719.3	29.92	760.0	59	15.0	38	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.86	631.4	30.30	769.6	45	7.2	61	SE	3	1.3		0	Haze		Calm	0	0	Hazy	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.46	697.5	29.16	740.7	64	17.8	62	SE	5	2.2		5cs	0	SE		0.05	1.3	Fair	
Fort Custer, Montana	26.53	673.8			55	12.8	68	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.16	639.0	30.02	762.5	56	13.3	63	SW	2	0.9		0	0			0	0	Clear	
Fort Elliot, Texas	26.83	681.5	28.96	735.6	64	17.8	78	SE	10	4.5		0	0			0.21	5.3	Clear	
Fort Gibson, Indian Ter.	29.37	746.0	29.88	758.9	74	23.3	68	E	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.06	636.5	29.86	758.4	50	10.0	16	NE	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.59	726.2	29.80	756.9	70	21.1	85	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	26.90	683.2			56	13.3	68	W	11	4.9		2k	0	W		0	0	Fair	
Fort McKavett, Texas	27.61	701.3	29.44	747.8	69	20.6	65	SE	3	1.3		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.67	728.2	29.72	754.9	74	23.3	76	SE	6	2.7		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.75	704.8			65	18.3	68	SE	10	4.5		0	0			0	0	Clear	
Fort Verde, Arizona					50	10.0	72	S			4		Fog		Calm	0	0	Foggy	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.81	757.2	29.85	758.2	79	26.1	78	E	5	2.2		2k	0	E		0	0	Clear	
Grand Haven, Michigan	29.57	751.1	30.22	767.6	54	12.2	55	E	14	6.3		0	0			0	0	Clear	
Helena, Montana					47	8.3	62	SW	6	2.7			8s		Calm	0.02	0.5	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.31	744.5	30.07	763.8	63	17.2	62	N	3	1.3		2c	0	N		0	0	Clear	
Indianola, Texas	29.83	757.7	29.86	758.4	79	26.1	70	E	13	5.8		1c	0	W		0	0	Clear	
Jacksboro, Texas	28.77	730.7	29.85	758.2	75	23.9	77	SE	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	29.87	758.7	29.90	759.4	73	22.8	85	NE	6	2.7			10s		NE	0.40	10.2	Cloudy	
Keokuk, Iowa	29.40	746.7	30.00	762.0	63	17.2	78	E	10	4.5		0	5ks		SW	0	0	Fair	
Key West, Florida	29.79	756.7	29.82	757.4	77	25.0	82	SE	7	3.1		5k	0	SE		0.65	16.5	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	64	17.8	78	NE	7	3.1		5ck	Haze	NE	Calm	0	0	Fair	
Knoxville, Tennessee	29.05	737.9	30.01	762.2	76	24.4	62	NE	2	0.9		0	0			0	0	Clear	
La Crosse, Wisconsin	29.42	747.3	30.15	765.8	60	15.6	55	NE	7	3.1			10n		Calm	Inap.	Inap.	Light rain	
La Mesilla, New Mexico	25.94	658.9	30.10	764.5	49	9.4	24	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.08	738.6	29.87	758.7	75	23.9	68	SE	3	1.3		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.64	752.8	29.94	760.5	74	23.3	86	NE	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.62	752.3	29.97	761.2	43	6.1	83	E	4	1.8		0	0			0	0	Clear	
Louisville, Kentucky	29.50	749.3	30.05	763.3	63	17.2	67	N	4	1.8		5cs	Sm'e	Calm	Calm	0	0	Fair	
Lynchburg, Virginia	29.32	744.7	29.98	761.5	67	19.4	60	SE	2	0.9		10c;hz	Haze	W		0	0	Hazy	
Madison, Wisconsin	29.19	741.4	30.18	766.6	55	12.8	56	E	11	4.9		10cs	0	NW		0.05	1.3	Cloudy	
Marquette, Michigan	29.63	752.6	30.35	770.9	46	7.8	62	NW	1	0.4		0	0			0	0	Clear	

UNITED STATES SERIES—Continued.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Mason, Texas	28.23	717.0	29.92	760.0	69	20.6	85	S	5	2.2		0	0			0	0	Clear	
Memphis, Tennessee	29.60	751.8	29.92	760.0	72	22.2	62	NE	6	2.7		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.49	749.0	30.23	767.8	50	10.0	52	NE	12	5.4		8ck	2s	NW	Calm	0.03	0.8	Cloudy	
Mobile, Alabama	29.86	758.4	29.90	759.4	70	21.1	85	N	6	2.7		8k	0	NE		Inap.	Inap.	Fair	
Montgomery, Alabama	29.73	755.1	29.96	761.0	71	21.7	80	E	5	2.2		5k	0	E		0	0	Fair	
Morgantown, West Virginia	29.10	739.1	30.07	763.8	60	15.6	60	Calm	0	0		0	0			0	0	Clear	
Mt. Washington, N. H.	23.54	597.9	29.90	759.4	22	−5.6	100	NE	16	7.2			10n		NE	0.72	18.3	Light snow	
Nashville, Tennessee	29.50	749.3	30.01	762.2	72	22.2	50	N	2	0.9		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.80	756.9	29.92	760.0	51	10.6	40	N	14	6.3		5k	0	N		0	0	Fair	
New London, Connecticut	29.82	757.4	29.87	758.7	51	10.6	46	NW	10	4.5		5k	0	NW		0	0	Fair	
New Orleans, Louisiana	29.81	757.2	29.86	758.4	73	22.8	85	NE	12	5.4		10cs	0	Calm		0	0	Cloudy	
Newport, Rhode Island	29.81	757.2	29.86	758.4	50	10.0	45	NW	16	7.2		2k	0	NW		0	0	Clear	
New River, North Carolina					71	21.7	85	NE			1		10ks		NW			Cloudy	
New York, New York	29.79	756.7	29.96	761.0	51	10.6	45	N	15	6.7		1k	0	NW		0	0	Clear.	
Norfolk, Virginia	29.96	761.0	30.01	762.2	72	22.2	42	Calm	0	0		0	5s;sm'		W;Calm	0	0	Fair	
North Platte, Nebraska	26.81	681.0	29.23	742.4	63	17.2	57	S	42	18.8		0	Haze		Calm	0.17	4.3	Hazy	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	41.0	5.0	96	S	2	0.9			10s		N	Inap.	Inap.	Cloudy	
Omaha, Nebraska	28.74	730.0	29.76	755.9	76	24.4	69	SE	10	4.5		2c	Haze	Calm		0	0	Fair	
Oswego, New York	29.82	757.4	30.15	765.8	43	6.1	75	N	11	4.9			10s		N	0	0	Cloudy	
Pembina, Dakota	28.95	735.3	29.75	755.6	58	14.4	58	S	20	8.9		2c	5ks	Calm	S	0.12	3.0	Threatening	
Pensacola, Florida	29.87	758.7	29.90	759.4	71	21.7	85	NE	12	5.4		4k	7ks	E	NE	0.28	7.1	Cloudy.	
Philadelphia, Pennsylvania	29.95	760.7	30.00	762.0	55	12.8	45	N	26	11.6		Haze	Haze	Calm	Calm	0	0	Hazy	
Phœnix, Arizona	28.66	728.0	30.42	772.7	60	15.6	44	W	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.64	448.0	29.85	758.2	19	−7.2	54	SW	33	14.8		0	0			0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.83	605.3	29.60	751.8	34	1.1	16	NW	5	2.2		5cs	0	SW		0	0	Fair	
Pittsburg, Pennsylvania	29.30	744.2	30.12	765.0	51	10.6	65	NW	5	2.2		0	0			0	0	Clear	
Port Huron, Michigan	29.58	751.3	30.26	768.6	43	6.1	75	N	18	8.0		0	0			0	0	Clear	
Portland, Maine	29.76	755.9	29.81	757.2	46	7.8	84	N	13	5.8			10n		Calm	0.08	2.0	Light rain	
Portland, Oregon	30.04	763.0	30.11	764.8	45	7.2	92	S	3	1.3			10ks		W	0.52	13.2	Cloudy	
Portsmouth, North Carolina					70	21.1	70	Calm	0	0		2k	Haze	Calm	Calm	0	0	Light haze	
Prescott, Arizona	24.56	623.8	29.92	760.0	36	2.2	45	Calm	0	0		0	0			0	0	Clear.	
Punta Rassa, Florida	29.80	756.9	29.82	757.4	72	22.2	90	NE	5	2.2		8cs	1ks	S	E	0.07	1.8	Cloudy	
Red Bluff, California	29.74	755.4	30.12	765.0	42.0	5.6	87	NW	3	1.3		2c	0	NW		0.50	12.7	Clear.	
Rio Grande City, Texas	29.64	752.8	29.84	757.9	74	23.3	86	E	6	2.7		2ck	0	W		0	0	Clear	
Rochester, New York	29.53	750.0	30.16	766.1	45	7.2	53	NE	12	5.4		2k	0	NE		0	0	Clear.	
Roseburg, Oregon	29.58	751.3	30.16	766.1	40	4.4	91	SE	4	1.8		2cs;hz'	2ks	Calm	NW	0.05	1.3	Fair	
Sacramento, California	30.01	762.2	30.08	764.0	47	8.3	77	N	11	4.9			10s		Calm	0.11	2.8	Cloudy	
St. Louis, Missouri	29.47	748.5	30.03	762.7	66	18.9	64	E	4	1.8		1c	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.22	742.2	30.03	762.7	55	12.8	87	SE	21	9.4			10n		SE	0.57	14.5	Light rain	
Salt Lake City, Utah	25.47	646.9	29.80	756.9	45	7.2	30	NW	4	1.8			10s		Calm	Inap.	Inap.	Cloudy	
San Antonio, Texas	29.17	740.9	29.84	757.9	72	22.2	85	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.96	761.0	30.03	762.7	55	12.8	74	W	17	7.6			8ks		NW	.0	0	Cloudy	
Sandusky, Ohio	29.52	749.8	30.20	767.1	51	10.6	65	NE	22	9.8		8c	0	NW		0	0	Fair	
Sandy Hook, New Jersey	29.93	760.2	29.96	761.0	50	10.0	52	NW	32	14.3		0	0			0	0	Clear	
San Francisco, California	30.04	763.0	30.11	764.8	48	8.9	78	NW	6	2.7		0	1s		NW	0.02	0.5	Clear.	
Santa Fé, New Mexico	23.13	587.5	29.67	753.6	48	8.9	34	E	2	0.9		0	Haze		Calm	0	0	Clear.	
Savannah, Georgia	29.87	758.7	29.96	761.0	73	22.8	90	NE	9	4.0		8ck	1s	SE	Calm	0	0	Fair	
Shreveport, Louisiana	29.69	754.1	29.90	759.4	76	21.4	86	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	29.98	761.5	30.01	762.2	74	23.3	86	N	3	1.3		5ck;hz'	Haze	N	Calm	Inap.	Inap.	Hazy	
Socorro, New Mexico	25.23	640.8	29.29	744.0	52	11.1	18	S	6	2.7		0	0			0	0	Clear	
Springfield, Illinois	29.43	747.5	30.09	764.3	63	17.2	63	E	7	3.1		2c	0	NE		0	0	Fair	
Springfield, Massachusetts	29.78	756.4	29.91	759.7	50	10.0	45	NW	15	6.7		0	2ks		N	0	0	Fair.	
Stockton, Texas	26.75	679.4	29.75	755.6	67	19.4	79	SE	24	10.7		0	0			0	0	Clear.	
Thatcher's Island, Mass	29.80	756.9	29.85	758.2	46	7.8	100	NE	12	5.4			10s		N	0	0	Cloudy	
Toledo, Ohio	29.49	749.0	30.18	766.6	48	8.9	78	N	10	4.5		5cs	0	NW		0	0	Fair	
Tucson, Arizona	27.40	696.0	29.95	760.7	60	15.6	44	S	3	1.3		0	0			0	0	Clear.	
Umatilla, Oregon	29.65	753.1	30.14	765.5	46.5	8.1	89	W	3	1.3			10n		W	0.14	3.6	Light rain	
Uvalde, Texas	28.91	734.3	29.70	754.4	71	21.7	80	Calm	0	0		2ck	0	Calm		0	0	Fair	
Vicksburg, Mississippi	29.69	754.1	29.94	760.5	77	25.0	73	E	1	0.4		1c	0	Calm		0	0	Clear	
Virginia City, Montana	24.08	611.6	29.56	750.8	37	2.8	53	Calm	0	0		0	5ks		SW	0	0	Fair	
Visalia, California	29.66	753.1	30.03	762.7	43	6.1	87	NW	4	1.8		0	2ks			0	0	Fair	
Washington, D. C.	29.90	759.4	30.01	762.2	63	17.2	28	N	12	5.4		0	0			0	0	Clear.	
Wickenburg, Arizona					53	11.7	42	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.92	760.0	29.99	761.7	70	21.1	90	Calm	0	0			10s		Calm	0.42	10.7	Cloudy	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	31	−0.6	89	SW	1	0.4		0	8ks		SW	0.05	1.3	Cloudy	
Wood's Holl, Massachusetts	29.80	756.9	29.84	757.9	50	10.0	52	NW	20	8.9		5k	0	NW		0	0	Fair	
Yankton, Dakota	28.54	724.9	29.77	756.1	71	21.7	66	S	4	1.8		0	0			0.43	10.9	Clear	
Yuma, Arizona	29.72	754.9	29.87	758.7	54	12.2	43	W	13	5.8		0	Haze		Calm	0	.0	Clear.	
Sub-Series.																			
Bogota, U. S. Colombia	21.97	558.0			63.5	17.5	67	Calm	0	0		2cs	0			0.17	4.3	Fair	Thomas Herran.
Havana, Cuba, W. I.	29.81	757.2	29.96	761.0	77	25.0	86	SE	2.4	1.1		0	0			0.31	7.9	Clear.	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.96	761.0	29.97	761.2	79	26.1	87	Calm	0	0		2c	2ks	Calm		0.17	4.3	Fair	James Gall.
Navassa, W. I.	29.82	757.4	29.90	759.4	79	26.1	74	E	8	3.6		5k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	83	28.3	79	E			3		8ks	E		0.200	5.08	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.39	746.5	29.94	760.5	79	26.1	89	Calm			0		10s			0	0		Francesco J. Cisneros.
Rivas, Nicaragua					72	22		SE				4	2	W	SE	0	0	½ covered	Carl Flint.
Santiago de Cuba, W. I.	29.90	759.4	29.93	760.2	77	25.0	82	Calm		0		8cs	2k		SE	1.525	38.74	H'y showers	Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.16	766.1	30.21	767.3	38.0	3.3	86	S	15	6.7		3k	1s	S	S	0	0	Fair	J. Fortescue & W. Wood

Note.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.8 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	29.93	760.2	72	22.2	80	NE	14	6.3			10		NE	0.02	0.5			Threatening	
§ Navy Yard, Portsmouth, N. H.	29.81	757.2	50	10.0	79	NNW	11	4.9			5?			0	0			Cloudy?	
Naval Hospital, Yokohama, Japan	29.82	757.4	65.5	18.6	89	Calm			0		0			Slight	Slight			Clear	
§ Adams, Punta Arenas, Costa Rica	29.85	758.2	80	26.7	52	N			1–2		8		NE					Cloudy	
§ Alaska, Callao, Peru*	29.92	760.0	63	17.2	94	NW			1		10					Long	SW	Misty	
§ Alert, N 31° 54′, E. 140° 16′	29.84	757.9	73	22.8	94	SSW			4		10		SW			Mod'ate	NE	Cloudy	
Alliance, Norfolk, Va.	30.03	762.7	67	19.4	69	Calm			0		2		Calm	0	0			Pleasant	
Colorado, New York, N. Y.	29.93	760.2	51	10.6	79	NW	22	9.8			2			0	0			Squally	
§ Constitution, Hampton Roads, Va.	29.97	761.2	65	18.3	73	NW	2	0.9			2		Calm					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.02	762.5	67	19.4	89	SW	4	1.8			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.09	764.3	44	6.7	??	NW	1.2	0.5			2		NW	0.09	2.3			Clear	
§ Jamestown, Sitka, Alaska*	29.98	761.5	39	3.9	91	Calm			0		2					Smooth		Clear	
Kearsarge, Boca del Toro, Chiriqui	29.90	759.4	80	26.7	91	SW			0–1		5		SW			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	29.50	749.3	58	14.4	94	SSW			6		10			Blank	Blank	Mod'ate	SW	Raining	
§ Michigan, Erie, Pa.	30.05	763.3	47	8.3	70	NE			5		2		N					Clear	
§ Monocacy, Shanghai, China	30.02	762.5	63	17.2	72	ENE			1–2		10							Cloudy	
§ New Hampshire, Port Royal, S. C.	29.96	761.0	72	22.2	95	ENE	11	4.9			8		Calm	0	0			Cloudy	
Nipsic, Villafranca, France	29.88	758.9	68	20.0	65	SSW			1		2					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru†	29.93	760.2	65	18.3	89	NW			2		10					Long	W	Cloudy	
§ Palos, Shanghai, China	30.04	763.0	61	16.1	88	ESE			2		10							Cloudy	
§ Passaic, Washington, D. C.	30.04	763.0	63	17.2	??	W			1		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	30.06	763.5	47	8.3	85	NW			1		9					Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	29.97	761.2	63	17.2	52	NNW			3		0							Hazy	
§ Quinnebaug, Gibraltar, Mediterranean	30.02	762.5	66	18.9	68	NE			1		2					Smooth		Clear	
§ Richmond, Shanghai, China	30.04	763.0	64	17.8	78	E			1		10		Calm	0.4	10.			Cloudy	
§ Rio Bravo, Brownsville, Texas†	30.08	764.0	72	22.2	100	E	1	0.4			2		Calm	0	0			Fair	
§ Saratoga, N 39 15′, W. 19° 50′	29.44	747.8	60	15.6	76	WSW			6		8		WSW	0	0	Rough	WSW	Fair	
§ Shenandoah, Montevideo, Uruguay	29.48	748.8	57	13.9	94	SSW			7–8		10		SSW			Heavy	SSW	Cloudy	
§ St. Louis, League Island, Pa.	29.99	761.7	56	13.3	57	NNW	18	8.0			5			0	0			Hazy	
Swatara, Singapore, India†	29.78	756.4	84	28.9	87	NW			2		2		Calm			Smooth		Clear	
§ Tennessee, Aspinwall, Panama	29.87	758.7	79	26.1	91	SE	1	0.4			8		Calm	0	0	Smooth		Fair	
Ticonderoga, Yokohama, Japan	29.86	758.4	68	20.0	95	Calm			0		0					Smooth		Clear	
§ Trenton, Sarf Siglar, Archipelago	29.83	757.7	65	18.3	78	WNW			2		2			0	0			Fair	
§ Tuscarora, Mare Island, Cal.	30.09	764.3	48	8.9	85	W			2		5		S;W	0	0	Smooth		Fair	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	29.96	761.0	66	18.9	23	NNW			5		1		N					Clear	
§ Wabash, Boston, Mass.	29.85	758.2	49	9.4	50	NW	13	5.8			10			0	0			Cloudy	
§ Wachusett, S. 36° 03′, W. 55° 20′	29.55	750.6	48	8.9	??	SSE			5		10		S	0	0	mod'ate	S	Cloudy	
Wyoming, Mouth of Dardanells	29.79	756.7	67	19.4	69	W			1		2		W			Smooth	W	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 40', W. 18° 35'	30.05	63.2	51	10.6		E			5		10		E			Mod'at	ESE	Cloudy	
S. S. Moravian, J. Graham,																			
S. S. Peruvian,																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air.																			A. Christie & F. W. Erskine
																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
St. George's Channel	30.19	766.8	59	15.0	88	ENE			6		4		E	0	0			Clear	
S. S. Ohio, Henry Morrison, N. 38° 40', W. 71° 42'...*†	29.90	759.4	61	16.1	94	N			4		1		N	0	0	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, Guayamas, Mexico ††	29.78	756.4	72	22.2	71	W			2		0			0	0	Smooth		Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 40° 27', W. 67° 16'.....*	29.58	751.3	53	11.7	73	NNE			2		8		N	0	0	Smooth	N	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 45° 24', W. 43° 42'	29.90	759.4	60	15.6	94	SSW			4		5		SW	0	0	3	SW	Hazy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.84	757.9	85	29.4	96	E			3		5		E			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	30.10	764.5	54	12.2		NNE			3	ck		NE		0	0	Smooth		Fine	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal. †	30.13	765.3	50	10.0		NW			2		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California G. Dobney, Portland, Oregon †	30.05	763.3	42	5.6		Calm			0		5		Calm					Hazy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 23° 08', W. 107° 13'....†	29.87	758.7	77	25.0	77	NW			2		0					Light	NW	Clear	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury, N. 19° 07', W. 105° 13 ....†	29.76	755.9	76	24.4	86	ESE			4		8		E			Mod'ate	W	Fair	
§ S. S. City of New York, W. B. Cobb, N. 32° 32', W. 135° 18'....†	30.37	771.4	58	14.4	94	W			4		2		NW	0	0	Mod'ate	NW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 28° 55', W. 115° 51 ....†	30.03	762.7	58	14.4		NW			6		8		NW	0	0	Heavy	NW	Cloudy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N 36° 40', W. 166° 30 .....†	30.20	767.1	60	15.6	76	WSW			4		2		WSW			Mod'ate	WSW	Fair	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	30.03	762.7	62	16.7		SE			5		8		SE	0	0	Smooth		Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury Yokohama, Japan.....†	30.04	763.0	63	17.2	83	NE			2		8		NE	0	0				F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 9° 58', W. 86° 08'.....†	29.83	757.7	82	27.8	100	NW			3		10		NW	0	0	Small	WSW	Cloudy	
§ S.S. Dakota, D. E. Griffiths Esquimalt, Vancouver I'd.†	30.06	763.5	50	10.0	79	NW			2		10		W	0	0			Overcast	D. E. Griffiths.
§ S.S. Granada, J M Cavarly N. 31° 47', W. 118° 43'....†	30.10	764.5	56	13.3	75	WNW			6	2ck		NW		0	0	Heavy	WNW	Clear	
§ S. S. Idaho, N. 39° 52', W. 124° 16'.....†	30.09	764.3				Calm			0		5?		NW	0	0	Rough	WNW	Cloudy?	
§ S.S. Zealandia, R. C. Ghest, N. 28° 14', W. 145° 11'.....	30.34	770.6				E			4				E			Mod'ate	E	Showery	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes, N. 40° 40', W. 68° 49'.....†	29.72	754.9	46	7.8		NW			3		0			0	0	Smooth		Clear	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 47° 57', W. 31° 12'.....†	29.83	757.7	53	11.7		NE			4		5?		E			Mod'ate	E	Raining?	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell, N. 51° 02', W. 15° 18'.....*†	29.99	761.7	55	12.8		ESE			5		8		E	0	0	Mod'ate	ENE	Cloudy	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr Addie Fuller, J. Jorgensen, N. 37° 32', W. 73° 45'.....	29.95	760.7	61	16.1	55	NNW	10	4.5			Sm'e			0	0			Smoky	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 31° 56', W. 63° 23'.....†	30.03	762.7	73	22.8		SW			3		2		SW	0	0	Mod'ate	SW	Clear	J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 28° 42', E. 35° 00'.....*†	30.32	770.1	75	23.9		NE			4		2		N	0	0	Smooth	S	Fair	L. L. Lewis.
Brigantine George, W. H Champlin, Arroyo, Porto Rico.....†	30.15	765.8	81	27.2		E			5		2		E	Showers.		Smooth		Squally	B. F. Woodbury.
Hippolyta, N. 51° 15', W 9° 15'.....*	29.84	757.9	54	12.2		ESE			8		10		E	0	0	Mod'ate	E	Cloudy	
Iron Cross, W. Randall																			
Barque Syringa, E. Lewis																			W. Randall.
																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 14, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

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

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer, Corrected for instrum'tal error and temperature. Inches.	Barometer, Corrected for instrum'tal error and temperature. Millimeters.	Barometer, Reduced to sea-level. Inches.	Barometer, Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.04	763.1				SW			3		3			0	0	Pretty fair.	Dr. Ollive.
Nemours			29.86	758.5	69.3	20.7	73	WNW			1		5			0	0	Cloudy	Metge.
Algiers			29.89	759.3	68.0	20.0	26	NE			0		0			0	0	Clear	Nicolas.
La Calle			29.97	761.2	69.3	20.7	69	NNW			1		3			0	0	Pretty fair.	Fonfrède.
Tunis			29.95	760.7															Jacques.
Sfax			30.04	763.1															Gau
Saida			29.89	759.3															Bernard.
Tebessa			30.01	762.2	65.8	18.8	32	NNE			1		0			0	0	Clear	Watrin.
Geriville					80.4	26.9	40	S			4		0			0	0	Clear	Brugniaux.
Laghouat			29.95	760.6	84.9	29.4	15	S			3		2			0	0	Fair	Suart.
Biskra			29.97	761.3	82.0	27.8	35	NE			1		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS	Barometer, Corrected for instrum'tal error and temperature. Inches.	Barometer, Corrected for instrum'tal error and temperature. Millimeters.	Barometer, Reduced to sea-level. Inches.	Barometer, Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.34	745.2	29.87	758.7	70.0	21.1	56	N			2		5			0.012	0.3		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.20	741.7	29.95	760.7	66.2	19.0	79	SSW	4.3	1.9			10			0.280	7.1		Dr. Wierzbicki.
Eperies	28.99	736.3	29.83	757.7	72.0	22.2	55	N			4		10			0.016	0.40	Hazy	Julius Mikolik.
Gratz	28.67	728.2	29.88	759.0	68.0	20.0	73	NNW			2		5			0.307	7.8		Andreas Rospini.
Hermannstadt	28.43	722.2	29.83	757.7	60.4	15.8	92	E			2		10			0.370	9.40		Prof. A. Gottschling
Kremsmünster, Observatory	28.63	727.1	29.93	760.1	67.8	19.9	62	Calm			0		4			0	0		The Staff.
Lemberg	28.84	732.6	29.78	756.5	71.8	22.1	49	NE			4		5			0.028	0.7		Dr. T. Stanecki.
Pola	29.78	756.5	29.89	759.3	71.6	22.0	48	ENE			2		8			0	0		I.R. Hydrographic Office.
Szathmar	29.40	746.8	29.84	758.0	75.6	24.2	47	NE			3		10			0.039	1.0		Pet. Pancsics, S. J.
Szegedin	29.55	750.5	29.82	757.3	70.9	21.6	56	SW			1		5			0	0		Karl Stancel.
Trieste	29.83	757.6	29.93	760.2	69.6	20.9	79	WNW			1		10			Inap.	Inap.	Thunder-storm.	P. Busin.
Vienna	29.20	741.7	29.93	760.2	72.0	22.2	51	NNW			2		7			0.134	3.4		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 12, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.27	768.8	30.37	771.4	48.0	8.9		E	13	5.8			5			0	0	Blue sky	W. Boswell.
Ardrossan	30.26	768.6	30.28	769.1	57	13.9		ENE			4		0					Misty	G.Carrick.
Armagh, (Observatory)	30.02	762.5	30.25	768.3	55.0	12.8		ENE	12	5.4			3					Misty	S. Call.
Bidston (Liverpool Obs)			30.17	766.3	62.2	16.8		ENE	22	9.8			5					Misty	John Hartnup.
Bolton (Sharples)	29.66	753.4	30.18	766.6	57.7	14.3		ENE					10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.84	757.9	30.23	767.8	55.7	13.2	67	NE			5		9			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	29.99	761.7	83	28.3		NE			3		4					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.04	763.0	30.14	765.5	68.5	20.3		NE			1		7					D. clouds	H. Todd.
Cardington			30.12	765.0	66.4	19.1		NE			1		8					Overcast	John McLaren.
Chatham (School M. E.)	29.99	761.7	30.12	765.0	61.0	16.1		NE			2		0					Blue sky	Sapper W. Gibson, R. E.
Donaghadee	30.24	768.1	30.29	769.4	55	12.8		NE			2		3					D. clouds	J. Mac Gowan.
Dover	30.05	763.3	30.08	764.0	61	16.1		ENE			4		0					Misty	J. Costello.
Falmouth (Observatory)	29.84	757.9	30.07	763.8	52.0	11.1		ESE			3		10					Foggy	The Staff.
Fort Napier, Natal	27.89	708.4	30.10	764.5	78.4	25.8		N			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	86	30.0		Calm			0		8					D. clouds	
Galway (Queen's College)			30.12	765.0	60	15.6		ENE			4		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.87	758.7	29.93	760.2	68.7	20.4		E			3		5					Blue sky	Sr.t. W. Allen.
Glasgow, (Observatory)	30.09	764.3	30.29	769.4	53.3	11.8		NE			4	6c						D. clouds	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.17	766.3	55	12.8		NE			3		2					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.93	760.2	30.10	764.5	68.8	20.4		ENE			3		2					Blue sky	The Staff, for G.B.Airy.
Guernsey	29.80	756.9	30.02	762.5	55	12.8		ENE			2		5					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.20	767.1	30.32	770.1	59	15.0		E			7	3k						Gloomy	M. P. Moyle.
Holyhead	30.13	765.3	30.15	765.8	57	13.9		NE			4		0					Blue sky	John Tilston.
Jersey	29.75	755.6	30.04	763.0	59.9	15.5		ENE			3		0					Blue sky	J. Fisher.
Kew (Observatory)	30.06	763.5	30.10	764.5	66.0	18.9		NE	14	6.3			7					Misty	The Met'g'l Office.
Leicester (Museum)	29.91	759.7	30.17	766.3	61.5	16.4		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.80	756.9	29.88	758.9	68	20.0		N			3		1					Blue sky	A. King.
Nairn	30.26	768.6	30.36	771.1	55	12.8		ENE			5		0					Clear	W. D. Penny.
Nassau, Bahamas			29.85	758.2	80.0	26.7		SW			2		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.02	762.5	30.20	767.1	64.2	17.9		NNE			3		8k		ENE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.65	753.1	30.17	766.3	56.7	13.7		NNE			4–5		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.90	759.4	30.16	766.1	60	15.6		NNE			3		4					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.97	761.2	30.04	763.0	62.0	16.7		ENE			5		6					D. clouds	John Merrifield.
*Roche's Point	30.03	762.7	30.14	765.5	58	14.4		E			6		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.94	760.5	30.10	764.5	56	13.3		SE			2		2					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.41	772.4	50.1	10.1		E	12	5.4			10					Overcast	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.71	754.6	29.78	756.4	74.6	23.7		NE			2		4					D. clouds	Serg't W. H. Lyne.
Sheffield	29.98	761.5	30.26	768.6	57.0	13.9		NE			2		7			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.25	768.3	30.28	769.1	57.3	14.1	60	E			3		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.24	768.1	61.8	16.6		ENE	10	4.5			3					Blue sky	Rev. S. J. Perry.
Strathfield Turgiss	29.89	759.2	30.10	764.5	67.6	19.8		NE			3–5		2					Squally	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.06	763.5	30.08	764.0	64	17.8		SE			4		6					D.clouds	W. Newcombe.
Valencia (Observatory)	30.02	762.5	30.04	763.0	61.0	16.1		E	32	14.3			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.80	756.9	29.84	757.9	74.0	23.3	46	NW	9.5	4.2		8	9			0.29	7.4	Threatening	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.92	760.0	50.0	10.0	81	NW			2		10kn			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			30.35	770.9	48.8	9.3		E			3		10k			0	0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.97	761.2	30.16	766.0	74.7	23.7	56	SSE	15.5	6.9		0	2		ESE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	30.22	767.6	30.21	769.9	50.0	10.0	85	WSW	5	2.2			4			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.37	771.4	50	10.0		N			4	3	0		NE	0	0		J. Youngclause.
North Unst, Shetland I's			30.40	772.1				N			2	2	7		NE	0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 11′, W. 6° 06′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.17	664.7	29.89	759.2	68.4	20.2	91	SE			1	9ck				Inap.	Inap	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.17	766.2	30.21	767.4	63.9	17.7	65	N			2		1						
Fanöe	30.21	767.3	30.23	767.8	70 0	21.1	48	E			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.42	772.6	30.46	773.7	45.0	7.2	80	Calm			0		8						
Thorshavn (Faröe)	30.40	772.1	30.43	773.0	51.1	10.6	81	SW			2		2						
Vestervig	30.16	766.0	30.25	768.4	66.4	19.1	63	N			2		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.9	30.04	762.9	73.4	23	39	NE			2		5kn		E	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.90	759.5	30.00	762.1	82.4	28	51	ENE			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.78	756.3	30.02	762.6	75.6	24.2	39	E			1		6k		SE	0	0		Klein, Commandant.
Avignon, Normal School	29.85	758.3	29.93	760.3	77.0	25	60	N			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.42	747.3	29.95	760.8	73.2	22.9	39	SE			1		5kn		SE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.77	756.2	30.03	762.7	74.3	23.5	40	E			3		2		ESE	0	0	Slightly cld'y	Frère Eugene Marie.
Besançon, Normal School	29.09	738.8	29.95	760.6	72.1	22.3	50	N			1		2		NE	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.67	753.5	29.86	758.5	75.6	24.2	38	ESE			2		2		SSW	0	0	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.10	739.0	30.02	762.5	74.5	23.6	50	N			2		5k			0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.43	747.6	29.97	761.2	71.6	22	63	SE			1	2c			SE	0	0	Slightly cl'dy	M. Gence, Director.
Brest, Naval Observatory	29.71	754.6	29.95	760.7	68.4	20.2	76	SE			1		5		SE	0.157	4.00		Ch. de Kermaree, Dir
Caen, Normal School	29.69	759.1	29.96	761.0	60.8	16	79	NNE			1		5		SE	0	0	Fair	M. Bietrix, Director.
Carcassonne, N. School	29.47	748.6	29.87	758.7	76.6	24.8	31	N			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	29.69	754.2	30.00	761.9	77.0	25.0	42	ESE			3		5		SW	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.40	746.7	29.95	760.8	75.2	24	83	E			2		0			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.58	726.0	29.88	758.9	74.5	23.6	52	NNE			1		5			0	0		Allnard, Director.
Commercy, Normal School	29.15	740.4	29.98	761.6	69.4	20.8	55	E			1		kn	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.85	732.8	29.99	761.8	73.0	22.8	42	S			2		2		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.23	742.4	29.97	761.2	72.0	22.2	62	NW			1		k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.71	754.0	29.91	759.8	74.1	23.4	58	NE			1		5		NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.67	753.5	29.96	761.0	73.8	23.2	41	ESE			2		2		ESE	0.028	0.7	Slightly cld'y	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.98	736.1	29.88	758.9	70.7	21.5	54	W			1		5k	NW	S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.89	759.1	30.00	761.9	69.8	21.0	62	SE			3		2		SE	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.34	745.1	29.93	760.1	74.3	23.5	38	N			1		0			0	0	Clear	Ch. André, Director.
Macon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.66	753.4	29.93	760.1	70.0	21.1	67	WSW			1		1		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.96	735.5	29.97	761.1	70.7	21.5	53	NE			3		8		NE	0	0		Barbier, Director.
Mont-Louis	24.80	629.8	30.03	762.8	56.1	13.4	54	SW	7.4	3.3			0			0	0		M. Cave, for Dr. Fines.
Nica	29.91	759.6	29.94	760.4	69.4	20.8	75	SW			2			S	SW	0	0	Misty	Capt. Boissiere, Director.
Nismes, Normal School	29.72	754.9	29.92	760.0	79.3	26.3	55	SE.			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.82	757.5	29.93	760.2	66.6	19.2	56	SE	11.2	5.0			1	NNW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.52	572.0			49.5	9.7							1		SW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.87	733.2	29.89	759.1	75.4	24.1	39	N.			1		0			0.738	18.75	Clear	M. Tallieu
Puy de Dome (Summit) Obs	25.16	639.0			52.3	11.3	78	E			3		5			0.004	0.1	Misty	Allnard, Director.
Rochefort, Naval Obs'y	29.91	759.6	29.94	760.4	75.6	24.2	53	SSE			2		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	29.92	760.0	30.01	762.2	78.6	25.9	34	SE			1		2		NE	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	29.95	760.7	29.98	761.4	64.8	18.2	70	ENE			3		0			0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.82	757.5	29.99	761.7	76.1	24.5	29	ENE			3		2	E	ENE	0	0		E. Renou, Director.
Tarbes, Normal School	28.87	733.2	29.90	759.4	77.6	25	47	NE											T. Huguet, Director
Toulouse, Observatory	29.24	742.7	29.97	761.1	71.8	22.1	46	SSE			1		2			0.08	2.	Slightly cld'y	B. Baillaud, Dir.
Tours	29.75	755.6	29.95	760.6	75.6	24.2	46	E			2		2	Calm	SE	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.51	749.5	30.00	762.0	74.8	23.8	34	E			3					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.20	741.6	29.88	759.0	75.2	24	60	N			1		2		NNW	0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	80.6	27										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.71	754.7			77.5	25.3	39	ENE			1		2		ENE	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	30.09	764.2	30.11	764.8	53.6	12.0	93	E	1.3	0.6			10n			0	0		Marc Dechevrens, S.J.
																0 488	12.4	Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,360 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.17	740 9	30.03	762.8	70.3	21.3	58	E			6		6n	NE		0.012	0.3	Thunder-storm.	Prof. Dr. Hoh.
Berlin	29.91	759.6	30.07	763.8	76.3	24.6	43	N			2		2			0	0		Prof. Dr. Arndt.
Breslau	29.51	749.5	30.04	763 0	73.0	22.8	45	NNE			3		3			0.187	4.74		Royal University Obs'y
Carlsruhe	29.57	751.1	29.99	761.7	68.7	20.4	69	ESE			1		10	E		0.154	3.9	Thunder-storm.	Albert Senz.
Cassel	29.47	748 5	30.08	764.0	75.6	24.2	37	ENE			3		4	NE		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.70	754.4	30 07	763.7	75.0	23.9	33	E			2		5			0	0		Physical Society.
Friedrichshafen	28.56	725.4	29.95	760.8	66.9	19.4	58	ESE			2		7	SE*		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.10	764.6	30.17	766.4	66.9	19.4	71	NE			4		3			0	0		Dr. Reinhold Kleeman.
Kiel	30.19	766.9	30.21	767 3	63.9	17.7	62	NE			3		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.04	762.9	30.12	765.0	60.6	15.9	83	NW			3		6	E		0	0		Prof. E. Luther.
Köslin			30.13	765.3	62.8	17.1		N			2		1			0	0		H. Müller.
Leipsic Observatory	29 70	754.3	30.11	764.7	67.6	19.8	67	NE			2		8			0	0	Hazy	Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29.91	759.7	30.14	765.5	67.5	19.7	72	NNE			3		1s	NNE		0	0		Dr. Assmann.
Memel	30.04	762.9	30.08	764 1	74.1	23.4	53	E			0–1		7k						Reinbrecht & Issermann
Munich	28.19	716.1	30.06	763.4	65.3	18.5	57	E			4		8	E		0.173	4.4		Dr. C. Lang.
Neufahrwasser	30.12	765.1	30.14	765.5	52.2	11.2	93	NNW			3		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.47	748 6	30.00	762.0	73.0	22.8	52	NE			1		9			0.012	0.3		Reallehrer Dicknether.
Posen	29.76	756.0	30.04	763.1	72.3	22 4	44	E			4		1			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.48	748.8	30.01	762.3	70.9	21.6	69	ENE			3		9	E		0	0		Imp. University Observatory.
Stuttgart	29.06	738.0	29.93	760.1	66.6	19.2	76	NE					9	N		0.213	5.4		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.53	724.6	30.11	764.7	67.1	19.5	69	NNE	3.4	1.5		ck	8n	E	E	0	0		Reallehrer J. Hopfner.
Wustrow	30.21	767.2	30.23	767.7	62.2	16.8	69	NE			3		2s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Fr ıdrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.38	746.3	29.77	756.1	69 1	20.6		NE			3.0		5					⅜ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.61	752 0	29.66	753.3	84.0	28.9	79	SW					3	SW		0	0	Misty	
Deesa	29.13	740.0	29.59	751.5	100.2	37.9	19	W	13.3	5 9			1		WNW	0	0	D. clouds	
Bombay	29.72	754.9	29.76	755.9	85.5	29.7	72	WNW	12	5.4			0			0	0	Blue sky	
Poona (Yarrowda)	27.87	707.9	29.68	753.8	89.7	32.1	40	WNW	23	10.3			0			0	0	Blue sky	
Belgaum	27.23	691 7	29.75	755.6	78.8	26.0	68	W					10			0	0	Blue sky	
Lahore	28 86	733 2	29.59	751.5	90.1	32.3	52	Calm	2.1	0.9			3			0.78	19.8	D. clouds	
Roorkee	28.81	731.7	29.68	753 9	90.8	32.7	25	W	4	1.8			6			0	0	Squally	
Agra	29.02	737.0	29.56	750.9	92.6	33.7	27	NE	5.5	2.5			0			0	0		
Nagpur	28.55	725.2	29 55	750 4	101.9	38.8	14	W	4.3	1.9			4	W		0	0	D. clouds	
Jubbulpore	28.24	717.2	29.54	750.3	100 3	37.9	14	NW	3.5	1.6			3			0	0	D. clouds	
Lucknow	29.18	741.2	29.54	750.4	99.4	37.4	20	SSW	2.5	1.1			4	ENE		0	0	D. clouds	
Allahabad	29.21	742.0	29.51	749 6	97.5	36.4	29	NE	1.7	0.8			2			0	0	D. clouds	
Patna	29.38	746 1	29.55	750 6	95.4	35.2	46	NNE	1 8	0.8			6	NNE	NE	0.14	3.6	D. clouds	
Hazaribagh	27.58	700.4	29.52	749.7	92.3	33.5	26	NE	4.1	1.8			4					Raining	
Cuttack	29.55	750.4	29.63	752.5	89.9	33.2	62	SSW	8.7	3.9			5			0	0	D. clouds	
Calcutta (Alipore)	29.62	752 4	29.64	752.9	85.7	29 8	73	SSW	7.0	5.1			4	S		0	0	D. clouds	
Goalpara	29.22	742.2	29.62	752 3	85.4	29.7	73	S	2.5	1.1			8		W	0.37	9.4	Thunder	
Chittagong	29.55	750 6	29.64	752.9	84.4	29.1	81	WSW	5.2	2.3			0			0	0		
Sibsagar	29.38	746.2	29.71	754 7	79.1	26.2	88	ENE	2.3	1.0			10	W	W	0.04	1.0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.51	749.6	29.92	759.0	72.1	22.3	46	SW	1.8	0.8			9			0.079	2.0		Prof. Giovanni Clodig.
Milan	29.38	746.3	29.88	759.0	74.5	23.6	45	SW	4.9	2.2			2			0.028	0.7		Prof. Schiaparelli.
Padua	29.81	757.2	29.92	759.9	72.1	22.3	56	SW	3.8	1.7			5			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.02	737.0	29.91	759.8	73.0	22.8	44	S	2.5	1.1			1			0.028	0.7		Prof. P. F. Denza.
Genoa	29.76	755.8	29.95	760.6	66.6	19.2	61	SW	2.5	1.1			2	NE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.06	712.8	29.96	760.9	70.5	21.4	41	NE			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.88	758.9	29.93	760.1	65.7	18.7	69	NW	11.9	5.3			9	NE		0	0		Prof. Luigi Guidi.
Florence	29.67	753.7	29.93	760.1	66.2	19.0	80	W			2		9	N		0.047	1.2		Cav. F. Meucci.
Leghorn	29.88	758.9	29.96	761.0	66.0	18.9	76	NW	3.8	1.7			4			0	0		Prof. P. Monte.
Rome	29.71	754.6	29.88	759.0	72.1	22.3	55	WSW	9.4	4.2			1			0.012	0.3		Prof. P. S. Ferrari
Lecce	29.58	751.4	29.84	757.5	66.2	19.0	63	NNW	9.4	4.2			3	N		0.437	11.1		Prof. C. De Giorgi.
Cosenza	28.97	735.8	29.84	758.0	69.3	20.7	67	SW	8.1	3.6			2			0	0		Prof. D. Conti.
Cagliari	29.74	755.5	29.93	760.3	66.7	19.3	67	S			2		1	E		0.559	14.2		Prof. A. Pacinotti.
Palermo	29.69	754.0	29.94	760.4	65.8	18.8	56	NNW	12.5	5.6			6			0.346	8.8		Prof. G. Cincciatore.
Syracuse	29.80	757.0	29.84	758.0	65.1	18.4	61	NE	3.8	1.7			4	NNE		0.051	1.3		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.36	745.7	29.87	758.7	68.0	20.0	57	SSW	1.8	0.8			3	SW		0.366	9.3		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					57.3	14.1	63	NNE	5.5	2.4			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y					61.9	16.6	60	NNE	4.7	2.1		ck	6s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.75	755.6	29.95	760.7	60.5	15.8	58	WNW	8.2	3.7		0	10s			0	0	Covered	The Staff.
Wakayama	29.78	756.4	29.85	758.2	60.6	15.9	44	N	9.4	4.2			0			0	0	Clear	
	29.91	759.7	29.96	761.0															

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima	24.94	633.4	29.96	761.0	54.5	12.5	35	SW			1	0	0			0	0	Clear	R. Banda, C. E.
Guadalajara	23.58	598.8			59.9	15.5	44	Calm	0	0		s	0	NNW		0	0	Clear	Prof. L. Perez.
Guanaxuato	24.32	617.7	29.92	760.0	63.1	17.3	60	NW			2	1c	0	NE		0	0	Blue sky	Vicente Fernandez.
Leon	29.57	751.0	29.82	757.5	69.6	20.9	68	NW			2	2cs	0	SW		0	0	Clear	Prof. M. Leal.
Mazatlan	22.98	583.8	29.86	758.5	59.5	15.3	62	Calm	0	0		0	0			0	0	Fine	F. Quijano, C. E.
Mexico, Central Observatory	23.87†	606.3†			70.9	21.6	30	E			3	1c	0	SE		0	0	Clear	The Staff
Morelia	23.85	605.7	29.79	756.7	62.4	16.9	43	Calm			0	0	0			0	0	Hazy	M. Fena, M. D.
Pabellon (Aguascalientes)	23.38	593.9	30.15	765.8	52.5	11.4	48	Calm	0	0		1ck	0	E		0	0	Clear	M. V. de Leon, M. E.
Puebla (Catholic Institute)	24.11	612.3	29.97	761.2	63.7	17.6	29	E			1	2	0	S		0	0	Clear	Prof. P. Spina.
San Luis Potosi	29.72	754.9	29.73	755.2	78.8	26.0	86	SE			1	3	0	NW		0	0	Hazy	G. Barroeta, M. D.
Tiacotalpam																			Prof. M. M. Chazaro.
Vera-Cruz	22.48	571.1	30.00	762.1	59.0	15.0	60	Calm			0	1c	0	Calm		0	0	Clear	Prof. J. Rossell.
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,660.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft., Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.09	764.2	30.09	764.2	72.3	22.4		ENE			4					0	0		
Groningen	30.11	764.9	30.17	766.3	66.0	18.9		ENE								0	0		
Helder	30.14	765.6	30.14	765.6	54.7	12.6		NE			4					0	0		
Hellevoetsluis	30.13	765.4	30.13	765.4	71.8	22.1	63	ENE			2					0	0		
Utrecht	30.07	763.6	30.11	764.8	71.8	22.1	55	NNE			3		2			0	0	L'tly cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.22	767.5	30.27	768.9	59.0	15.0	58	WNW	5.4	2.4			2			0	0		
Brönö	30.24	768.2	30.28	769.2	46.4	8.0	78	SW	9	4			9			0	0		
Christiania	30.06	763.5	30.20	767.1	67.5	19.7	51	SSW	13	6			10			0.004	0.1		
Tromsö	29.99	761.8	30.05	763.2	41.4	5.2	69	SW	7	3			9			0.303	7.7		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	29.46	748.3	29.67	753.7	62.6	17.0	85	NNW			6		2			0.669	17.0	Raining	Dr. J. A. Sampaio.
Campo Major	28.89	733.8	29.88	758.9	62.2	16.8	78	SSW	4.9	2.2			9			0.449	11.4		Dr. A. M. R. dos Santos
Funchal (Madeira)	29.75	755.7	29.84	757.9	64.4	18.0	68	W	9.8	4.4			10			0.150	3.8		Capt. D. A. de Cunha.
Lisbon Observatory	29.50	749.4	29.86	758.4	63.7	17.6	75	SSW	19.9	8.9			7			0.953	24.2		The Staff.
Ponta Delgada (Azores)	29.54	750.2	29.61	752.0	59.0	15.0	80	NW	24.2	10.8			10			0.394	10.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Mossamedes, Benguela			29.93	760.2	69.4	20.8		W			1		0			1	W		Blue sky	C. J. de Sousa Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds			30.25	768.3	79.2	26.2		NE			3		2		NE	2	NE		D. clouds	Antonio Sarmento, Q. M
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Benguela, Benguela			29.93	760.1	75.6	24.2		WNW			3		3		W	2	W		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.04	763.0	82.4	28.0		E			3		0			1			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	30.05	763.2	30.07	763.7	48.0	8.9	52	WSW	4	2			10						Capt. Sselliwerstow.
Astrakhan	29.91	759.6	29.82	757.5	75.6	15.2	50	S	7	3			3s						Capt. Wisganow.
Barnaul	29.27	743.5	29.76	755.9	59.4	20.8	61	NW	16	7			9						Meteorological Obs.
Dorpat	29.95	760.8	30.19	766.8	69.4	20.8	36	NE	2	1			6cs						Prof. Dr. Weihrauch.
Ekaterinburg	29.20	741.7	30.17	766.2	53.4	11.9	23	N	4	2		7c						Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.89	759.2	30.15	765.9	66.2	19.0	26	NNE	11	5			8					Solar corona	Physical Cabinet.
Kertch	29.90	759.5	29.92	760.0	58.6	14.8	96	S	4	2			1						Lagorio.
Kieff	29.25	743.0	29.87	758.6	64.6	18.1	67	ESE	11	5			8cks						Physical Cabinet.
Krotkowo*	29.61	752.0	30.06	763.4	76.3	24.6	29	NNE	9	4			6						Cand. Fatjanow.
Lugan	29.65	753.1	29.85	758.1	75.4	24.1	43	NNW	4	2			6						Meteorological Obs.
Moscow	29.59	751.5	30.12	765.0	70.7	21.5	39	SE	7.8	3.5			5ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.88	758.9	29.95	760.7	66.6	19.2	71	S	9	4			8cs						Kurdakof.
Nikolaievsk, on the Amoor	29.74	755.5	29.83	757.7	33.8	1.0	89	E	4	2			10n						
Nukuss	29.60	751.7	29.82	757.3	90.5	32.5	12	NNE	4	2			6ks						
Orenburg																			
Pekin (China)	29.84	757.9	29.98	761.5	69.4	20.8	42	SW	4	2			1k						Physical Observatory.
St. Petersburg	30.16	766.0	30.17	766.4	71.1	21.7	36	SSE	7	3			2cs; k						Central Physical Obs.
Tashkend	28.35	720.1	29.84	757.9	81.1	27.3	36	Calm	0	0			0						Teich, A. M.
Tiflis	28.43	722.0	29.78	756.4	74.3	23.5	67	Calm	0	0			9ks						Physical Observatory.
Vladivostock																			
Warsaw	29.57	751.0	29.97	761.3	71.8	22.1	49	NE	7	3			5ks						Astronomical Obs.
Wilna	29.68	753.8	30.08	763.9	76.3	24.6	38	E	2	1			5						Astronomical Obs.
Yeniseisk	29.41	747.0	29.69	754.2	52.9	11.6	65	S	7	3			4						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.86	758.4	29.96	761.0	68.0	20	46	SW	6.0	2.69			0			0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.79	756.7	29.85	758.1	84.6	29.2	71	S	2.0	0.88		0	0			0	0	Clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.97	685.1			69.1	20.6	45	S	16.5	7.30			3			0	0	Light clouds	Domingo Martin y Perez
Madrid, Royal Observatory	27.72	704.2	29.89	759.2	68.7	20.4	49	SW	2.7	1.22		0	2			0	0	Clouds	The Staff.
Murcia, Met. Obs'y	29.80	757.0	29.95	760.7	75.2	24.0	53	ENE	5.8	2.58		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.89	733.8	29.77	756.1	63.1	17.3	65	SW	21.0	9.4			9			0.768	19.5	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.77	756.1	29.83	757.7	78.8	26.0	83	Calm	0	0		1c	1k	WSW	SE	0.292	5.9	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.82	757.4	29.87	758.7	85.5	29.7	60	E	6.6	3.3			1s			0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.86	758.4	29.96	760.9	68.9	20.5	59	S	9.6	4.3		0	5		SW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.6	30.00	761.9	79.5	26.4	91	SE	0	0		3s	2k	SE	SE	0.639	1.00	Clear	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.10	764.5	30.14	765.5	51.8	11.0	.....	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Umea	30.10	764.5	30.15	765.8	68.7	20.4	55	NW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Hernosand	30.23	767.8	30.28	769.1	57.9	14.4	53	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	30.03	762.8	30.21	767.3	69.1	20.6	26	SW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Wisby	30.10	764.6	30.16	766.1	50.0	10.0	67	NNE	.....	.....	2	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.10	764.6	30.19	766.8	72.7	22.6	33	SSW	5.1	2.3	.....	.....	3	.....	NNW	0	0	.....	Nils Ekholm.

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

Swedish Naval Series.																Sea or swell. Height scale 0–9	Direction from—	Rain-fall.		
Barque Australia, N. 49° 09′, W. 9° 38′	.....	.....	29.91	759.7	52.9	11.6	95	E	.....	.....	4	.....	10	.....	.....	.....	.....	.....	Raining.	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.56	725.4	29.95	760.8	64.8	18.2	58	N	.....	.....	3	.....	1	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.37	720.6	29.97	761.1	67.5	19.7	62	NE	.....	.....	2	.....	3	.....	.....	0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.4 mm.; Thermometer, +1.9 Cent. Relative Humidity, +1 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.64	757.8	68.9	20.5	54	ENE	12	5.5	.....	.....	4	.....	SW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.87	758.7	64.6	18.1	.....	E	.....	.....	1	.....	10	.....	.....	0	0	Covered	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.82	757.5	71.8	22.1	71	NE	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	40.8	4.9	.....	NE	6	2.7	.....	.....	10ks	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.09	764.3	30.15	765.8	40.5	4.7	69	N	16	7.2	.....	.....	10s	.....	.....	0.31	7.9	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.94	760.5	29.98	761.5	38.0	3.3	77	N	24	10.7	.....	.....	10s	.....	.....	0.155	3.94	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	30.09	764.3	30.30	769.6	46.0	7.8	51	NE	.....	.....	1	0	1s	.....	.....	0.020	0.51	Clear.	James Smith, M. A
Dalhousie, N. B.	.....	.....	.....	.....	41.3	5.2	.....	N	.....	.....	2	.....	10ks	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	30.27	768.8	30.29	769.4	39.5	4.2	86	N	10	4.5	.....	.....	10n	.....	.....	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	30.09	764.3	30.16	766.1	42.0	5.6	65	NE	9	4.0	.....	.....	10s	.....	.....	0.075	1.91	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.99	736.3	29.78	759.4	63.0	17.2	83	S	2	0.9	.....	2c	0	S	.....	0	0	Hazy	James Stewart.
Granton, Ontario	29.26	743.2	30.38	771.6	45.0	7.2	61	N	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.79	756.7	29.92	760.0	42.0	5.6	74	N	16	7.2	.....	.....	10k	.....	.....	0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.97	761.2	30.35	770.9	45.7	7.6	72	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	30.00	762.0	30.34	770.6	44.7	7.1	67	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.82	757.4	29.86	758.4	35.3	1.8	95	NE	3	1.3	.....	.....	10k	.....	.....	0.03	0.8	Overcast	C. H. Rigby.
Montreal, Quebec	30.12	765.0	30.32	770.1	43.8	6.6	55	N	11	4.9	.....	1cs	0	.....	.....	0.04	1.0	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	30.51	774.9	30.54	775.7	49.0	9.4	57	S	.....	.....	1	2c	0	.....	.....	.....	0	Clear.	J. R. Nason.
Norwood, Ontario	29.64	752.8	30.35	770.9	45.0	7.2	47	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.73	755.1	30.44	773.2	44.3	6.8	68	E	10	4.5	.....	0	0	.....	.....	.....	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.62	752.3	30.38	771.6	48.7	9.3	36	E	.....	.....	1	3k	0	.....	.....	0	0	Fair.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.64	752.8	30.34	770.6	45.9	7.7	92	N	10	4.5	.....	0	0	.....	.....	0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.69	754.1	30.35	770.9	48.9	9.4	62	N	8	3.6	.....	0	0	.....	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.97	761.2	30.30	769.6	40.0	4.4	64	E	.....	.....	1	0	2s	.....	.....	0.07	1.8	Fair.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.97	761.2	30.44	773.2	42.0	5.6	45	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.	W. H. McIntyre.
St. John, N. B.	29.92	760.0	30.09	764.3	40.0	4.4	77	NE	17	7.6	.....	.....	10s	.....	.....	0	0	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.69	754.1	30.42	772.7	47.1	8.4	48	E	14	6.3	.....	0	0	.....	.....	0	0	Clear.	K. Stewart.
Stratford, Ontario	29.06	738.1	30.37	771.4	43.0	6.1	58	E	5	2.2	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.83	757.7	29.88	758.9	36.0	2.2	94	NE	4	1.8	.....	.....	10n	.....	.....	0.02	0.5	Drizzling	T. C. Hill, C. E.
Toronto, Ontario	30.04	762.2	30.40	772.1	45.9	7.7	43	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear.	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.27	743.4	30.36	771.1	48.5	9.2	49	N	10	4.5	.....	0	0	.....	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.94	760.5	30.01	762.2	42.1	5.6	77	N	12	5.4	.....	.....	10s	.....	.....	0.02	0.5	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.75	755.6	30.01	762.2	39	3.9	82	S	.....	.....	.....	.....	10	.....	.....	.....	.....	Hazy	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	29.88	758.9	41.0	5.0	.....	NE	.....	.....	3	.....	.....	.....	.....	0.12	3.0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., for 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.20	767.1	30.28	769.1	47	8.3	48	NE	8	3.6		5k	0	NE		0.05	1.3	Fair	
Alpena, Michigan	29.80	756.9	30.47	773.9	45	7.2	53	E	12	5.4		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.82	732.0	29.92	760.0	70	21.1	71	E	6	2.7		5c	Haze		Calm	0	0	Fair	
Atlantic City, New Jersey	30.17	766.3	30.18	766.6	52	11.1	66	NW	12	5.4		5k	0	NW		0	0	Fair	
Augusta, Georgia	29.84	757.9	30.03	762.7	72	22.2	80	NE	6	2.7		0	8s		N	0	0	Fair	
Baltimore, Maryland	30.18	766.6	30.23	767.8	52	11.1	47	N	12	5.4		0	2ks		Calm	0	0	Clear	
Barnegat, New Jersey	30.15	765.8	30.18	766.6	51	10.6	65	NE	20	8.9		8k	0	NE		0	0	Fair	
Bismarck, Dakota	27.93	709.4	29.79	756.7	70	21.1	57	SE	20	8.9		5c	0	SE		0	0	Fair	
Boerne, Texas	28.42	721.9	29.68	753.9	68	20.0	90	SE	3	1.3			10ks		SE	0	0	Cloudy	
Boise City, Idaho	27.11	688.6	30.07	763.8	37	2.8	81	W	4	1.8		2k	0	W		0	0	Fair	
Boston, Massachusetts	30.06	763.5	30.22	767.6	48	8.9	43	NE	12	5.4		0	5s		NW	0.32	8.1	Fair	
Brackettville, Texas	28.68	728.5	29.69	754.1	69	20.6	90	E	6	2.7		0	8ks		E	0	0	Fair	
Breckenridge, Minnesota	28.93	734.8	29.89	759.2	60	15.6	82	SE	32	14.3		2ck	0	S		0.32	8.1	Fair	
Brownsville, Texas	29.73	755.1	29.77	756.1	79	26.1	87	E	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.61	752.1	30.33	770.4	45	7.2	53	E	11	4.9		0	0			0	0	Clear	
Burkes, Arizona					51	10.6	34	W			1	0	0			0	0	Clear	
Burlington, Vermont	29.99	761.7	30.29	769.4	44	6.7	60	N	9	4.0		5ck	0	N		0.05	1.3	Fair	
Cairo, Illinois	29.75	755.6	30.14	765.5	64	17.8	48	NE	11	4.9		0	Sm'e			0	0	Clear	
Campo, California	27.36	694.9	29.93	760.2	33	0.6	89	W	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.09	764.3	30.09	764.3	60	15.6	60	NE	23	10.3		0	8s		N	0	0	Cloudy	
Cape Henry, Virginia	30.13	765.3	30.15	765.8	56	13.3	63	NE	17	7.6		5k	Haze	NE	Calm	0	0	Fair	
Cape Lookout, N. Carolina	30.05	763.3	30.07	763.8	62	16.7	51	NE	29	13.0		10k	0	W		0.19	4.8	Cloudy	
Cape May, New Jersey	30.14	765.5	30.17	766.3	53	11.7	53	N	9	4.0		0	0			0	0	Clear	
Castroville, Texas	29.06	738.1	29.73	755.1	70	21.1	90	SW	1	0.4		0	5s		S	0	0	Fair	
Cedar Keys, Florida	29.83	757.7	29.86	758.4	71	21.7	90	NE	9	4.0			10ks		NE	0.13	3.3	Cloudy	
Charleston, South Carolina	29.92	760.0	29.97	761.2	70	21.1	80	NE	16	7.2		0	5s		NE	0	0	Fair	
Charlotte, North Carolina	29.25	742.9	30.06	763.5	59	15.0	54	NE	12	5.4			10s;sme		Calm;E	0	0	Cloudy	
Chattanooga, Tennessee	29.22	742.2	30.00	762.0	66	18.9	50	N	11	4.9		1cs	0	Calm		0	0	Clear	
Cheyenne, Wyoming	23.84	605.5	29.78	756.4	47	8.3	77	N	14	6.3			10s		S	0	0	Cloudy	
Chicago, Illinois	29.62	752.3	30.32	770.1	52	11.1	73	SE	12	5.4		8c	0	NW		0	0	Fair	
Chincoteague, Virginia	30.16	766.1	30.18	766.6	51	10.6	86	N	13	5.8			Fog		Calm	0	0	Foggy	
Cincinnati, Ohio	29.63	752.6	30.29	769.4	51	10.6	56	NE	6	2.7		4c	0	Calm		0	0	Fair	
Cleveland, Ohio	29.60	751.8	30.34	770.6	50	10.0	65	N	8	3.6		0	0			0	0	Clear	
Coleman City, Texas	28.13	714.5	29.72	754.9	71	21.7	80	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.43	747.5	30.29	769.4	48	8.9	49	NE	6	2.7		0	0			0	0	Clear	
Concho, Texas	27.96	710.2	29.57	751.1	68	20.0	84	E	2	0.9		0	0			0	0	Clear	
Corsicana, Texas	29.45	748.0	29.90	759.4	69	20.6	80	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.62	752.3	30.26	768.6	55	12.8	62	E	12	5.4		1c	0	W		0	0	Clear	
Dayton, Washington T'y					38	3.3	90	E			1		10s		SW	0.03	0.8	Cloudy	
Deadwood, Dakota	25.21	640.3			50	10.0	65	Calm	0	0			Fog		Calm	0	0	Foggy	
Decatur, Texas	28.78	731.0	29.90	759.4	74	23.3	72	SE	16	7.2		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.17	766.3	30.19	766.8	54	12.2	67	N	17	7.6		2k	0	N		0	0	Fair	
Denison, Texas	29.14	740.1	29.90	759.4	72	22.2	76	E	4	1.8		0	0			0	0	Clear	
Denver, Colorado	24.54	623.3	29.76	755.9	46	7.8	40	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.26	743.2	30.13	765.3	59	15.0	70	SE	6	2.7		0	0			0.12	3.0	Clear	
Detroit, Michigan	29.68	753.9	30.38	771.6	42	5.6	74	NE	8	3.6		0	0			0	0	Clear	
Dodge City, Kansas	27.32	693.9	29.51	749.5	64	17.8	73	SE	16	7.2		0	0			0.07	1.8	Clear	
Dubuque, Iowa	29.58	751.3	30.28	769.1	56	13.3	57	E	6	2.7		8ck	Haze	NE	Calm	0.02	0.5	Fair	
Duluth, Minnesota	29.54	750.3	30.24	768.1	43	6.1	83	NE	4	1.8		5cs;k	0	Calm;SW		0.05	1.3	Fair	
Eagle Pass, Texas	29.04	737.6	29.74	755.4	72	22.2	85	E	4	1.8		0	0			0	0	Clear	
Eastport, Maine	30.01	762.2	30.08	764.0	41	5.0	65	N	22	9.8		5c	5s	N	N	Inap.	Inap.	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.60	751.8	30.33	770.4	48	8.9	63	Calm	0	0		0	0			0	0	Clear	
Escanaba, Michigan	29.76	755.9	30.42	772.7	54	12.2	55	SE	4	1.8		0	0			0	0	Clear	
Florence, Arizona	28.38	720.8	29.98	761.5	47	8.3	61	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.90	632.4	30.35	770.9	34	1.1	52	E	1	0.4		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.75	704.8	29.55	750.6	48	8.9	77	NW	14	6.3			10s		NW	0	0	Cloudy	
Fort Custer, Montana	26.74	679.2			43	6.1	91	N	6	2.7			10n		N	1.70	43.2	Light rain	
Fort Davis, Texas	25.13	638.3	29.99	761.7	61	16.1	66	W	2	0.9		0	0			0	0	Clear	
Fort Elliot, Texas	26.88	682.7	29.01	736.8	66	18.9	69	SE	16	7.2		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.42	747.3	29.93	760.2	74	23.3	59	E	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.08	637.0	29.88	758.9	44	6.7	16	N	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.63	727.2	29.85	758.2	68	20.0	74	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.14	689.3			46	7.8	85	N	14	6.3			10s		NE	0.23	5.8	Cloudy	
Fort McKavett, Texas	27.61	701.3	29.44	747.8	68	20.0	79	SE	6	2.7		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.70	729.0	29.75	755.6	75	23.9	68	E	6	2.7		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.88	708.1			54	12.2	73	W	12	5.4		5c	0	Calm		0	0	Fair	
Fort Verde, Arizona					37	2.8	63	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.78	756.4	29.82	757.4	73	22.8	90	NE	10	4.5		9	2ks		E	0.63	16.0	Clear	
Grand Haven, Michigan	29.74	755.4	30.41	772.4	52	11.1	54	NE	7	3.1		5c	0	Calm		0	0	Fair	
Helena, Montana					36	2.2	90	W	5	2.2			10s		Calm	Inap.	Inap.	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.47	748.5	30.26	768.6	53	11.7	61	NE	10	4.5		5c	0	N		0	0	Fair	
Indianola, Texas	29.81	757.2	29.84	757.9	75	23.9	81	NE	15	6.7		0	0			0	0	Clear	
Jacksboro, Texas	28.81	731.8	29.88	758.9	78	25.6	73	SE	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	29.85	758.2	29.88	758.9	76	24.4	82	NE	8	3.6		5cs;k	0	NE		0.49	12.4	Fair	
Keokuk, Iowa	29.52	749.8	30.13	765.3	58	14.4	64	E	17	7.6		6c;cs	0	Calm		0	0	Fair	
Key West, Florida	29.79	756.7	29.83	757.7	79	26.1	78	S	6	2.7		5cs	0	S		0	0	Fair	
Kittyhawk, North Carolina	30.14	765.5	30.16	766.1	58	14.4	53	NE	19	8.5		8k	0	NE		0	0	Cloudy	
Knoxville, Tennessee	29.09	738.9	30.08	764.0	61	16.1	40	NE	6	2.7		2cs	Haze	Calm		0	0	Fair	
La Crosse, Wisconsin	29.51	749.5	30.24	768.1	56	13.3	63	SE	8	3.6		0	0			0.59	15.0	Clear	
La Mesilla, New Mexico	25.97	659.6	30.12	765.0	46	7.8	33	W	1	0.4		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.19	741.4	29.99	761.7	72	22.2	54	SE	6	2.7		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.65	753.1	29.96	761.0	71	21.7	62	NE	8	3.6		5ck	0	Calm		0	0	Fair	
Los Angeles, California	29.65	753.1	30.00	762.0	48	8.9	93	NE	4	1.8		0	Fog		NE	0	0	Fair	
Louisville, Kentucky	29.63	752.6	30.20	767.1	53	11.7	48	NE	17	7.6		8c;cs	0	Calm		0	0	Fair	
Lynchburg, Virginia	29.54	750.3	30.22	767.6	58	14.4	37	NE	8	3.6		0	Haze		Calm	0	0	Clear	
Madison, Wisconsin	29.30	744.2	30.29	769.4	52	11.1	60	E	15	6.7		5cs	0	NW		0	0	Fair	
Marquette, Michigan	29.68	753.9	30.40	772.1	48	8.9	63	SE	6	2.7		5c	0	SE		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.23	717.0	29.93	760.2	66	18.9	89	Calm	0	0		0	0			0	0	Clear	
Memphis, Tennessee	29.65	753.1	29.98	761.5	69	20.6	52	NE	10	4.5		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.62	752.3	30.37	771.4	48	8.9	63	E	11	4.9		5ck	8s	W	Calm	0	0	Cloudy	
Mobile, Alabama	29.85	758.2	29.89	759.2	72	22.2	76	NE	5	2.2		5c	0	E		0.12	3.0	Fair	
Montgomery, Alabama	29.73	755.1	29.95	760.7	72	22.2	85	E	3	1.3		5k	0	E		0	0	Fair	
Morgantown, West Virginia	29.24	742.7	30.24	768.1	53	11.7	54	NE	4	1.8		0	Haze			0	0	Clear	
Mt Washington, N. H.	23.75	603.2	30.11	764.8	17	— 8.3	83	NE	14	6.3			10ks		NE	0.94	23.9	Cloudy	
Nashville, Tennessee	29.53	750.0	30.05	763.3	65	18.3	49	N	7	3.1		0	0			0	0	Clear	
New Haven, Connecticut	30.10	764.5	30.22	767.6	48	8.9	70	NE	12	5.4			10s		NE	0	0	Cloudy	
New London, Connecticut	30.16	766.1	30.21	767.3	50	10.0	58	NE	8	3.6		1ck	0	W		0.03	0.8	Clear	
New Orleans, Louisiana	29.78	756.4	29.84	757.9	74	23.3	81	NE	16	7.2		2cs	5s	Calm	NE	0.24	6.1	Fair	
Newport, Rhode Island	30.14	765.5	30.19	766.8	47	8.3	55	N	9	4.0		10k	0	NE		0.12	3.0	Cloudy	
New River, North Carolina																			
New York, New York	30.04	763.0	30.22	767.6	51	10.6	72	NE	10	4.5		8k	0	NW		0	0	Fair	
Norfolk, Virginia	30.11	764.8	30.17	766.3	57	13.9	58	NE	10	4.5		2ck	Haze	NW	Calm	0	0	Fair	
North Platte, Nebraska	26.97	685.0	29.42	747.3	67	19.4	55	S	26	11.6		2k	8ks	S	S	0	0	Threatening	
Olympia, Washington Ter.	30.04	763.0	30.08	764.0	46.5	8.1	96	N	1	0.4			10n		SW	0.07	1.8	Light rain	
Omaha, Nebraska	28.88	733.5	29.93	760.2	70	21.1	61	SE	16	7.2		0	0			0.02	0.5	Clear	
Oswego, New York	30.03	762.7	30.36	771.1	43	6.1	67	NE	12	5.4		0	0			0	0	Clear	
Pembina, Dakota	28.95	735.3	29.74	755.4	63	17.2	67	S	21	9.4		2ck	2s	S	S	0	0	Fair	
Pensacola, Florida	29.87	758.7	29.90	759.4	71	21.7	80	NE	10	4.5		7cs	0	NE		0.62	15.7	Fair	
Philadelphia, Pennsylvania	30.16	766.1	30.21	767.3	50	10.0	58	NE	14	6.3		8k	Haze	NW	Calm	0	0	Cloudy	
Phœnix, Arizona	28.73	729.7	30.54	775.7	50	10.0	58	E	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	17.61	447.3	29.82	757.4	17	— 8.3	56	SW	36	16.1		0	0			0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.86	606.0	29.63	752.6	32	0.0	79	NW	6	2.7		0	2s		Calm	0.01	0.3	Fair	
Pittsburg, Pennsylvania	29.47	748.5	30.30	769.6	46	7.8	69	NE	4	1.8		Haze	Haze	Calm	Calm	0	0	Lt. haze	
Port Huron, Michigan	29.70	754.4	30.38	771.6	45	7.2	68	N	9	4.0		0	0			0	0	Clear	
Portland, Maine	30.14	765.5	30.19	766.8	47	8.3	48	N	16	7.2		0	0			0.07	1.8	Clear	
Portland, Oregon	30.05	763.3	30.12	765.0	46	7.8	92	S	2	0.9			10n		NW	0.29	7.4	Light rain	
Portsmouth, North Carolina					62	16.7	56	NE	27	12.1			10s		Calm	0	0	Cloudy	
Prescott, Arizona	24.63	625.6	29.96	761.7	30	— 1.1	89	S	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	29.79	756.7	29.80	756.9	79	26.1	74	NE	5	2.2		2c;k	0	Calm;S		0.09	2.3	Clear	
Red Bluff, California	29.69	754.1	30.06	763.5	46.0	7.8	84	NW	3	1.3		0	5s			0	0	Fair	
Rio Grande City, Texas	29.60	751.8	29.81	757.2	74	23.3	81	SE	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.69	754.1	30.33	770.4	45	7.2	61	NE	9	4.0		1c	0	NE		0	0	Clear	
Roseburg, Oregon	29.55	750.6	30.14	765.5	41.5	5.3	91	Calm	0	0			10s		Calm	0.04	1.0	Cloudy	
Sacramento, California	29.94	760.5	30.02	762.5	44	6.7	88	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.58	751.3	30.15	765.8	60	15.6	55	E	12	5.4		1c	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.31	744.5	30.13	765.3	55	12.8	62	SE	24	10.7		5c	0	NW		0.11	2.8	Fair	
Salt Lake City, Utah	25.44	646.2	29.77	756.1	40	4.4	82	Calm	0	0			10n		Calm	0.18	4.6	Light rain	
San Antonio, Texas	29.14	740.1	29.82	757.4	68	20.0	62	SE	3	1.3		0	0			0	0	Clear	
San Diego, California	29.96	761.0	30.04	763.0	47	8.3	77	E	4	1.8		0	2ks		Calm	0	0	Fair	
Sandusky, Ohio	29.66	753.4	30.34	770.6	50	10.0	72	N	10	4.5		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.14	765.5	30.17	766.3	49	9.4	71	NE	20	8.9		2k	5ks	NW	N	0	0	Fair	
San Francisco, California	30.00	762.0	30.06	763.5	48	8.9	81	W	10	4.5		1k	0	NW		0	0	Clear	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	42	5.6	19	E	2	0.9		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	29.87	758.7	29.96	761.0	74	23.3	81	NE	9	4.0		0	1s		E	0	0	Clear	
Shreveport, Louisiana	29.77	756.1	29.98	761.5	75	23.9	77	Calm	0	0		2ck	2s	Calm	Calm	Inap	Inap.	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.01	762.2	30.04	763.0	67	19.4	61	N	19	8.5		5k;hz	Haze	Calm	Calm	0	0	Hazy	
Socorro, New Mexico	25.33	643.4	29.40	746.7	45	7.2	24	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.56	750.8	30.24	768.1	36	2.2	46	E	14	6.3		2c	0	NW		0	0	Fair	
Springfield, Massachusetts	30.11	764.8	30.25	768.3	45	7.2	68	N	6	2.7			10ks		N	0.01	0.3	Cloudy	
Stockton, Texas	26.82	681.2	29.82	757.4	66	18.9	69	SE	22	9.8			0			0.03	0.8	Clear	
Thatcher's Island, Mass.	30.16	766.1	30.22	767.6	45	7.2	81	N	18	8.0		2c	0	N		0.22	5.6	Fair	
Toledo, Ohio	29.62	752.3	30.32	770.1	50	10.0	72	NW	4	1.8		1k	0	NW		0	0	Clear	
Tucson, Arizona	27.40	696.0	29.95	760.7	46	7.8	40	SW	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.77	756.1	30.27	768.8	42	5.6	83	SE	2	0.9		0	8s		SE	0.03	0.8	Cloudy	
Uvalde, Texas																			
Vicksburg, Mississippi	29.68	753.9	29.93	760.2	77	25.0	69	E	2	0.9		5c	0	Calm		0	0	Fair	
Virginia City, Montana	24.07	611.4	29.55	750.6	32	0.0	89	NE	15	6.7			10n		Calm	0.19	4.8	Light snow	
Visalia, California	29.62	752.3	30.00	762.0	44.5	6.9	88	N	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.12	765.0	30.23	767.3	51	10.6	46	N	18	8.0		0	0			0	0	Clear	
Wickenburg, Arizona					40	4.4	73	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.99	761.7	30.06	763.5	64	17.8	58	NE	14	6.3			10s		Calm	0.28	7.1	Cloudy	
Winnemucca, Nevada	25.57	649.5	29.93	760.2	27	— 2.8	76	SW	4	1.8		5ck	0	Calm		0.08	2.0	Fair	
Wood's Holl, Massachusetts	30.14	765.5	30.18	766.6	47	8.3	55	NE	16	7.2		10k	0	NE		Inap.	Inap.	Cloudy	
Yankton, Dakota	28.68	728.5	29.92	760.0	71	21.7	66	S	21	9.4		5ck	0	W		0.03	0.8	Fair	
Yuma, Arizona	29.75	755.6	29.90	759.4	57	13.9	59	E	3	1.3		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.00	558.8			59.2	15.1	77	Calm	0	0		8c;cs	0			0.50	12.7	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.92	760.0	29.82	757.4	78	25.6	86	Calm	0	0		0	0			0.20	5.1	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.91	759.7	29.92	760.0	80	26.7	87	SE	6	2.7		8c	2ks	Calm	SE	0	0	Hazy	James Gall.
Navassa, W. I.	29.82	757.4	29.96	759.4	77	25.0	74	E	10	4.5			10	SE	E	0.18	3.3	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	84	28.9	75	E			2	5ck	4s	Calm		0	0	Fair	C. J. Hering.
Puerto Perrio, U.S.Col'bia ‖	29.43	747.5	29.99	761.7	76	24.4	94	Calm			0		8n			0.50	12.7		Francesco J. Cisneros.
Rivas, Nicaragua					72	22		S				8k	1d	W	SE	1.77	45.	Covered	Carl Flint.
Santiago de Cuba, W. I.	29.89	759.2	29.92	760.0	80	26.7	78	SE	8.4	3.8		8cs	8ks		SE	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.83	757.7	29.88	758.9	44.0	6.7	96	S	8	3.6		4k	5s	N	S	Inap.	Inap.	Cloudy	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.8 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,263 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,775.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Deadwood, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.30 in., or 160.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	29.91	759.7	72	22.2	80	NE	14	6.3			2		NE	0.76	19.3			Fair	
§ Navy Yard, Portsmouth, N. H.	30.22	767.6	46	7.8	62	NNW	6	2.7			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.86	758.4	61.5	16.4	43	NE			6		10ks		W	0	0			Cloudy	
§ Adams, Punta Arenas, Costa Rica	29.89	759.2	77	25.0	91	N			1		8		N					Cloudy	
§ Alaska, Ancon, Peru *	29.93	760.2	65	18.3	84	SW			1		10		SW			Smooth		Cloudy	
§ Alert, N. 31° 32′, E. 141° 45′	29.77	756.1	73	22.8	81	WNW			4		2		NW			Smooth		Fair	
Alliance, Norfolk, Va.	30.13	765.3	60	15.6	71	ENE			1		2		Calm	0	0			Hazy	
Colorado, New York, N. Y.	30.18	766.6	50	10.0	93	NNE	16	7.2			8			0	0			Cloudy	
§ Constitution, Hampton Roads, Va.	30.17	766.3	57	13.9	69	NE	20	8.9			5		NW					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.20	767.1	56	13.3	69	NE	12	5.4			8		N	0	0			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	30.06	763.5	49	9.4	100	SW	1.2	0.5			2		SW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.08	764.0	42	5.6	91	NNE			2		10					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	29.89	759.2	81	27.2	83	SW			1		5		SW			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	29.97	761.2	53	11.7	80	W			5		0			Blank	Blank	Mod'ate	SW	Clear	
§ Michigan, Erie, Pa.	30.28	769.1	53	11.7	67	E			1		0							Clear	
§ Monocacy, Shanghai, China	30.07	763.8	57	13.9	87	ESE			0-1		10							Rainy	
§ New Hampshire, Port Royal, S. C.	29.96	761.0	76	24.4	91	NE	20	8.9			2		Calm	0	0			Clear	
Nipsic, Villafranca, France	29.94	760.5	71	21.7	71	SW			1		0					Smooth		Blue sky	
§ Onward, Ancon Bay, Peru †	29.93	760.2	65	18.3	84	SSW			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	30.08	764.0	56	13.3	94	ESE			1		10							Raining	
§ Passaic, Washington, D. C.	30.21	767.3	54	12.2	55	NE			2		0			0	0			Clear	
§ Pensacola, Vallejo, Cal.	30.00	762.0	47	8.3	85	Calm			0 *							Smooth		D. clouds	
§ Powhatan, Annapolis, Md.	30.19	766.8	53	11.7	67	N			3		2							Clear	
§ Quinnebang, N. 36° 07′, W. 6° 42′	29.94	760.5	63	17.2	83	S			3		5		S			Long	NW	Fair	
§ Richmond, Shanghai, China	30.07	763.8	58	14.4	82	E			1		10		SSE					Raining	
§ Rio Bravo, Brownsville, Texas †	30.04	763.0	73	22.8	100	N	1	0.4			8		Calm	0	0			Fair	
§ Saratoga, N. 38° 18′, W. 14° 50′	29.68	753.9	61	16.1	71	SW			6		2		NNE	Mod'ate	Mod'ate	Long	W	Raining	
§ Shenandoah, Montevideo, Uruguay	29.96	761.0	55	12.8	68	W			5		10					Mod'ate	SW	Cloudy	
§ St. Louis, League Island, Pa.	30.16	766.1	50	10.0	64	N	6	2.7			10		NE	0	0			Cloudy	
Swatara, Singapore, India †	29.78	756.4	85	29.4	87	W			2		2		Calm			Smooth		Clear	
§ Tennessee, Aspinwall, Panama	29.90	759.4	80	26.7	81	SE	2	0.9			10		Calm	0	0	Smooth		Cloudy	
Ticonderoga, Yokohama, Japan	29.84	757.9	65	18.3	94	NNW			4		10		N			Smooth		Hazy	
§ Trenton, Piraeus, Greece	29.76	755.9	77	25.0		NNE			3		10			3 h'rs light	3 h'rs light			Cloudy	
§ Tuscarora, Mare Island, Cal.	30.04	763.0	59	15.0	33	SW			1		5		S;W	0	0			Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.20	767.1	52	11.1	61	NNE			4		10		NE					Cloudy	
§ Wabash, Boston, Mass.	30.23	767.8	49	9.4	57	N	12	5.4			8			0.31	7.9			Fair	
§ Wachusett, S. 38° 19′, W. 55° 22′	29.55	750.6	58	14.4	94	NW			3		0			0	0	Smooth	NW	Clear	
Wyoming, N. 37° 35′, E. 24° 12′	29.74	755.4	65	18.3	78	ENE			3		10		E			Smooth	E	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 50′, W. 21° 25′	30.03	762.7	51	10.6		ENE			6		10		ENE			Mod'ate	E	Cloudy	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 51° 11′, W. 15° 00′	29.97	761.2	56	13.3	87	ESE			7		8		ESE	0	0	Fresh	S	Cloudy	
S. S. Ohio, Henry Morrison, N. 38° 50′, W. 64° 50′ *†	29.99	761.7	60	15.6	94	NNW			4		2		NNW	1 h'r	1 h'r	Mod'ate	NW	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 26° 04′, W. 110° 44′ †	29.82	757.4	65	18.3	84	W			2		0			0	0	Small	W	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson,																			
S. S. Scythia, W. H. O. Hains N. 40° 55′, W. 59° 30′ *	29.55	750.6	57	13.9	94	WNW			4		5		W	Light	Light	Mod'ate	W	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 43° 52′, W. 49° 12′	29.82	757.4	47	8.3	85	NE			1		10		SW	4 h'rs	4 h'rs	1	NE	Foggy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer,																			S. Rislus.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.92	760.0	85	29.4	92	E			3		2		E			Smooth		Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	30.06	763.5	49	9.4	85	W			3		k		W	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Pt. Arguello, Cal †	30.12	765.0	51	10.6		NW			2		0					Mod'ate	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, O. Delmey, N. 43° 16′, W. 124° 30′ †	30.05	763.3	44	6.7		NW			2		5		W			Light	W	Pleasant	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Mazatlan, Mexico	29.74	755.4	72	22.2	80	WNW			2		1		N			Mod'ate	WSW	Clear	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury. N. 21° 27′, W. 105° 22′ ††	29.75	755.6	76	24.4	91	NE			2		0					Small	W	Clear	
§ S. S. City of New York, W. B. Cobb, N. 30° 10′, W. 140° 01′ †	30.13	765.3	63	17.2	94	W			2		2		W	0	0	Mod'ate	NW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 31° 52′, W. 117° 15′ †	30.03	762.7	56	13.3		NW			4		2		NW	0	0	Long	NW	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 36° 36′, W. 171° 46′ †	30.14	765.5	62	16.7	88	S			5		0					Mod'ate	WSW	Clear.	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W. *†	30.17	766.3	58	14.4		ENE			3		10		NE			Smooth		Showery	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 34° 30′, E. 140° 08′ †	29.97	761.2	67	19.4	79	NE			1		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, La Libertad, San Salvador †	29.87	758.7	83	28.3	100	N			2		5		N	0	0	Heavy Ground	SSW	Fair	
§ S.S. Dakota, D. E. Griffiths Esquimalt, Vancouv r I'd. †	30.07	763.6	51	10.6	79	NW			2		5		S	0	0			Hazy	D. E. Griffiths.
§ S.S. Granada, J. M. Cavarty N. 27° 32′, W. 115° 37′ †	30.0	762.5	58	14.4	70	NNW			6		5k		NNW	0	0	Heavy	NW	Fair	
§ S. S. Idaho, San Francisco, Cal. †	30.04	763.0				Calm			0		2		Calm	0	0	Rough		Fair	
§ S.S. Zealandia, R. C. Ghest, N. 30° 35′, W. 140° 26′	30.21	767.3				WNW			3				W			Smooth	NW	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 49° 14′, W. 26° 55′ ††	29.81	757.2	55	12.8		NE			5		8		E			Rough	E	Showery	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Glendell, N. 50° 17′, W. 24° 31′ *†	29.96	761.0	56	13.3		ENE			5		10		NE	4 h'rs	4 h'rs	High	NE	Cloudy	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley																			
Schr. Adele Fuller, J. Jorgensen, N. 35° 16′, W. 75° 12′	30.09	764.3	64	17.8	48	NE	12	5.4			5k		NE	0	0	Short		Fair	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 30° 20′, W. 61° 44′ †	30.05	763.3	75	23.9		SSW			1		2		SSW	0	0	Long	N	Clear	J. Jorgensen
Bark. Carrie Heckle, B. F. Woodbury, S. 30° 25′, E. 31° 53′ †	30.26	768.6	76	24.4		NNE			6		0			0	0	Smooth	NNE	Fair	L. L. Lewis.
Brigantine George, W. H. Champlin, Arroyo, Porto Rico †	30.15	765.8	82	27.8		ESE			3		2		ESE	Showers.		Smooth		Squally	B. F. Woodbury.
Hippolyta, N. 51° 21′, W. 8° 05′ *	29.84	757.9	55	12.8		ESE			8		8		E	Slight.		Mod'ate	E	Cloudy	
Iron Cross, W. Randall																			
Barque Syringa, E. Lewis																			W. Randall. E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

The Heliotype Printing Co 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 15, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

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

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			29.90	759.5				SW			6		7			0	0	Very cloudy	Dr. Ollive.
Nemours			29.72	755.0	70.2	21.2	75	WNW			1		6			0	0	Cloudy	Metge.
Algiers			29.78	756.4	69.8	21 0	43	ENE			2		4			0	0	Cloudy	Nicolas.
La Calle			29.81	757.2	67.8	19.9	77	NE			3		0			0	0	Clear	Fonfrède.
Tunis			29.86	758.4															Jacques.
Sfax			29.98	761.6															Gau
Saida			29.78	756.8															Bernard.
Tebessa			29.92	760.0	82.4	28.0	13	W			4		4			0	0	Cloudy	Watrin.
Geriville					68.4	20.2	47	S			6		0			0	0	Clear	Brugniaux.
Laghouat			29.82	757.3	86.4	30.2	16	SE			5		2			0	0	Fair	Suart.
Biskra			29 86	758.5	84.6	29.2	36	E			3		2			0	0	Fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.30	744.2	29.83	757.6	74.7	23.7	49	S			3		8			0.417	10.6		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.09	738.7	29.84	757.8	62.6	17.0	84	W	6 3	2.8			10			0.524	13.3		Dr. Wierzbicki.
Eperies	28.89	733.9	29.74	755.4	68.4	20.2	53	N			4		6cs;ks			0.018	0.45		Julius Mikolik.
Gratz	28.62	726.9	29.83	757.7	64.0	17.8	67	NNE			2		7			0.079	2.0		Andreas Rospini.
Hermannstadt	28.32	719.4	29.70	754.4	66.4	19.1	64	S			2		10			0.055	1.40		Prof. A. Gottschling
Kremsmünster, Observatory	28.58	725.8	29.87	758.8	65.5	18.6	64	Calm			0		5			0.031	0.8		The Staff.
Lemberg	28.80	731.5	29.75	755.7	65.3	18.5	66	S			3		4			0	0		Dr. T. Stanecki.
Pola	29.72	755.0	29.84	757.8	71.4	21.9	57	WNW			1		0			0	0		I.R.Hydrographic Office.
Szathmar	29.27	743.4	29.71	754.6	73.8	23.2	48	N			4		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.46	748.3	29.73	755.1	70.5	21.4	56	NW			3		5			0.026	0.65		Karl Stancel.
Trieste	29.73	755.1	29.83	757.7	72.7	22.6	77	NW			1		7			Inap.	Inap	Thunder storm.	P. Busin.
Vienna	29.19	741.5	29.92	760.0	62.2	16.8	69	WNW			3		10			0.177	4.5		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 12, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	30.31	769.9	30.41	772.4	48.6	9.2		ENE	18	8.0			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.31	769.9	30.33	770.4	52	11.1		ENE			4		7					Misty	G.Carrick.
Armagh, (Observatory)	30.05	763.3	30.28	769.1	56.4	13.6		NE	11	4.9			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.18	766.6	62.3	16.8		ENE	26	11.6			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.67	753.6	30.18	766.6	58.5	14 7		ENE	21	9.4			1					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.87	758.7	30.27	768.8	52.5	11.4	71	NE			4		9			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	29.99	761.7	84	28.9		NE			2		4					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.03	762.7	30.12	765.0	69.0	20.6		NNE			2		1					Blue sky	H. Todd.
Cardington			30.11	764.8	64.0	17.8		NE			2		2					Blue sky	John McLaren.
Chatham (School M. E.)	29.97	761.2	30.10	764.5	63.0	17.2		E			1		0					Blue sky	Sapper W. Gibson, R. E.
Donaghadee	30.26	768.6	30.30	769.6	56	13.3		NE			2		5					D. clouds	J. Mac Gowan.
Dover	30.00	762 0	30.03	762.7	61	16.1		NNE			5		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.81	757.2	30.04	763.0	64.0	17.8		ESE			1		3					Misty	The Staff.
Fort Napier, Natal	27.72	704.1	29.93	760.2	79.4	26.3		NE			1		2					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.96	761.0	84	28.9		S			1		5					D. clouds	
Galway (Queen's College)			30.13	765.3	63.5	17.5		ENE			3		9					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.62	752.3	29.67	753 6	64.1	17.8		NW			2		9					Gloomy	Sr.t. W. Allen.
Glasgow, (Observatory)	30.14	765.5	30.34	770.6	52.9	11.6		E			6		5k					D. clouds	D. G. Maclean.
Great Yarmouth	30.13	765.3	30.14	765.5	54	12.2		NNE			4		2					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.88	758.9	30.05	763.3	73.5	23.1		NE			5		6					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.76	755.9	29.98	761.5	54	12.2		ENE			2		5					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.18	766.6	30.30	769.6	70	21.1		E			8	ck				0	0	Fine	M. P. Moyle.
Holyhead	30.15	765.8	30.17	766.3	59	15.0		ENE			6		0					Blue sky	John Tilston.
Jersey	29.70	754.4	29.99	761.7	58.7	14.8		ENE			5		3					Misting	J. Fisher.
Kew (Observatory)	30.02	762.5	30.06	763.5	71.0	21.7		NE	23	10.3			8					Misty	The Met'g'l Office.
Leicester (Museum)	29.95	760.7	30.20	767.1	60.0	15.6		E			1		5					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.81	757.2	29.88	758.9	70	21.1		N			2		0					Blue sky	A. King.
Nairn																			W. D. Penny.
Nassau, Bahamas			29.98	761 5	78.0	25.6		N			1		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	30.04	763.0	30.22	767 6	60.2	15.7		NNE			5		10k		NE	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.65	753.1	30.16	766.1	61.0	16.1		ENE			6		3					D. clouds	Rev. Stephen J. Whitty.
Oxford (Radcliffe Obs'y)	29.88	758.9	30.14	765.5	67	19.4		ENE			4		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.94	760.5	30.01	762.2	70.1	21.2		E			4		8					D. clouds	John Merrifield.
*Roche's Point	30.06	763.5	30.16	766.1	64	17.8		E			6		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.92	760.0	30.08	764 0	60	15.6		SE			2		4					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.44	773.2	51.2	10.7		N	14	6.3			9					D. clouds	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.63	752.6	29.70	754.4	59.0	15.0		NNE			2		10			Blank	Blank	Gloomy	Serg't W. H. Lyne.
Sheffield	30.03	762.0	30.28	769.1	56 8	13.8		NE			3		9			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.27	768.8	30.30	769.6	54.9	12.7	69	E			6		5			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.25	768.3	57.0	13.9		NE	13	5.8			0					Blue sky	Rev. S. J. Perry.
Straifield Turgiss	29.86	758.4	30.08	764.0	71.0	21.7		NE			2		1					Blue sky	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.01	762.2	30.03	762.7	75	23.9		E			4		4					D. clouds	W. Newcombe.
Valencia (Observatory)	30.06	763.5	30.08	764.0	67.6	19.8		NE	14	6.3			7					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.88	758.9	29.92	760.0	60.0	15.6	59	WNW	12.1	5.4		9	10			0.28	7.1	Raining	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.62	752.3	50.0	10.0	81	NW			2		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			30.40	772.1	49.3	9.6		E			3		10k			0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.96	761.0	30.15	765.8	73.1	22.8	57	SSE	15.5	6.9		0	4		ESE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	30.15	765.8	30.24	768.1	53.1	11.7	96	W	3	1.3			7			0.01	0.3	Misting	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.38	771.6	51	10.6		NE			4	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.37	771.4				N			4		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from	Weather	Observer
H. M. S. Alert				Capt.J.P Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 41′, W. 6° 15′			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.23	666.2	29.95	760.7	68.0	20.0	95	SE			1	9ck				Inap.	Inap.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.99	761.7	30.04	762.9	59.0	15.0	74	N			2		3						
Fanöe	30.09	764.3	30.11	764.8	57.4	14.1	65	NW			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.42	772.6	30.46	773.7	46.8	8.2	83	W			4		8						
Thorshavn (Faröe)	30.43	772.9	30.47	773.8	48.0	8.9	91	NE			2		10						
Vestervig	29.99	761.8	30.09	764.2	51.4	10.8	77	WNW			4		0						

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

FRENCH SERIES.

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

Alençon, Normal School	29.37	746.0	29.92	760.0	76.1	24.5	49	E			4		5kn		E	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.80	757.0	29.91	759.7	77.0	25	92	N			1		10		Calm	0.110	2.8	Covered	Vaillant, Director.
Arras, Engineer School	29.67	753.6	29.91	759.8	77.7	25.4	33	E			3		7k		SSE	0	0		Klein, Commandant.
Avignon, Normal School	29.82	757.3	29.89	759.3	76.5	24.7	44	NW			1		0			0	0	Very clear	Girand, Director.
Bar-sur-Seine	29.32	744.7	29.85	758.2	75.4	24.1	33	SE			1		5kn		ESE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.65	753.2	29.91	759.6	76.1	24.5	41	E			3		2		E	0	0	Slightly cl'dy	Frère Eugene Marie.
Besançon, Normal School	29.01	736.8	29.85	758.3	74.5	23.6	44	N			2		2		NE	0	0	Slightly cl'dy	A. Carré, Director.
Bordeaux	29.60	751.8	29.80	756.8	78.8	26.0	34	ESE			2	2c		Calm		0	0	Almost clear	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.01	736.9	29.93	760.3	79.5	26.4	41	N			1		2k	N	N	0	0	Slightly cld'y	Marlot, Director.
Bourges, Normal School	29.36	745.8	29.87	758.6	76.1	24.5	42	N			1		2cn		NE	0	0	Slightly cl'dy	M. Gence, Director.
Brest, Naval Observatory	29.67	753.6	29.91	759.8	71.6	22.0	61	NE			3		2		NE	0	0		Ch. de Rermarse, Dir
Caen, Normal School	29.81	757.2	29.91	759.8	62.6	17	90	NNW			1		0			0	0	Clear	M. Bietrix, Director.
Carcassonne, N. School	29.41	746.9	29.80	756.9	74.1	23.4	54	E			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	29.01	752.0	29.91	759.8	81.3	27.4	42	SW			2		5		SE	0.016	0.4	Cloudy	Jadot, Director
Chartres, Normal School	29.27	743.5	29.82	757.3	79.2	26 2	75	E			1		0			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.52	724.5	29.82	757.3	75.6	24.2	48	N			1		5			0	0		Alluard, Director.
Commercy, Normal School	29.08	738.5	29.90	759.5	73.0	23.8	44	E			1	ck		E	E	0.008	0.2		Dr. Coullet, Director.
Commune de Gréasque*	28.84	732.4	29.98	761.4	69.1	20.6	39	NW			2		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.15	740.3	29.88	759.0	74.1	23.4	65	NW			1		k		S	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.65	753.1	29.85	758.2	79.5	26.4	38	NNE			1		5		NNE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.58	751.3	29.87	758.8	75.6	24.2	46	E			1		2		E	0	0	Slightly cl'd'y	Poirrier, Director.
Lons-Le-Saunier, N. School	28.95	735.4	29.84	758.0	73.2	22.9	49	N			1	2ck		W	S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.78	756.3	29.89	759.1	77.4	25.2	43	NE			2		8	SE	NE	0.067	1.70	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.24	742.8	29.84	757.8	77.5	25.3	42	E			1		0			0	0	Clear.	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.65	753.1	29.91	759 8	70.5	21.4	41	WSW			1		1		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.86	733.1	29.86	758.5	71.8	22.1	44	NE			4		k		NE	0	0		Barbier, Director.
Mont-Louis	24.77	629.1	30.00	762.1	55.0	12.8	65	E	18 6	8.3			6			0	0		M. Cave, for Dr. Fines.
Nice	29.87	758.7	29.91	759 6	68.4	20.2	80	S			1			S	S	0	0	Misty	Capt. Boissiere, Director.
Nismes, Normal School	29.69	754.2	29.89	759.3	77.9	25.5	39	NW			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.75	755.7	29.86	758.4	67.1	19.5	65	SE	5.6	2.5			1	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.47	570.7			51.1	10.6							1	SW	SE	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.81	731.8	29.83	757.7	74.5	23.6	34	S			1		0			0.732	18.6	Clear	M. Tallien
Puy de Dome (Summit) Ob	25.10	637.6			52.2	11.2	76	E			2		8			0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.76	756.0	29.80	756.8	81.0	27.2	44	SE			2		0			0	0	Clear	Lt E. Devante, Director
Rouen, Normal School	29.85	758.3	29.94	760.5	79.5	26.4	36	E			1		2		SE	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	29.89	759 2	29.92	760.0	62.6	17.0	76	NE			4		0			0.148	3.75	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.73	755.2	29.90	759.4	77.9	25.5	40	ESE			2		5		E	0	0		E. Renou, Director.
Tarbes, Normal School	28.75	730.2	29.77	756.2	77.0	25	61	S											T. Huguet, Director
Toulouse, Observatory	29.14	740 2	29.80	758.4	73.0	22.8	54	SSE			3		0			0	0	Clear	B. Bailland, Dir.
Tours	29.65	753.0	29.84	758.0	78.1	25 6	42	E			1		2		ENE	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.42	747 2	29.91	759.8	75.9	24.4	38	E			3					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.13	740.0	29.81	757.1	78.8	26	36	ESE			1		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.19	766.7	30.21	767.4	81.0	27.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.63	752.5			78.4	25.8	39	E			2		4		E	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	30.01	762.2	30.04	762.9	52.5	11 4	95	ENE	4.5	2.0			10n			0.500	12.7	Raining	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,264.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 305.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.10	739.0	29.95	760.8	74.1	23.4	44	NE			6		3k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.82	757.4	29.98	761.6	74.8	23.8	43	NE			4		4			0	0		Prof. Dr. Arndt.
Breslau	29.41	746.9	29.93	760.3	70.2	21.2	53	N			3		4			0	0		Royal University Obs'y
Carlsruhe	29.48	748.7	29.89	759.1	74.5	23.6	58	NE			2		5	E		0.008	0.2	Light rain	Albert Senz.
Cassel	29.39	746.4	29.99	761.8	73.4	23.0	36	NE			4		2	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.63	752.5	29.99	761.8	76.3	24.6	31	E			1		2			0.059	1.5		Physical Society.
Friedrichshafen	28.48	723.4	29.86	758.5	69.8	21.0	45	ENE			5		4	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.01	762.2	30.08	764.0	69.4	20.8	56	NE			2		4			0	0		Dr. Reinhold Kleeman.
Kiel	30.07	763.7	30.08	764.1	65.7	18.7	47	N			2		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.83	757.7	29.91	759.8	66.7	19.3	69	N			4		1	W		0.016	0.4		Prof. E. Luther.
Köslin			30.01	7 2.3	64.4	18 0		N			2		1			0	0		H. Müller.
Leipsic Observatory	29.61	752.0	30.02	762.4	70.5	21.4	55	N			1		7	NNE		0.177	4.5		Prof. Dr. Bruhns, Privy Counselor.
Magdeburg	29.82	757.3	30.04	763.1	72.7	22.6	60	NNE			3		3k	NE		0	0		Dr. Assmann.
Memel	29.90	759.4	29.95	760.6	62.2	16.8	52	N			2–3		4k						Reinbrecht & Issermann
Munich	28.14	714.7	30.00	761.9	67.1	19.5	50	NE			4		5	E		0	0		Dr. C. Lang.
Neufahrwasser	30.09	761.9	30.01	762.3	54.3	12.4	66	NNW			2		3			0	0		A. Lothes.
Neustadt (Palatinate)	29.41	747.1	29.94	760.4	75.9	24.4	49	NE			1		5	NE		0	0		Realiehrer Dicknether.
Posen	29.67	753.6	29.95	760.7	71.4	21.9	46	N			4		7			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.39	746.4	29.91	759.7	75.2	24.0	49	ENE			4		3	E		0	0		Imp. University Observatory.
Stuttgart	28.95	735.4	29.81	757.1	73.4	23.0	36	N					4	N		0.008	0.2		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.46	722.9	30.04	762.9	70 0	21.1	61	SE	0.7	0.3		ck	6n		E	0	0		Reallehrer J. Hopfner.
Wustrow	30.08	763.9	30.10	764.5	57.9	14.4	82	NW			2		0			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.40	746.7	29.78	756.4	70.9	21.6		NE			1.0		5					½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.63	752.6	29.68	753.9	85.0	29.4	87	SW					3	WSW		0	0		D. clouds
Deesa	29.17	741.0	29.62	752.5	102.8	39.3	14	WSW	11.5	5.1			0			0	0		Blue sky
Bombay	29 74	755.3	29.77	756.2	86.1	30.1	69	WNW	15	6.7			0			0	0		Blue sky
Poona (Yarrowda)	27.90	708.5	29.71	754.6	88.3	31.3	40	W	25	11.2			1			0	0		D. clouds
Belgaum	27.23	691.7	29.74	755 3	81.7	27.6	55	WNW	7	3.1			0			0	0		Blue sky
Lahore	28.90	734.0	29.61	752.2	97.2	36.2	22	E	0.9	0.4			0			0	0		Blue sky
Roorkee	28.83	732 3	29.72	754.8	85.8	29.9	14	N	3	1.3			8			0.02	0.5		Sultry
Agra	29.00	736 7	29.55	750 5	94.6	34.8	17	NW	5.8	2.6			8		NW	0	0		
Nagpur	28.57	725.7	29.57	751.0	102.7	39.3	16	W	4.6	2.1			4	W		0	0		D. clouds
Jubbulpore	28.27	718.0	29.58	751.4	97.9	36.6	15	NW	2.9	1.3			4			0	0		D clouds
Lucknow	29.26	743.2	29.63	752 5	96.0	35.6	45	NNE	2.6	1.2			0			0	0		Blue sky
Allahabad	29.36	745 7	29.67	753.5	83.6	28.7	51	Calm	4.0	1.8			10			0.22	5.6		Thunder-storm
Patna	29.45	748.1	29.63	752 5	92.9	33.8	46	E	3.1	1.4			4	E	E	0.15	3.8		D. clouds
Hazaribagh	27.67	702.9	29.68	753.8	76.8	24.9	61	ENE	11.0	4.9			8		SE	0.09	2.3		Thunder-storm
Cuttack	29.57	751.1	29.65	753.2	90.1	32.3	60	S	3.8	1.7			0			0	0		Blue sky
Calcutta (Alipore)	29.63	752.7	29.66	753.2	86.2	30.1	72	WSW	2.0	0.9			1			0	0		D. clouds
Goalpara	29.27	743.4	29.67	753 7	82.9	28.3	61	Calm	5.1	2.3			0			0.45	11.4		Blue sky
Chittagong	29.56	750 9	29.65	753 2	86.9	30.5	76	WNW	3.9	1.7			0			0	0		
Sibsagar	29.42	747.2	29.75	755.6	82.3	27.9	74	SE	2.7	1.2			0			0.49	12.4		Blue sky

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.44	747.8	29.85	758.1	76.3	24.6	36	S	0.7	0.3			3			0	0		Prof. Giovanni Clodig.
Milan	29.33	744.9	29.83	757.6	71.6	22.0	56	SW	4.3	1.9			2	WSW		0.071	1.8		Prof. Schiaparelli.
Padua	29.75	755.6	29.85	758.3	74.7	23.7	42	W	3.1	1.4			1			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.04	735.1	29.84	757.9	70.9	21.6	58	S	1.3	0.6			2	E		0	0		Prof. P. F. Denza.
Genoa	29.70	754.4	29.89	759.2	65.5	18.6	75	SW	1.8	0.8			6	N		0	0		Prof. G. M. Garibaldi.
Mondovi	27.98	710.7	29.87	758.8	69.4	20.8	44	W			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.81	757.2	29.86	758.4	68.4	20.2	59	NW	8.1	3.6			1			0	0		Prof. Luigi Guidi.
Florence	29.60	751.8	29.85	758.3	73.4	23.0	63	NW			4		4	E		0.028	0.7		Cav. F. Meucci.
Leghorn	29.32	757.5	29.91	759.6	68.0	20.0	61	WNW	1.8	0.8			2			0	0		Prof. P. Monte.
Rome	29.68	753.9	29.85	758.3	72.1	22.3	55	W	9.4	4.2			6			0	0		Prof. P. S. Ferrari
Lecce	29.59	751.5	29.84	757.9	71.1	21.7	52	NNW	11.2	5.0			1			0	0		Prof. C. De Giorgi.
Cosenza	28.98	736.2	29.89	758.4	73.8	23.2	70	SSE	5.6	2.5			3			0	0		Prof. D. Conti.
Cagliari	29.67	753.7	29.86	758.5	69.6	20.9	63	SE			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.68	753.8	29.93	760.2	64.6	18.1	69	ENE	5.6	2.5			1			0	0		Prof. G. Ciacciatore.
Syracuse	29.78	756.4	29.82	757.5	73.6	23.1	55	SE	4.9	2.2			3	S		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.35	745.5	29.86	758.5	66.2	19.0	77	WSW	5.6	2.5			4	W		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					59.9	15.5	69	N	1.5	0.7			10cks			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.72	754.9	29.92	759.9	63.0	17.2	79	WSW	0.6	0.3			10s			0.430	10.92	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.91	759.7	29.97	761.2	57.3	14.1	79	S	5.4	2.4		0	2ck			0	0	Clear	The Staff.
Wakayama	29.90	759.4	29.95	760.7	58.7	14.8	71	NW	2.2	1.0			9s			0.004	0.10	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.99	634.8	30.06	763.5	51.8	11.0	42	Calm			0	0	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	23.64	600.4			62.6	17.0	63	Calm	0	0		0	0			0	0	Clear	Vicente Fernandez.
Leon	24.89	619.4	30.02	762.4	62.4	16.9	68	SW			1	0	0			0	0	Blue sky	Prof. M. Leal.
Mazatlan	29.68	753.8	29.94	760.4	69.2	20.7	75	NW			2	3cs	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.3	29.98	761.5	57.2	14.0	64	Calm	0	0		0	0			0	0	Very hazy	The Staff
Morelia	23.977	608.8†			70.2	21.2	32	NE			2	0	0			0	0	Very clear	M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.6	29.83	757.6	62.8	17.1	66	SW			1	0	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.38	593.9	30.13	765.4	53.6	12.0	50	Calm	0	0		0	0			0.39	9.8	Very clear	Prof. P. Spina.
San Luis Potosi	24.20	614.7	30.08	764.1	64.0	17.8	76	E			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.87	758.7	29.88	759.0	78.3	25.7	88	E			2	1	7	N	E	0.06	1.5	Rainy	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.56	572.9	30.10	764.4	58.1	14.5	70	Calm			0	0	0			0	0	Very clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.5 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,466 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	30.04	762.9	30.04	762.9	73.8	23.2		NE			4					0	0		
Helder	30.05	763.3	30.11	764.7	66.2	19.0		NE								0	0		
Hellevoetsluis	30.10	764.5	30.10	764.5	58.1	14.5		NE			4					0	0		
Utrecht	30.04	763.0	30.04	763.0	72.9	22.7	39	ENE			4					0	0		
	30.00	762.1	30.05	763.3	73.2	22.9	39	NNE			4		2			0	0	Ltly cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.16	766.0	30.21	767.4	51.8	11.0	63	N	11.2	5.0			1			0	0		
Brönö	30.13	765.3	30.17	766.3	36.0	2.2	79	NNW	18	8			9			0.039	1.0		
Christiania	29.83	757.6	29.97	761.3	61.3	16.3	41	NE	11	5			8			0	0		
Tromsö	29.91	759.6	29.96	761.0	33.1	0.6	78	WNW	7	3			10			0.185	4.7		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	29.74	755.4	29.95	760.8	61.9	16.6	77	N			6		5			0.591	15.0		Dr. J. A. Sampaio.
Campo Major	28.73	729.8	29.74	755.3	54.7	12.6	77	ESE	4.3	1.9			10			0.390	9.9		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.56	750.7	29.64	752.9	64.4	18.0	65	WNW	16.8	7.5			8			0.858	21.8		Capt. D. A. de Cunha.
Lisbon Observatory	29.33	745.0	29.68	753.9	64.6	18.1	64	SE	6.9	3.1			9			0	0		The Staff.
Ponta Delgada (Azores)	29.76	755.8	29.83	757.6	63.0	17.2	67	N	23.0	10.3			4	W		0.370	9.4		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. d. Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bustos, Com'd't.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela			29.89	759.3	70.2	21.2		W			1		0			1	W		Blue sky	C. J. de Sonna Barcellos. Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds.			30.27	768.8	78.8	26.0		NNE			2		1		NE	2	NE		D. clouds	Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Cómd't.
Sado. J. A. de Brito Capello Benguela, Benguela			29.95	760.8	76.1	24.5		NW			3		3		W	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo. J. M. T. Guimaraes, Macao, China			30.05	763.2	85.1	29.5		E			3		0			1			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.80	756.8	29.82	757.3	56.7	13.7	45	NW	2	1			1cs						Capt. Sselliwerstow.
Astrakhan	29.80	757.0	29.72	754.9	83.8	28.8	36	WSW	2	1			10			Blank	Blank		Capt. Wisganow.
Barnaul	29.54	750.2	30.04	762.9	47.7	8.7	36	NW	9	4			1					Light clouds	Meteorological Obs.
Dorpat	29.66	753.4	29.89	759.3	73.4	23.0	38	SSW	7	3			7cs;k						Prof. Dr. Weihrauch.
Ekaterinburg	28.97	735.9	29.90	759.5	67.6	19.8	18	WNW	4	2		6c						Hazy	Meteorological Obs.
Irkutsk																			
Kasan	29.68	753.8	29.94	760.5	67.6	19.8	25	SE	2	1			0						Physical Cabinet.
Kertch	29.85	758.2	29.87	758.7	55.8	13.2	99	S	7	3			2						Lagorio.
Kieff	29.13	739.8	29.74	755.3	72.0	22.2	51	NE	4	2			10cks,n					Raining	Physical Cabinet.
Krotkowo*	29.50	749.3	29.95	760.7	77.0	25.0	22	E	9	4			0						Cand. Fatjanow.
Lugan	29.48	748.9	29.68	753.9	79.3	26.3	39	NNW	13	6			10			Blank	Blank	Light clouds	Meteorological Obs.
Moscow	29.41	746.9	29.93	760.3	73.2	22.9	42	S	4	2			0						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.74	755.4	29.81	757.2	76.8	24.9	51	SW	9	4			3ks						Kurdakof.
Nikolaievsk, on the Amoor	29.87	758.6	29.95	760.8	30.6	— 0.8	90	Calm	0	0			10n					Snowing	
Nukuss	29.48	748.7	29.69	754.2	94.1	34.5	13	Calm	0	0			7kn						
Orenburg																			
Pekin (China)	29.69	754.2	29.84	757.8	69.3	20.7	42	Calm	0	0			0						Physical Observatory.
St. Petersburg	29.85	758.2	29.87	758.6	64.6	18.1	38	NW	11	5		1c							Central Physical Obs.
Tashkend	28.26	717.7	29.72	754.8	85.1	29.5	36												Teich, A. M.
Tiflis	28.47	723.0	29.83	757.7	72.0	22.2	52	W	4	2			10					Raining	Physical Observatory.
Vladivostock																			
Warsaw	29.44	747.8	29.85	758.2	70.2	21.2	67	N	2	1			10ks					Thunder	Astronomical Obs.
Wilna	29.45	748.1	29.85	758.3	72.3	22.4	50	N	4	2			3						Astronomical Obs.
Yeniseisk	29.78	756.4	30.08	764.0	32.4	0.2	50	W	11	5			2					Snowing	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.78	756.5	29.89	759.2	65.7	18.7	54	SE	3.6	1.61		2c;ck				0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.73	755.2	29.79	756.6	81.0	27.2	45	NW	2.0	0.87		3	2	W		0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.88	682.6			73.0	22.8	38	NE	1.6	2.04			4			0	0	Cloudy.	Domingo Martin y Peres
Madrid, Royal Observatory	27.53	699.3	29.67	753.6	72.0	22.2	43	S	6.7	3.00		0	10			0	0	Covered	The Staff.
Murcia, Met. Obs'y	29.61	752.1	29.76	755.9	70.0	21.1	67	ESE	9.9	4.44		4	5	NW		0.031	0.78	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.82	732.0	29.69	754.2	63.5	17.5	70	E	8.7	3.9			10			0	0	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.88	758.8	29.94	760.5	76.7	24.8	80	SE	3.1	1.4		9cs	0	WSW		0.347	8.8	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.85	758.3	29.91	759.6	85.7	29.8	66	E	3.3	1.5			s			0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.62	752.4	29.72	754.9	57.2	14.0	78	ESE	10.1	4.5		0	10		S	0.470	11.9		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.95	760.6	30.04	762.9	82.4	28.0	81	SE	0	0		1s	9k	SE	SE	0	0	Overcast	Enriquetiades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Sto kholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.77	756.1	29.81	757.1	43.5	6.4	.....	NW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Umea	29.86	758.5	29.91	759.8	56.1	13.4	69	NW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Hernosand	29.95	760.6	30.00	761.9	49.6	9.8	69	WNW	.....	.....	4	.....	10	.....	.....	0.071	1.8	.....	
Stockholm	29.78	756.3	29.95	760.8	60.4	15.8	59	E	.....	.....	4	.....	6	.....	.....	0	0	.....	
Wisby	29.90	759.5	29.96	761.0	58.3	14.6	44	W	.....	.....	2	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.87	758.7	29.96	760.9	53.4	11.9	72	NE	9.6	4.3	.....	.....	7	WNW	.....	0.039	0.98	.....	Nils Ekholm.

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

Swedish Naval Series.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Fall. Rain.	Weather.	Observer.
Barque Australia, N. 48° 44′, W 9° 39′	.....	.....	29.91	759.7	54.7	12.6	94	E	.....	.....	1	.....	1	.....	.....	.....	.....	.....	Misty	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.47	723.2	29.86	758.4	67.6	19.8	52	N	.....	.....	2	.....	2	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.30	718.7	29.87	758.7	72.9	22.7	50	NE	.....	.....	2	.....	3	.....	.....	0	0	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.8 mm.; Thermometer, +3.4 Cent. Relative Humidity, —5 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.77	756.2	56.1	13.4	86	N	20	9.0	.....	.....	10	.....	NE	0	0	Cloudy	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.88	758.9	72.5	22.5	.....	W	.....	.....	1	.....	5	.....	.....	0.43	11.	.....	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.93	760.1	76.3	24.6	66	SW	.....	.....	3	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	43.8	6.6	.....	NE	3	1.3	.....	2cs	0	.....	.....	0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	30.10	766.1	30.22	767.6	44.8	7.1	49	N	13	5.8	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.08	764.0	30.13	765.3	40.6	4.8	72	N	12	5.4	.....	0	0	.....	.....	0.020	0.51	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	30.18	766.6	30.37	771.4	51.6	10.9	65	W	.....	.....	1	9cs	0	N	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.07	763.8	30.24	768.1	44.0	6.7	.....	N	.....	.....	2	0	0	.....	.....	0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.40	772.1	30.43	772.9	40.5	4.7	78	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear.	J. McWilliams.
Fredericton, N. B.	30.16	766.1	30.22	767.6	46.1	7.8	44	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.20	741.7	30.00	762.0	62.2	16.8	87	SW	8	3.6	.....	5k	5ks	SW	.....	0.070	1.78	Cloudy	James Stewart.
Granton, Ontario	29.37	746.0	30.49	774.4	48.0	8.9	56	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.97	761.2	30.10	764.5	42.9	6.1	68	NE	16	7.2	.....	0	7ks	.....	.....	Inap.	Inap.	Fair.	A. Allison.
Hamilton, Ontario	30.06	763.5	30.43	772.9	49.7	9.8	72	NW	.....	.....	1	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	30.04	763.0	30.38	771.6	47.8	8.8	81	NE	5	2.2	.....	7c	0	NE	.....	0	0	Fair.	S. Woods, M. A.
Little Glace Bay, N. S.	29.99	761.7	30.03	762.7	36.2	2.3	89	N	5	2.2	.....	7k	0	NE	.....	0.13	3.3	Cloudy	C. H. Rigby.
Montreal, Quebec	30.16	766.1	30.37	771.4	49.0	9.4	44	N	8	3.6	.....	0	0	.....	.....	0	0	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	30.19	766.8	30.22	767.6	48.0	8.9	57	S	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.69	754.1	30.40	772.1	51.5	10.8	50	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.77	756.1	30.47	773.9	49.0	9.4	60	W	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.68	753.9	30.43	772.9	53.7	12.1	53	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.81	757.2	30.51	774.9	49.1	9.5	85	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.81	757.2	30.46	773.7	49.9	9.9	66	W	6	2.7	.....	3ck	0	N	.....	0	0	Fair.	M. Payne.
Quebec, Quebec	30.01	762.2	30.34	770.6	43.0	6.1	67	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.99	761.7	30.46	773.7	42.5	5.8	58	NW	8	3.6	.....	.....	10s?	.....	.....	0	0	Clear?	W. H. McIntyre.
St. John, N. B.	30.02	762.5	30.19	766.8	44.0	6.7	68	N	12	5.4	.....	0	0	.....	.....	0.100	2.54	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.76	755.6	30.49	774.4	47.3	8.5	78	W	4	1.8	.....	1cs	0	.....	.....	0	0	Clear.	K. Stewart
Stratford, Ontario	29.17	740.9	30.48	774.2	46.2	7.9	61	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	30.00	762.0	30.04	763.0	38.1	3.4	80	N	10	4.5	.....	3k	2ks	N	.....	0.08	2.0	Fair.	T. C. Hill, C. E.
Toronto, Ontario	30.07	763.8	30.45	773.4	49.9	9.9	51	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.36	745.7	30.44	773.2	52.2	11.2	56	W	9	4.0	.....	1cs	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	30.07	763.8	30.14	765.5	46.4	8.0	65	NE	11	4.9	.....	0	6s	.....	.....	0	0	Fair.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.69	754.1	29.95	760.7	34	1.1	90	NE	.....	.....	.....	10k	10s	.....	.....	Inap.	Inap.	Cloudy	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.84	757.9	35.6	2.0	.....	NE	.....	.....	3	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 f., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.30	769.6	30.39	771.9	52	11.1	41	N	5	2.2		0	0			0	0	Clear.	
Alpena, Michigan	29.83	757.7	30.50	774.7	46	7.8	54	Calm	0	0			8s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.09	738.9	30.24	768.1	59	15.0	70	E	17	7.6		0	Haze			0	0	Clear.	
Atlantic City, New Jersey	30.32	770.1	30.34	770.6	50	10.0	52	N	18	8.0		0	0			0.03	0.8	Clear.	
Augusta, Georgia	30.14	765.5	30.34	770.6	61	16.1	45	NE	3	1.3		0	Fog		Calm	0	0	Clear.	
Baltimore, Maryland	30.36	771.1	30.41	772.4	52	11.1	41	N	6	2.7		0	0			0	0	Clear.	
Barnegat, New Jersey	30.31	769.9	30.33	770.4	50	10.0	52	NE	21	9.4		2k	0	N		0.10	2.5	Clear	
Bismarck, Dakota	28.20	716.3	30.06	763.5	57	13.9	87	W	5	2.2			10s		S	0.19	4.8	Cloudy	
Boerne, Texas	28.56	725.4	29.85	758.2	64	17.8	94	SE	2	0.9		0	0			0	0	Clear	
Boise City, Idaho	27.24	691.9	30.20	767.1	27	2.8	81	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	30.13	765.3	30.28	769.1	51	10.6	40	N	12	5.4		Haze	0	Calm		0.03	0.8	Clear.	
Brackettville, Texas	28.84	732.5	29.86	758.4	71	21.7	90	E	6	2.7		0	5ks		E	0	0	Fair	
Breckenridge, Minnesota	29.12	739.6	30.10	764.5	60	15.6	65	S	22	9.8		5k	0	SW		0	0	Fair	
Brownsville, Texas	29.84	757.9	29.89	759.2	76	24.4	82	E	1	0.4		0	0			0	0	Clear.	
Buffalo, New York	29.72	754.9	30.44	773.2	47	8.3	77	SW	6	2.7		5c	0	N		0	0	Fair	
Burkes, Arizona					45	7.2	24	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	30.07	763.8	30.37	771.4	45	7.2	61	N	5	2.2		0	0			0	0	Clear	
Cairo, Illinois	29.91	759.7	30.30	769.6	59	15.0	54	E	8	3.6		0	Sm'e			0	0	Clear	
Campo, California	27.38	695.4	29.95	760.7	25	−3.9	87	Calm	0	0		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.24	768.1	30.25	768.3	55	12.8	50	NE	27	12.1		2k	0	NE		0	0	Fair	
Cape Henry, Virginia	30.28	769.1	30.30	769.6	54	12.2	55	N	24	10.7		0	2ks		NE	0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.25	768.3	57	13.9	41	NE	31	13.9		2k	0	Calm		0	0	Fair	
Cape May, New Jersey	30.30	769.6	30.33	770.4	54	12.2	45	N	13	5.8		0	0			0.09	2.3	Clear.	
Castroville, Texas	29.20	741.7	29.89	759.2	70	21.1	85	NW	1	0.4		0	0			0	0	Clear.	
Cedar Keys, Florida	30.08	764.0	30.11	764.8	73	22.8	76	NE	14	6.3		5ck	0	N		0	0	Fair	
Charleston, South Carolina	30.24	768.1	30.30	769.6	60	15.6	71	NE	12	5.4		0	0			0	0	Clear	
Charlotte, North Carolina	29.47	748.5	30.28	769.1	58	14.4	42	NE	5	2.2		0	Haze		Calm	0	0	Clear.	
Chattanooga, Tennessee	29.47	748.5	30.27	768.8	62	16.7	61	Calm	0	0		0	Haze		Calm	0	0	Clear.	
Cheyenne, Wyoming	24.11	612.4	30.05	763.3	40	4.4	31	NW	14	6.3		0	0			0	0	Clear.	
Chicago, Illinois	29.69	754.1	30.39	771.9	56	13.3	57	SE	6	2.7		0	0			0	0	Clear.	
Chincoteague, Virginia	30.31	769.9	30.33	770.4	51	10.6	76	N	21	9.4		0	0			0	0	Clear.	
Cincinnati, Ohio	29.72	754.9	30.39	771.9	50	10.0	52	NE	4	1.8		0	0			0	0	Clear	
Cleveland, Ohio	29.72	754.9	30.47	773.9	52	11.1	32	E	3	1.3		2cs	Haze	N	Calm	0	0	Fair	
Coleman City, Texas	28.24	717.3	29.85	758.2	69	20.6	70	SE	4	1.8		0	0			0	0	Clear	
Columbus, Ohio	29.53	750.0	30.39	771.9	46	7.8	60	NE	4	1.8		0	0			0	0	Clear	
Concho, Texas	28.13	714.5	29.76	755.9	66	18.9	79	NE	5	2.2		0	0			0	0	Clear	
Corsicana, Texas	29.59	751.6	30.04	763.0	71	21.7	80	NE	4	1.8		1ck	0	Calm		0	0	Clear.	
Davenport, Iowa	29.72	754.9	30.37	771.4	53	11.7	67	E	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					43	6.1	83	SE			1		10s		NW	0	0	Cloudy	
Deadwood, Dakota	25.44	646.2			42	5.6	83	Calm	0	0			10s		Calm	0.62	15.7	Cloudy	
Decatur, Texas	28.99	736.3	30.12	765.0	75	23.9	68	SE	4	1.8		0	0			0	0	Clear.	
Delaware Breakwater, Del.	30.31	769.9	30.34	770.6	51	10.6	65	NE	28	12.5		1k	0	Calm		0.02	0.5	Clear	
Denison, Texas	29.31	744.5	30.08	764.0	69	20.6	70	E	4	1.8		0	5ks		Calm	0.02	0.5	Fair	
Denver, Colorado	24.87	631.7	30.09	764.3	52	11.1	29	NW	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.41	747.0	30.29	769.4	57	13.9	63	S	6	2.7		0	0			0	0	Clear	
Detroit, Michigan	29.79	756.7	30.48	774.2	47	8.3	62	NE	3	1.3		10cs	0	Calm		0	0	Cloudy	
Dodge City, Kansas	27.53	699.2	29.78	756.4	58	14.4	82	E	5	2.2		5c	0	Calm		0.28	7.1	Fair	
Dubuque, Iowa	29.66	752.4	30.37	771.4	52	11.1	54	E	3	1.3		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.62	752.3	30.31	769.9	46	7.8	77	NE	1	0.4		1cs	0	Calm		Inap	Inap.	Clear	
Eagle Pass, Texas	29.19	741.1	29.89	759.2	77	25.0	63	E	5	2.2		5k	0	E		0	0	Fair	
Eastport, Maine	30.12	765.0	30.19	766.8	46	7.8	54	NE	10	4.5		0	0			0	0	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.74	755.4	30.47	773.9	48	8.9	63	SE	2	0.9		0	Haze		Calm	0	0	Clear.	
Escanaba, Michigan	29.78	756.4	30.45	773.4	50	10.0	65	S	7	3.1		10k	0	W		0	0	Cloudy	
Florence, Arizona	28.42	721.9	30.02	762.5	50	10.0	58	W	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.48	774.2	35	1.7	70	E	4	1.8		0	0			0	0	Clear.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.10	713.7	29.95	760.7	44	6.7	92	SW	3	1.3		5c	0	S		0	0	Fair	
Fort Custer, Montana	26.88	682.7			44	6.7	60	SE	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	60	15.6	77	Calm	0	0		0	0			Inap.	Inap.	Clear.	
Fort Elliot, Texas	27.09	688.1	29.26	743.2	64	17.8	68	SE	10	4.5		5c	0	SE		0	0	Fair	
Fort Gibson, Indian Ter	29.59	751.6	30.11	764.8	71	21.7	37	E	7	3.1		5cs	0	E		0	0	Fair	
Fort Grant, Arizona	25.17	639.3	29.97	761.2	51	10.6	10	S	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.79	731.3	30.04	763.0	65	18.3	78	Calm	0	0		0	0			0	0	Clear.	
Fort Keogh, Montana	27.35	694.7			46	7.8	60	NE	1	0.4		0	0			0	0	Clear	
Fort McKavett, Texas	27.78	705.6	29.64	752.8	67	19.4	72	E	2	0.9		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.84	733.8	29.96	761.0	72	22.2	67	E	4	1.8		0	0			0	0	Clear.	
Fort Stevenson, Dakota	28.17	715.5			51	10.6	86	NW	4	1.8		8c	0	Calm		0.04	1.0	Cloudy	
Fort Verde, Arizona					40	4.4	48	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.91	759.7	29.95	760.7	76	24.4	82	NE	20	8.9		2ck	5ks	E	E	0	0	Fair	
Grand Haven, Michigan	29.79	756.7	30.46	773.7	51	10.6	65	E	5	2.2		0	0			0	0	Clear	
Helena, Montana					42	5.6	56	SW	6	2.7			10s		Calm	0.05	1.3	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.57	751.1	30.36	771.1	53	11.7	48	NE	4	1.8		0	0			0	0	Clear	
Indianola, Texas	29.94	760.5	29.96	761.0	75	23.9	86	NE	17	7.6		0	1s		NE	Inap.	Inap.	Clear	
Jacksboro, Texas	28.94	735.1	30.04	763.0	70	21.1	66	SE	6	2.7		5k	0	S		0	0	Fair	
Jacksonville, Florida	30.14	765.5	30.17	766.3	71	21.7	66	NE	18	8.0		5cs;k	0	NE		0.45	11.4	Fair	
Keokuk, Iowa	29.67	753.6	30.28	769.1	57	13.9	69	E	7	3.1		0	0			0	0	Clear	
Key West, Florida	29.92	760.0	29.96	761.0	80	26.7	74	SE	4	1.8		1cs	0	Calm		0	0	Clear	
Kittyhawk, North Carolina	30.28	769.1	30.30	769.6	54	12.2	61	NE	36	16.1		0	5ks		NE	0	0	Fair	
Knoxville, Tennessee	29.28	743.7	30.29	769.4	59.5	15.3	44	NE	2	0.9		0	Haze			0	0	Dense haze	
La Crosse, Wisconsin	29.60	751.8	30.35	770.9	54	12.2	55	S	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	48	8.9	29	N	1	0.4		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.36	745.7	30.18	766.6	64	17.8	53	SE	5	2.2		1cs	0	SW		0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.84	757.9	30.16	766.1	65	18.3	58	NE	6	2.7		5c	0	W		0	0	Fair	
Los Angeles, California	29.66	753.4	30.01	762.2	46	7.8	77	N	3	1.3		0	1s		Calm	0	0	Clear.	
Louisville, Kentucky	29.74	755.4	30.31	769.9	53	11.7	48	NE	7	3.1		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.69	754.1	30.38	771.6	56	13.3	46	N	5	2.2		0	Haze			0	0	Clear.	
Madison, Wisconsin	29.37	746.0	30.38	771.6	50	10.0	65	E	6	2.7		0	0			0	0	Clear	
Marquette, Michigan	29.68	753.9	30.39	771.9	57	13.9	36	SW	7	3.1		5k	0	NW		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.39	721.1	30.10	764.5	68	20.0	84	S	1	0.4		0	0			0	0	Clear.	
Memphis, Tennessee	29.82	757.4	30.16	766.1	66	18.9	59	NE	7	3.1		5cs	Haze	Calm		0	0	Fair	
Milwaukee, Wisconsin	29.67	753.6	30.41	772.4	52	11.1	66	SE	3	1.3		1c	Sm'e	Calm		0	0	Dense smoke	
Mobile, Alabama	30.08	764.0	30.12	765.0	74	23.3	72	E	11	4.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Montgomery, Alabama	29.98	761.5	30.21	767.3	70	21.1	75	E	13	5.8		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.37	746.0	30.38	771.6	54	12.2	49	Calm	0	0		0	Haze			0	0	Clear	
Mt Washington, N H	23.89	606.8	30.25	768.3	19	— 7.2	69	NE	20	8.9		2c	0	Calm		0.12	3.0	Clear	
Nashville, Tennessee	29.74	755.4	30.27	768.8	63	17.2	52	NE	2	0.9		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.21	767.3	30.33	770.4	51	10.6	46	N	10	4.5		0	0			0	0	Clear	
New London, Connecticut	30.28	769.1	30.33	770.4	53	11.7	36	N	7	3.1		0	0			Inap	Inap.	Clear	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	75	23.9	81	E	24	10.7		2c	5ks	Calm	E	0	0	Fair	
Newport, Rhode Island	30.22	767.6	30.27	768.8	50	10.0	52	N	10	4.5		0	0			0	0	Clear	
New River, North Carolina					53	11.7	73	N			1	0	0					Clear	
New York, New York	30.17	766.3	30.36	771.1	51	10.6	52	NE	5	2.2		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	30.26	768.6	30.32	770.1	52	11.1	54	N	4	1.8			10n		W	Inap.	Inap.	Light rain	
North Platte, Nebraska	27.18	690.4	29.99	754.1	61	16.1	77	SW	8	3.6			10s		W	0.62	15.7	Cloudy	
Olympia, Washington Ter	30.05	763.3	30.09	764.3	39.0	3.9	96	W	2	0.9		5c	0	S		0.01	0.3	Fair	
Omaha, Nebraska	29.05	737.9	30.12	765.0	66	18.9	47	SE	12	5.4		5ck	0	S		0	0	Fair	
Oswego, New York	30.11	764.8	30.44	773.2	47	8.3	62	W	6	2.7		1c	0	E		0	0	Clear	
Pembina, Dakota	29.14	740.1	29.94	760.5	61	16.1	88	S	10	4.5			8ks		S	0.38	9.7	Cloudy	
Pensacola, Florida	30.10	764.5	30.13	765.3	72	22.8	72	E	19	8.5		7k	0	E		Inap.	Inap.	Fair	
Philadelphia, Pennsylvania	30.32	770.1	30.37	771.4	50	10.0	45	NE	16	7.2		0	Haze		Calm	0.01	0.3	Clear	
Phœnix, Arizona	28.79	731.3	30.59	777.0	55	12.8	56	Calm	0	0		0	0			0	0	Clear	
Pike's Peak, Colorado	17.86	453.6	30.07	763.8	19	— 7.2	54	S	16	7.2		0	0			0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	24.02	610.1	29.79	756.7	35	1.7	36	NW	7	3.1		0	0			Inap.	Inap.	Clear	
Pittsburg, Pennsylvania	29.60	751.8	30.44	773.2	46	7.8	69	NE	5	2.2		0	0			0	0	Clear	
Port Huron, Michigan	29.79	756.7	30.48	774.2	46	7.8	62	NW	2	0.9		8cs	0	N		0	0	Fair	
Portland, Maine	30.22	767.6	30.27	768.8	51	10.6	34	N	13	5.8		0	0			0	0	Clear	
Portland, Oregon	30.05	763.3	30.12	765.0	41	5.0	91	NW	1	0.4			Fog		Calm	0.06	1.5	Dense fog	
Portsmouth, North Carolina					57	13.9	52	NE	28	12.5		8k	0	NE		0	0	Cloudy	
Prescott, Arizona	24.75	628.6	30.11	764.8	31	— 0.6	48	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.98	761.5	75	23.9	77	NE	20	8.9		1c	8ks	S	NE	0	0	Cloudy	
Red Bluff, California	29.70	754.4	30.06	763.5	48.5	9.2	85	S	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas	29.77	756.1	29.98	761.5	73	22.8	81	N	5	2.2		0	5ks		Calm	0	0	Fair	
Rochester, New York	29.78	756.4	30.42	772.7	46	7.8	54	W	6	2.7		5cs	Haze	E	Calm	0	0	Fair	
Roseburg, Oregon	29.55	750.6	30.14	765.5	38	3.3	90	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.97	761.2	30.05	763.3	47	8.3	77	SE	5	2.2		0	0			0	0	Clear	
St. Louis, Missouri	29.72	754.9	30.30	769.6	59	15.0	48	E	10	4.5		0	0			0	0	Clear	
St. Paul, Minnesota	29.43	747.5	30.26	768.6	54	12.2	61	SE	6	2.7		0	0			0	0	Clear	
Salt Lake City, Utah	25.71	653.0	30.04	763.0	38	3.3	45	SE	2	0.9		0	0			0.71	18.0	Clear	
San Antonio, Texas	29.29	744.0	29.97	761.2	70	21.1	80	N	2	0.9		0	0			0	0	Clear	
San Diego, California	29.98	761.5	30.06	763.5	47	8.3	85	N	5	2.2		0	1ks		NW	0	0	Clear	
Sandusky, Ohio	29.77	756.1	30.46	773.7	52	11.1	47	E	10	4.5		5c	0	NW		0	0	Fair	
Sandy Hook, New Jersey	30.31	769.9	30.34	770.6	49	9.4	57	N	21	9.4		0	0			Inap	Inap.	Clear	
San Francisco, California	30.02	762.5	30.09	764.3	48	8.9	78	W	9	4.0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	43	6.1	14	Calm	0	0		0	0			0	0	Clear	
Savannah, Georgia	30.20	767.1	30.29	769.4	64	17.8	63	NE	8	3.6		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.86	758.4	30.07	763.8	73	22.8	75	E	5	2.2		0	8s		W	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.26	768.6	30.30	769.6	56	13.3	63	N	10	4.5		0	0			0	0	Clear	
Socorro, New Mexico	25.43	645.9	29.49	749.0	47	8.3	21	NW	2	0.9		0	0			0	0	Clear	
Springfield, Illinois	29.68	753.9	30.36	771.1	56.5	13.6	51	E	13	5.8		0	0			0	0	Clear	
Springfield, Massachusetts	30.20	767.1	30.34	770.6	50	10.0	45	NE	10	4.5		0	0			0	0	Clear	
Stockton, Texas	26.93	684.0	29.93	760.2	68	20.0	74	SE	28	12.5		0	0			0	0	Clear	
Thatcher's Island, Mass	30.22	767.6	30.27	768.8	49	9.4	78	N	11	4.9		0	0			0.15	3.8	Clear	
Toledo, Ohio	29.70	754.4	30.39	771.9	56	13.3	51	NW	5	2.2		5c	0	E		0	0	Fair	
Tucson, Arizona	27.50	698.5	30.05	763.3	62	16.7	32	SE	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.70	754.4	30.19	766.8	50	10.0	72	SW	1	0.4		8cs	0	W		0	0	Cloudy	
Uvalde, Texas	29.05	737.9	29.84	757.9	71	21.7	85	E	4	1.8		0	0			0	0	Clear	
Vicksburg, Mississippi	29.88	758.9	30.13	765.3	72	22.2	76	E	7	3.1		8c	0	Calm		0	0	Fair	
Virginia City, Montana	24.24	615.7	29.72	754.9	37	2.8	63	Calm	0	0			10s		Calm	0.04	1.0	Cloudy	
Visalia, California	29.62	752.3	29.99	761.7	43.5	6.4	88	NW	2	0.9		0	0			0	0	Clear	
Washington, D. C	30.30	769.6	30.42	772.7	52	11.1	47	N	7	3.1		0	0			0	0	Clear	
Wickenburg, Arizona					56	13.3	35	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.22	767.6	30.30	769.6	55	12.8	62	NE	10	4.5		0	Haze		Calm	0	0	Clear	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	35	1.7	80	E	5	2.2		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.19	766.8	30.23	767.8	51	10.6	46	N	14	6.3		1ck	0	W		0	0	Clear	
Yankton, Dakota	28.87	733.3	30.13	765.2	65	18.3	49	S	4	1.8		5c	0	Calm		0	0	Fair	
Yuma, Arizona	29.76	755.9	29.91	759.7	53	11.7	73	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.04	559.8			54.2	12.3	77	Calm	0	0		5cs;k	2ks			0.35	8.9	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.92	760.0	29.97	761.2	77	25.0	86	SE	2.4	1.1		8cs	0	SW		0.29	7.4	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.95	760.7	29.96	761.0	80	26.7	91	SE	8	3.6		5c	2ks	Calm	SE	0.55	14.0	Cloudy	James Gall.
Navassa, W. I.	29.86	758.4	29.94	760.5	79	26.1	82	E	9	4.0		2k	10	SE	E	0	0	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	84	28.9	75	E			2	5ck	0	E		1.900	48.26	Fair	C. J. Hering.
Puerto Rico, U.S.Col'bia ‖	29.46	748.3	30.01	762.2	79	26.1	80	Calm			0		5k			0.01	0.3		Francesco J. Cisneros.
Rivas, Nicaragua					72	22		SW				6ck;k		NE		0.16	4.	¾ covered	Carl Flint.
Santiago de Cuba, W. I.	29.95	760.7	29.98	761.5	76	24.4	90	Calm	0	0			8n		NE	2.062	52.37	Raining	Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.03	762.7	30.08	764.0	31.0	— 0.6	95	NE	10	4.5			9s		N	Inap.	Inap	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m., Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,090 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 milimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.19	765.0	71	21.7	80	NE	19	8.5			8		NE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.24	768.1	50	10.0	72	NNE	8	3.6			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.96	761.0	59	15.0	73	SW			1	2c	Haze		Calm	0	0			Fair	
§ Adams, Punta Arenas, Costa Rica	29.94	760.5	79	26.1	86	ENE			0–1		5		ENE					Fair	
§ Alaska, Ancon, Peru *	29.97	761.2	64	17.8	89	Calm			0		10					Smooth		Cloudy	
§ Alert, N. 31° 27′, E. 142° 37′	29.92	760.0	70	21.1	80	E			5		10		E			Mod'ate	NE	Cloudy	
Alliance, Norfolk, Va.	30.30	769.6	55	12.8	62	NE			2		10			L'ght	Light			Overcast	
Colorado, New York, N. Y.	30.28	769.1	52	11.1	93	NNE	4	1.8			2			0	0			Clear	
§ Constitution, Hampton Roads, Va.	30.31	769.9	54	12.2	67	N	14	6.3			10		N					Drizzling	
§ Franklin, Off Navy Yard, Norfolk, Va	30.31	769.9	54	12.2	67	NNE	8	3.6			10		NNE	0	0			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	30.05	763.3	48	8.9	??	NW	1.2	0.5			2		W	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.00	762.0	39	3.9	100	Calm			0		0					Smooth		Clear	
Kearsarge, Boca del Toro, Chiriqui	29.98	761.5	82	27.8	87	Calm			0		5		SSE			Smooth		Fair	
§ Marion, Off Flores Isl'd, Uruguay	30.09	764.3	56	13.3	81	NW			2					0	0	Smooth		Foggy	
§ Michigan, Erie, Pa.	30.41	772.4	41	5.0	??	S			1		0							Clear	
§ Monocacy, Shanghai, China	29.97	761.2	55	12.8	87	WSW			2		10		SW					Rainy	
§ New Hampshire, Port Royal, S. C.	30.27	768.8	61	16.1	66	NNE	10	4.5			0			0	0			Clear	
Nipsic, Villafranca, France	29.89	759.2	65	18.3	78	SSW			6		8					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	29.99	761.7	64	17.8	89	Calm			0		10					Long	W	Cloudy	
§ Palos, Shanghai, China	30.04	763.0	54	12.2	93	ENE			2		10							Drizzling	
§ Passaic, Washington, D. C.	30.39	771.9	52	11.1	73	NE			2		0							Clear	
§ Pensacola, Vallejo, Cal.	30.00	762.0	45	7.2	92	NNW			1		3		SE			Smooth		Blue sky	
§ Powhatan, Annapolis, Md.	30.37	771.4	49	9.4	100	N			2		0							Clear	
§ Quinnebaug, N. 36° 18′, W. 7° 46′	29.72	754.9	61	16.1	88	S			4		8		SW			Long	WNW	Fair	
§ Richmond, Shanghai, China	30.06	763.5	56	13.3	94	E			2		0?			0.50	12.7			Raining	
§ Rio Bravo, Brownsville, Texas †	30.05	763.3	70	21.1	100	NW	2	0.9			5?		Calm	0	0			Cloudy?	
§ Saratoga, N. 39° 15′, W. 11° 20′	29.68	753.9	61	16.1	77	ESE			4		10		Calm	Heavy	Heavy	Long	NW	Hazy	
§ Shenandoah, Montevideo, Uruguay	30.09	764.3	48	8.9	100	N			2		2					Smooth		Fair	
§ St. Louis, League Island, Pa.	30.31	769.9	53	11.7	54	N	13	5.8			0			0	0			Clear	
Swatara, Singapore, India †	29.80	756.9	84	28.9	91	ESE			1		8		Calm			Smooth		Fair	
§ Tennessee, Aspinwall, Panama	29.96	761.0	79	26.1	91	SSE	2	0.9			2		Calm	0	0	Smooth		Clear	
Ticonderoga, Yokohama, Japan	29.96	761.0	62	16.7	94	SSW			1		2					Smooth		Fair	
§ Trenton, Piraeus, Greece	29.77	756.1	72	22.2		NNE			3		8			8 hours mod'ate	8 hours mod'ate			Cloudy	
§ Tuscarora, Mare Island, Cal.	30.10	764.5	56	13.3	81	W			2		2		W	0	0			Fair	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.34	770.6	52	11.1	60	NE			3		0							Clear	
§ Wabash, Boston, Mass.	30.32	770.1	48	8.9	49	NNW	10	4.5			2			0.3	0.01			Clear	
§ Wachusett, S. 38° 06′, W. 55° 36′	30.03	762.7	48	8.9	100	NNW			3		2		N	0	0	Long	N	Clear	
Wyoming, N. 36° 40′, E. 21° 42′	29.81	757.2	69	20.6	70	W			2		2		W			Smooth	W	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 17', W. 28° 54'	30.09	764.3	53	11.7		SSE			4		8		SSE			Mod'ate	ENE	Fair	
S. S. Moravian, J. Graham																			
S. S. Peruvian																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air																			A. Christie & F. W. Erskine
																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, Jr
S. S. Indiana, R. W. Sargent, N. 50° 27', W. 23° 28'	30.07	763.8	56	13.3	87	E			4		8		ESE	0	0	Mod'ate	S	Cloudy	
S. S. Ohio, Henry Morrison, N. 39° 16', W. 58° 20'...*†	29.79	756.7	56	13.3	94	NE			5		10		NE	3 h'rs	3 h'rs	Large	NE	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 23° 34', W. 108° 08'....†	29.80	756.9	73	22.8	76	WNW			3		5		NW	0	0	Small	NW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 41° 47', W. 52° 13'.....*	29.68	753.9	59	15.0	76	N			2		10		N	Drizzles.	Drizzles.	Smooth	NE	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 42° 39', W. 54° 34'	29.81	757.2	49	9.4	85	WNW			2		8		W	4 h'rs	4 h'rs	2	WNW	Hazy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China.....†	29.93	760.2	84	28.9	91	ESE			3		2		ESE			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal.....†	30.07	763.8	48	8.9	92	W			3		k		W	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Pt. Hueneme, Cal.....†	30.05	763.3	52	11.1		SW			2		0					Mod'ate	SW	Clear	
§ S. S. Idaho, E. Alexander, S. S. Orizaba																			
§ S. S. State of California, G. Debney, N. 37° 44', W. 123° 05'....†	29.49	749.0	46	7.8		NW			2		2		W			Light	N	Pleasant	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 21° 31′, W. 105° 20′....†	29.83	757.7	72	22.2	67	N	.....	.....	1	.....	2	.....	Calm	.....	.....	Mod'ate	WSW	Clear.....	F. A. Johnston.
§ S. S. Australia,.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Banneman.
§ S. S. China, W. B. Seabury, N. 22° 58′, W. 106° 24′....†	29.82	757.4	72	22.2	85	NE	.....	.....	1	.....	0	.....	.....	.....	.....	Mod'ate	W	Clear.....	.....
§ S. S. City of New York, W. B. Cobb, N. 28° 48′, W. 123° 18′....†	30.37	771.4	67	19.4	74	SW	.....	.....	2	.....	2	.....	W	0	0	Mod'ate	E	Clear.....	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 34° 20′, W. 120° 06′....†	30.02	762.5	51	10.6	.....	NNW	.....	.....	3	.....	0	.....	.....	0	0	Mod'ate	NW	Clear.....	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 36° 25′, W. 175° 39′....†	30.00	76 .0	59	15.0	82	WSW	.....	.....	5	.....	2	.....	WSW	.....	.....	Mod'ate	WSW	Fair.....	.....
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	30.18	766.6	66	18.9	.....	SW	.....	.....	4	.....	2	.....	SW	0	0	Smooth	.....	Clear.	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 37° 02′, E 143° 57′....†	29.97	761.2	66	18.9	68	NW	.....	.....	4	.....	8	.....	NW	Blank	Blank	Mod'ate	E	Cloudy.....	F. S. Doane.
§ S. S. Colima, R. R. Searle, San Jose, Guatemala...†	29.95	760.7	81	27.2	96	N	.....	.....	2	.....	10	.....	N	0.01	0.3	Heavy ground	S	Cloudy.....	.....
§ S. S. Dakota, D. E. Griffiths Tacoma, Washington Ter.....†	30.09	764.3	52	11.1	79	Calm	.....	.....	0	.....	10	.....	.....	0	0	.....	.....	Hazy.....	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 24° 20′, W. 112° 15′....†	30.08	764.0	60	15.6	82	NNW	.....	.....	4	2c	.....	Calm	.....	0	0	Mod'ate	NW	Hazy.....	.....
§ S. S. Idaho, San Francisco, Cal.....†	30.06	763.5	.....	.....	.....	Calm	.....	.....	0	.....	2	.....	Calm	0	0	Rough	.....	Fair	.....
§ S. S. Zealandia, R. C. Ghest, N. 32° 57′, W. 135° 02′.....	30.0[illegible]	762.5	.....	.....	.....	ENE	.....	.....	2	.....	.....	.....	NE	.....	.....	Smooth	NE	Fine.....	.....
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
S. S. Nederland, S. Stokes,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 49° 59′, W. 21° 13′....†	29.85	758.2	55	12.8	.....	E	.....	.....	5	.....	10	.....	E	.....	.....	Rough	E	Rain & hail.	W. S. Waugh.
S. S. Britanic, H. Perry.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. Jones.
S. S. Celtic, B. Gleadell, N. 48° 37′, W. 32° 33′....*†	30.19	766.8	54	12.2	.....	S	.....	.....	3	.....	5	.....	SSW	0	0	Smooth	.....	Fair...	.....
S. S. Republic, P. J. Irving	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schr. Addie Fuller, J. Jorgensen, N. 33° 11′, W. 78° 08′.....	30.25	768.3	63	17.2	57	NE	14	6.3	.....	.....	5k	.....	NE	0	0	Rough	NE	D. clouds....	Mehaffey.
Schr. Annie R. Lewis, L. L. Lewis N. 29° 45′, W. 60° 30′.....†	29.78	756.4	77	25.0	.....	SSW	.....	.....	8	.....	10	.....	SW	Sprin	kles.	Heavy	SSW	Threatening	J. Jorgensen. L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 3[illegible]° 47′, E. 28° 18′..... †	29.95	760.7	77	25.0	.....	NE	.....	.....	4	.....	0	.....	.....	0	0	Smooth	SW	Fair.....	B. F. Woodbury.
Brigantine George, W. H. Compliu. Monabo, Porto Rico ....†	30.14	765.5	84	28.9	.....	SSE	.....	.....	1	.....	0	.....	.....	0	0	Smooth	.....	Clear.....	.....
Hippolyta, N. 51° 49′, W. 7° 20′.....*	29.88	758.9	58	14.4	.....	ENE	.....	.....	6	.....	5	.....	E	0	0	Smooth	.....	Fair...	.....
Iron Cross, W. Randall.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. Randall.
Barque Syringa, E. Lewis...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 16, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.80	756.8				SW			7		7			0.059	1.5	Very cloudy	Dr. Ollive.
Nemours			29.69	754.1	71.1	21.7	69	E			1		7			0	0	Very cloudy	Metge.
Algiers			29.75	755.6	68.4	20.[illegible]	65	WNW			3		10			0	0	Covered	Nicolas.
La Calle			29.73	755.1	77.9	25.[illegible]	61	SSW			2		0			0	0	Clear	Fonfrède.
Tunis			29.77	755.2															Jacques.
Sfax			29.89	759.1															Gau.
Saida			29.76	755.8															Bernard.
Tebessa			29.85	758.3	86.0	30.0	11	S			6		2			0	0	Fair	Watrin.
Geriville					75.7	24.[illegible]	34	SW			3		0			0	0	Clear	Brugniaux.
Laghouat			29.76	755.9	84.9	29.4	9	S			4		0			0	0	Clear.	Suart.
Biskra			29.77	756.1	91.8	33.[illegible]	26	E			5		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram																			
Cracow, I. R. Observatory	29.25	742.9	29.77	756.2	76.3	24.6	50	S			2		3			0	0		Prof. Ivan Stozir.
Eperies	29.01	736.9	29.76	755.8	65.8	18.8	60	NW	8.9	4.0			7			0.291	7.4		Dr. Wierzbicki.
Gratz	28.84	732.5	29.69	754.0	66.4	19.1	62	N			2		10k		SE	0	0		Julius Mikolik.
Hermannstadt	28.58	725.9	29.77	756.2	72.5	22.5	48	W			2		5			0	0		Andreas Rospini.
Kremsmünster, Observatory	28.26	717.8	29.65	753.1	61.3	16.3	69	NW			4		10			0.008	0.20		Prof. A. Gottschling
Lemberg	28.50	724.0	29.79	756.7	70.5	21.4	61	NE			1		5			0.102	2.6		The Staff.
Pola	28.67	728.2	29.63	752.7	59.5	15.3	90	W			1		10			0.173	4.4		Dr. T. Stanecki.
Szathmar	29.74	755.3	29.85	758.1	72.3	22.4	58	W			1		3			0	0		I.R. Hydrographic Office.
Szegedin	29.21	741.8	29.65	753.2	68.7	20.4	61	SW			4		8			0.374	9.5		Pet. Pancsics, S. J.
Trieste	29.42	747.2	29.69	754.0	68.0	20.0	67	NW			1		7			0.088	2.25		Karl Stancel.
Vienna	29.74	755.3	29.84	757.9	75.2	24.0	72	WNW			1		4			0	0		P. Busin.
	29.13	739.9	29.85	758.2	61.9	16.6	68	W			2		9			0.067	1.7		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels																			Royal Observatory
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 13, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.27	768.8	30.37	771.4	47.7	8.7		SE	7	3.1			9			0	0	Ove cast	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	30.04	763.0	30.27	768.8	56.0	13.3		ENE	9	4.0									S. Call.
Bidston (Liverpool Obs)			30.21	767.3	59.4	15.2		E	21	9.4			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.69	754.1	30.20	767.1	56.6	13.7		NE	27	12.1			8					D. clouds	Thomas Mackereth.
Bradford, Yorkshire																0	0		J. McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	30.00	762.0	84	28.9		NE			2		2					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	30.10	764.5	30.19	766.8	60.0	15.6		NE			3		0					Blue sky	H. Todd.
Cardington			30.16	766.1	58.0	14.8		NE			2		1					Blue sky	John McLaren.
Chatham (School M. E.)	30.00	762.0	30.13	765.3	63.0	17.2		NE			2		0					Blue sky	Sapper W. Gibson, R. E.
Donaghadee	30.26	768.6	30.30	769.6	55	12.8		E			2		5					D. clouds	J. Mac Gowan.
Dover	30.06	763.5	30.09	764.3	53	11.7		NE			6		3					¼ clouded	J. Costello.
Falmouth (Observatory)	29.81	757.2	30.03	762.7	61.4	16.3		ENE			5		0					Misty	The Staff.
Fort Napier, Natal	27.54	699.5	29.75	755.6	63.4	17.4		N			2		7					Overcast	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	86	30.0		SE			2		4					D. clouds	
Galway (Queen's College)			30.14	765.5	64	17.8		NE			2		4					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean ‖	29.60	751.8	29.65	753.1	62.0	17.0		E			2		8					Gloomy	Sr t. W. Allen.
Glasgow, (Observatory)	30.12	765.0	30.33	770.4	52.0	11.1		NE			4		7k					D. clouds	D. G. Maclean.
Great Yarmouth	30.19	766.8	30.20	767.1	52	11.1		NE			5		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.94	760.5	30.11	764.8	64.5	18.1		NE			5		0					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.75	755.6	29.98	761.5	53.5	11.9		NE			5		7					Gloomy	Dr. S. E. Hoskins, F.R.S.
Helston	30.18	766.6	30.30	769.6	69	20.6		NE			8	c				0	0	Fine	M. P. Moyle.
Holyhead	30.16	766.1	30.19	766.8	58	14.4		ENE			5		0					Blue sky	John Tilston.
Jersey	29.65	753.1	29.95	760.7	57.0	13.9		ENE			7		0					Blue sky	J. Fisher.
Kew (Observatory)	30.08	764.0	30.12	765.0	61.3	16.3		NE	27	12.1			2					Misty	The Met'g'l Office.
Leicester (Museum)	29.96	761.0	30.21	767.3	55.0	12.8		NE			4		2					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.80	756.9	29.88	758.9	72	22.2		SE			2		0					Blue sky	A. King.
Nairn	30.23	767.8	30.33	770.4	56	13.3		ENE			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.13	765.3	74.0	23.3		N			5		8			Blank	Blank	D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.04	763.0	30.24	768.1	56.0	13.7		NNE			4		1k		ENE	0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.67	753.6	30.19	766.8	56.8	13.8		ENE			5		2					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.92	760.0	30.18	766.6	60	15.6		NE			5		0					Blue sky	The Staff, for E. J. Stone, Esq.
Plymouth	29.95	760.7	30.03	762.7	66.5	19.1		ENE			5		0					Blue sky	John Merrifield.
*Roche's Point	30.07	763.8	30.19	766.8	60	15.6		ESE			5		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.96	761.0	30.12	765.0	60	15.6		E			3		0					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.36	771.1	51	10.6		WNW	15	6.7			2					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.66	753.4	29.73	755.1	66.6	19.2		S			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	30.00	762.0	30.28	769.1	55.7	13.2		NE			3		3			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.26	768.6	30.29	769.4	53.9	12.2	58	E			6		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.26	768.6	55.2	12.9		NE	17	7.6			0					Blue sky	Rev. S. J. Perry.
Stratfield Turgiss	29.89	759.2	30.11	764.8	63.9	17.7		N			3		0					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.04	763.0	30.05	763.3	75	23.9		E			6		3					D. clouds	W. Newcombe.
Valencia Observatory)	30.08	764.0	30.11	764.8	63.4	17.4		SW	18	8.0			6			Blank	Blank	D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	30.29	769.4	30.33	770.4	59.0	15.0	79	WNW	3.1	1.4		0	4			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.52	749.8	56.0	13.3	73	W			1		8k			0.07	1.8	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.38	771.6	55.0	12.8		E			2					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.93	760.2	30.12	765.1	75.1	23.9	57	SE	20.5	9.2		1	4		ESE	0.07	1.8	Squally	C. Meldrum.
Melbourne (Observatory)	30.04	763.0	30.13	765.3	50.7	10.4	87	NE	5	2.2			8			0.03	0.8	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.33	770.4	51	10.6		N			3	3	3	N		0	0		J. Youngclause.
North Unst, Shetland I's			30.34	770.6				NW			2		2			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Raining	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 42', W. 5° 31'			Misty	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.24	666.5	29.96	761.0	72.5	22.5	78	NE			1	8ck;cs				0.79	20.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	29.94	760.5	29.99	761.7	51.4	10.8	64	NW			4		10						
Fanöe	30.02	762.6	30.04	763.1	57.0	13.9	58	NW			4		7						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.29	769.3	30.33	770.4	48.6	9.2	87	Calm			0		2						
Thorshavn (Faröe)	30.31	769.9	30.35	770.8	49.3	9.6	86	Calm			0		7						
Vestervig	30.00	761.9	30.09	764.3	50.5	10.3	60	NNE			2		1						

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.36	745.8	29.91	759.8	73.4	23	48	E			4		1kn			0	0	Clear.	Collignon, Director.
Amiens, Normal School	29.90	759.5	30.01	762.3	71.6	22	94	NE			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.73	755.2	29.98	761.6	66.0	18.9	48	ENE			2		2k			0	0		Klein, Commandant.
Avignon, Normal School	29.74	755.5	29.82	757.5	79.2	26.2	47	SSW			1		1			0	0	Clear	Giraud, Director.
Bar-sur-Seine	29.31	744.4	29.84	757.8	75.6	24.2	32	SE			1		5kn		ESE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.69	754.0	29.94	760.5	70.0	21.1	44	NE			3		0			0.217	5.5	Clear	Frère Eugene Marie.
Besançon, Normal School	28.97	735.8	29.32	757.3	75.4	24.1	52	E			1		2		SW	0	0	Slightly cl'dy	A. Carré, Director.
Bordeaux	29.48	748.8	29.68	753.8	76.3	24.6	30	SE			2		5		S	0	0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.96	735.5	29.88	758.9	78.8	26	48	W			1		2k	NE	NE	0.31	8.	Slightly cld'y	Marlot, Director.
Bourges, Normal School	29.28	743.6	29.80	757.0	75.9	24.4	63	E			1		2sn		NE	0	0	Slightly cld'y	M. Gence, Director.
Brest, Naval Observatory	29.64	752.9	29.89	759.1	64.8	18.2	69	NE			4		1		NE	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.80	757.0	29.87	758.8	57.6	14.2	76	NNE			3		0			0	0	Very clear	M. Bletrix, Director.
Carcassonne, N. School	29.32	744.7	29.72	754.8	69.8	21	41	E			2		5		E	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.53	750.0	29.84	757.8	79.7	26.5	50	SE			1		5			0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.29	743.9	29.84	757.8	73.6	23.1	93	SW			3		3		SW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.43	722.1	29.63	752.5	79.3	26.3	32	E			1		2			0	0		Alluard, Director.
Commercy, Normal School	29.02	737.2	29.84	758.0	73.4	23	53	E			1					0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.71	729.2	29.85	758.2	78.8	26.0	43	SW			2		5		SE	0	0		L. Kina, Director.
Grenoble, Normal School	29.03	737.3	29.76	755.8	76.3	24.6	54	NW			1		k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.54	750.4	29.75	755.6	79.2	26.2	43	NW			1		0			0	0	Clear.	Mouillot, Director.
Le Mans, Normal School	29.54	750.2	29.83	757.7	73.0	22.8	55	E			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.97	735.8	29.86	758.4	74.5	23.6	53	N			1		2k		S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.71	754.6	29.82	757.4	70.5	21.4	67	NE			6		0			0	0	Clear	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.19	741.5	29.78	756.4	78.3	25.7	28	SW			1		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.55	750.6	29.82	757.3	73.2	22.9	59	WSW			1		3		SW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.86	733.0	29.86	758.4	72.0	22.2	44	NNE			4		n		NNE	0	0		Barbier, Director.
Mont-Louis	24.60	624.8	29.84	757.8	52.5	11.4	71	N	3.8	1.7			7		W	0	0		M. Cave, for Dr. Fines.
Nice	29.84	757.8	29.87	758.8	66.6	19.2	79	E			3		2	E	E	0	0	Slightly cld'y	Capt. Boissière, Director.
Nismes, Normal School	29.61	752.1	29.81	757.2	78.3	25.7	38	S			1		0			0	0	Clear.	M. Boyer, Director.
Perpignan	29.68	753.8	29.78	756.5	68.4	20.2	39	SE	15.0	6.7			7	NW	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.36	567.9			43.7	6.5							5		SE	0	0	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.74	730.0	29.75	755.6	78.4	25.8	24	S			1		0			0.728	18.5	Clear	M. Tallieu
Puy de Dome (Summit) Ob	25.05	636.2			56.7	13.7	52	ESE			3		2			0	0	Light mist	Alluard, Director.
Rochefort, Naval Obs'y	29.69	754.2	29.72	755.0	81.9	27.7	34	ENE			2		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	29.84	758.0	29.93	760.2	73.8	23.2	44	NNE			3		0			0.008	0.2	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	29.86	758.4	29.89	759.2	62.1	16.7	70	NE			6		0			0	0	Clear	Lt. Hercouet, Director
Saint Maur (near Paris)	29.71	754.7	29.88	758.9	77.0	25.0	43	NE			3		5		ENE	0	0		E. Renou, Director.
Tarbes, Normal School	28.65	727.8	29.69	754.0	71.6	22	100	NW											T. Huguet, Director
Toulouse, Observatory	29.04	737.5	29.76	755.8	69.1	20.6	36	SSE			4		10			0	0	Covered	B. Bailland, Dir.
Tours	29.59	751.5	29.78	756.5	78.8	26.0	42	E			3		2		E	0	0	¼ covered	M. de Tastes.
Versailles, Observatory	29.41	746.9	29.90	759.4	75.2	24.0	67	E			4		0			0	0	Clear.	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.07	738.3	29.74	755.3	82.4	28	27	ESE			1		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.21	767.3	30.24	768.0	81.0	27.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.57	751.0			74.1	23.4	46	NE			2		7			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.99	761.8	30.02	762.4	59.4	15.2	92	SE	3.4	1.5			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 158 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upper. 0–10.	Clouds. Amount. Lower. 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.06	738.0	29.91	759.8	72.3	22.4	39	NE			4		3k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.69	754.2	29.84	758.0	68.0	20.0	40	W			4		2			0	0		Prof. Dr. Arndt.
Breslau	29.33	745.0	29.86	758.4	68.9	20.5	35	NW			3		6			0.043	1.08		Royal University Obs'y
Carlsruhe	29.44	747.8	29.85	758.2	74.8	23.8	51	NE			0		1	E		0	0		Albert Senz.
Cassel	29.35	745.4	29.95	760.8	69.1	20.6	24	NNW			4		2			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.59	751.6	29.95	760.8	74.3	23.5	12	NNE			2		4			0	0		Physical Society.
Friedrichshafen	28.43	722.1	29.80	757.0	71.8	22.1	56	NE			3		5	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.91	759.6	29.98	761.4	60.1	15.6	68	NNW			5		7			0	0		Dr. Reinhold Kleeman.
Kiel	29.97	761.1	29.98	761.5	54.1	12.3	76	NNE			4		0			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.66	753.3	29.74	755.4	58.6	14.8	51	NW			5		5	W		0	0		Prof. E. Luther.
Köslin			29.89	759.1	50.0	10.0		N			4		4			0	0		H. Müller.
Leipsic Observatory	29.50	749.2	29.91	759.6	69.3	20.7	29	NNW			3		3			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.70	754.3	29.92	760.0	68.4	20.2	45	WNW			5		0			0	0		Dr. Assmann.
Memel	29.70	754.3	29.74	755.5	58.1	14.5	69	N			3–4		3s						Reinbrecht & Issermann.
Munich	28.07	713.0	29.93	760.1	70.7	21.5	55	N			2		3	N		0	0		Dr. C. Lang.
Neufahrwasser	29.82	757.5	29.84	757.9	43.7	6.5	90	NNW			5		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.37	746.1	29.90	759.4	74.8	23.8	38	NE			1					0	0		Realiehrer Dicknether.
Posen	29.52	749.7	29.80	756.8	70.0	21.1	45	NW			4		6			0.020	0.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.34	745.3	29.87	758.7	74.3	23.5	47	NE			4		2			0	0		Imp. University Observatory.
Stuttgart	28.94	735.1	29.80	756.9	73.0	22.8	41	N					2	N		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.42	721.8	29.99	761.8	69.1	20.6	62	NE	1.3	0.6			6k		NE	0	0		Realiehrer J. Hopfner.
Wustrow	29.93	760.2	29.95	760.8	50.9	10.5	80	E			4		10s			0	0		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.44	747.8	29.82	757.5	73.4	23.0		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.61	752.1	29.66	753.4	85.1	29.5	79	SSW					8	S		0	0	Misty	
Deesa	29.16	740.8	29.61	752.2	104.8	40.4	15	WNW	8.6	3.8			1	SSE		0	0	D. clouds	
Bombay	29.72	754.8	29.75	755.7	86.7	30.4	70	W	14	6.3			0			0	0	Blue sky	
Poona (Yarrowda)	27.87	707.9	29.66	753.4	94.3	34.6	25	W	24	10.7			1			0	0	D. clouds	
Belgaum	27.22	691.5	29.72	755.0	81.8	27.7	64	W	10	4.5			4	NE		0	0	D. clouds	
Lahore	28.86	732.9	29.57	751.0	97.2	36.2	29	Calm	1.8	0.8			0			0	0	Blue sky	
Roorkee	28.75	730.3	29.62	752.3	94.8	34.9	27	Calm	2	0.9			1			0	0		
Agra	29.08	738.7	29.62	752.4	99.6	37.6	23	N	3.6	1.6			0			0	0		
Nagpur	28.58	726.0	29.57	751.1	103.5	39.7	13	Calm	3.9	1.7			3	SW		0	0	D. clouds	
Jubbulpore	28.30	718.8	29.61	752.2	97.9	36.6	17	N	2.6	1.2			6			0	0	D. clouds	
Lucknow	29.13	739.9	29.49	749.0	97.5	36.4	21	NNE	0.5	0.2			0			0	0	Blue sky	
Allahabad	29.31	744.4	29.61	752.1	94.3	34.6	40	Calm	1.0	0.4			0			0	0	Blue sky	
Patna	29.46	748.4	29.64	752.8	95.6	35.3	35	NNE	1.2	0.5			2	NE	NE	0	0		
Hazaribagh	27.70	703.1	29.69	754.2	77.8	25.4	62	ESE	8.3	3.7			7		S	0	0	Thunder	
Cuttack	29.59	751.6	29.67	753.6	90.0	32.2	56	SSE	3.8	1.7			0			0	0	Blue sky	
Calcutta (Alipore)	29.63	752.5	29.65	753.1	82.3	27.9	87	SW	1.0	0.4			0			0	0	Blue sky	
Goalpara	29.26	743.3	29.66	753.4	86.7	30.4	62	Calm	2.8	1.2			0			0	0	Blue sky	
Chittagong	29.61	752.0	29.70	754.3	87.5	30.8	71	NW	3.5	1.6			0			0	0		
Sibsagar	29.36	745.7	29.69	754.1	85.6	29.8	70	NE	2.0	0.9			0			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m., Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.45	748.0	29.85	758.3	76.6	24.8	42	SW	3.8	1.7			5			0	0		Prof. Giovanni Clodig.
Milan	29.29	743.9	29.78	756.5	75.9	24.4	42	SW	3.8	1.7			5	SW		0.012	0.3		Prof. Schiaparelli.
Padua	29.73	755.2	29.84	757.9	74.1	23.4	45	WSW	1.3	0.6			3	E		0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.93	734.7	29.82	757.5	73.4	23.0	52	S	2.5	1.1			3	NE		0	0		Prof. P. F. Denza.
Genoa	29.71	754.5	29.89	759.3	67.1	19.5	77	SW	3.1	1.4			4	NE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.96	710.2	29.85	758.3	72.3	22.4	41	NW			2		2			0	0		Prof. D. C. Bruno.
Pesaro	29.80	757.0	29.85	758.2	70.7	21.5	60	NNE	7.4	3.3			2			0	0		Prof. Luigi Guidi.
Florence	29.61	752.0	29.86	758.5	75.2	24.0	57	NW			2		1			0	0		Cav. F. Meucci.
Leghorn	29.80	757.0	29.89	759.1	70.9	21.6	55	SSW	3.1	1.4			2			0	0		Prof. P. Monte.
Rome	29.73	755.2	29.91	759.6	73.[illegible]	22.9	62	SW	6.9	3.1			4			0	0		Prof. P. S. Ferrari
Lecce	29.63	752.5	29.87	758.8	72.0	22.2	51	E	4.9	2.2			3			0	0		Prof. C. De Giorgi.
Cosenza	28.99	736.3	29.87	758.6	76.3	24.6	71	SW	4.3	1.9			0			0	0		Prof. D. Conti.
Cagliari	29.60	751.9	29.79	756.7	73.9	23.3	39	E			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.67	753.0	29.92	760.0	67.8	19.9	58	E	5.6	2.5			1			0	0		Prof. G. Ciacciatore.
Syracuse	29.82	757.4	29.86	758.5	72.5	22.5	61	E	9.8	4.4			10	WNW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.38	746.2	29.89	759.1	70.3	21.3	73	NE	6.3	2.8			3	NE		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					57.7	14.3	78	SW	1.9	0.8		ck	4cs			0	0	Fair	K. Sasaki.
Nagasaki, I. M. Obs'y	29.71	754.6	29.91	759.7	58.9	14.9	87	W	0.4	0.2		ck	9s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.85	758.2	29.92	759.9	52.2	11.2	93	NNW	6.3	2.8		0	10n			0.260	6.60	Raining	The Staff.
Wakayama	29.83	757.7	29.88	758.9	52.5	11.4	93	NE	3.3	1.5		ck	4s	N		0.058	1.47	Fair	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.09	637.2	30.17	766.3	51.8	11.0	36	SE			1	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato																			Vicente Fernandez.
Leon	24.45	621.0	30.05	763.2	66.[illegible]	19.[illegible]	75	W			2	0	0			0	0	Clear	Prof. M. Leal.
Mazatlan	29.75	755.6	30.01	762.2	67.5	19.7	89	N			1	0	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.12	587.2	30.09	764.2	56.[illegible]	13.6	70	Calm	0	0		0	0			0	0	Fine	The Staff
Morelia	24.07†	610.0†			69.8	21.0	37	NE			3	4c	5k	N	NE	0.11	2.8	Cloudy	M. Fena, M. D.
Pabellon (Aguascalientes)	24.02	610.2	29.95	760.8	64.8	18.2	73	SW			1	0	0			0	0	Light haze	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.43	595.1	30.23	767.9	50.[illegible]	10.5	40	NE	0.4	0.2		0	0			0.03	0.8	Very clear	Prof. P. Spina.
San Luis Potosi	24.26	616.3	30.22	767.6	59.5	15.3	58	SE			1	4	0	E		0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.93	760.1	29.94	760.4	78.[illegible]	25.6	91	Calm			0	0	0			0.13	3.4	Very clear	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.[illegible] m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft. Morelia, 1,940 m., or 6,36[illegible] ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.11	764.7	30.11	764.7	56.8	13.8		NNE			5					0	0		
Groningen	30.04	763.1	30.10	764.5	52.7	11.5		N								0	0		
Helder	30.13	765.2	30.13	765.2	49.6	9.8		N			4					0	0		
Hellevoetsluis	30.09	764.2	30.09	764.2	59.5	15.3	65	NNE			3					0	0		
Utrecht	30.06	763.5	30.11	764.7	58.1	14.5	61	NNE			4		2			0	0	L'tly cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.10	764.6	30.16	766.0	45.7	7.6	38	N	27.1	12.1	.....	.....	0	.....	.....	0.008	0.2	.....	
Brönö	30.08	764.1	30.12	765.1	35.6	2.0	68	WNW	9	4	.....	.....	5	.....	.....	0.059	1.5	Snowing	
Christiania	29.93	760.2	30.08	764.0	47.3	8.5	22	NE	13	6	.....	.....	7	.....	.....	0	0	.....	
Tromsö	29.94	760.5	30.00	761.9	34.2	1.2	55	ENE	4	2	.....	.....	6	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.96	761.0	30.14	765.5	63.1	17.3	77	NNE	.....	.....	3	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.59	726.2	29.58	751.2	59.0	15.0	66	SSW	4.3	1.9	.....	.....	10	.....	.....	0.315	8.0	.....	Dr. A. M. R. dos Santos
Funchal (Madeira)	29.57	751.1	29.66	753.3	64.8	18.2	66	NW	3.1	1.4	.....	.....	8	.....	.....	0.193	4.9	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.18	741.1	29.57	751.0	61.7	16.5	70	ESE	13.0	5.8	.....	.....	8	.....	.....	0.291	7.4	.....	The Staff.
Ponta Delgada (Azores)	30.02	762.4	30.09	764.2	62.6	17.0	70	N	15.4	6.9	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. d Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Mossamedes, Benguela	.....	.....	29.91	759.8	70.7	21.5	.....	W	.....	.....	2	.....	2	.....	W	2	W	.....	D clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa, Porto Praya, Cape Verde I'ds.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello S. 12° 40′. E 12° 52′	.....	.....	29.97	761.3	71.2	21.8	.....	WSW	.....	.....	3	.....	9	.....	.....	3	WSW	.....	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China	.....	.....	29.89	759.1	84.6	29.2	.....	E	.....	.....	2	.....	10	.....	.....	E	1	.....	14	Rain storm
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds, no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.61	752.2	29.63	752.7	35.4	1.9	69	WNW	18	8	.....	.....	5ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.80	756.8	29.71	754.7	82.0	27.8	40	SW	11	5	.....	.....	9s	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Barnaul	29.54	750.4	30.04	762.9	57.7	14.3	40	Calm	0	0	.....	.....	9	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.45	748.1	29.69	754.2	54.7	12.6	60	NNE	11	5	.....	.....	10n	.....	.....	.....	.....	Raining	Prof. Dr. Weihrauch.
Ekaterinburg	28.87	733.2	29.79	756.6	71.8	22.1	22	W	2	1	.....	9c	.....	.....	.....	.....	.....	Hazy	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.46	748.2	29.71	754.6	77.4	25.1	29	SW	2	1	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.70	754.3	29.72	754.8	65.8	18.8	95	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Lagorio.
Kieff	28.91	734.2	29.50	749.4	74.7	23.7	48	WSW	2	1	.....	ck	8ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.26	743.1	29.70	754.3	79.7	26.5	27	SSE	7	3	.....	.....	1s	.....	.....	.....	.....	.....	Caud. Fatjanow.
Lugan	29.37	745.9	29.56	750.9	76.8	24.9	48	SSE	22	10	.....	.....	5	.....	.....	Blank	blan	.....	Meteorological Obs.
Moscow	29.09	738.9	29.60	751.8	76.6	24.8	39	S	4	2	.....	.....	2ks	.....	.....	.....	..	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.55	751.5	29.66	753.3	83.5	28.6	46	S	13	6	.....	.....	4cs k4	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.93	760.2	30.02	762.4	34.5	1.4	85	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.61	752.2	29.76	755.8	74.5	23.6	31	SW	7	3	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.67	753.7	29.69	754.1	51.6	10.9	55	ENE	9	4	.....	.....	9ks;n	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.26	717.7	29.74	755.4	78.8	26	69	Calm	0	0	.....	.....	6	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.44	722.3	29.80	756.9	71.2	21.8	64	N	4	2	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.31	744.4	29.71	754.7	67.6	19.8	40	N	11	5	.....	.....	1k	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.23	742.5	29.64	752.8	65.3	18.5	60	NW	4	2	.....	.....	6	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.87	758.8	30.17	766.4	31.8	— 0.1	42	WNW	20	9	.....	.....	1	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.63	752.7	29.74	755.3	66.9	19.4	54	E	8.4	3.78	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.67	753.6	29.72	755.0	68.4	20.2	66	S	1.6	0.72	.....	.....	10	.....	.....	.....	.....	Raining	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.80	680.6	.....	.....	62.6	17.0	61	SE	13.6	6.09	.....	.....	8	.....	.....	0	0	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.43	696.8	29.59	751.5	66.2	19.0	64	E	17.2	7.67	.....	0	10	.....	.....	0.366	9.3	Covered	The Staff.
Murcia, Met. Obs'y	29.49	749.1	29.64	752.8	76.6	24.8	62	NW	5.5	2.43	.....	4	5	SE	.....	Inap.	Inap.	Almost cov'd	Olayo Diaz, Director
Santiago, Met. Obs'y	28.68	728.5	29.55	750.6	64.9	18.3	66	SE	9.8	4.4	.....	.....	7	.....	.....	0.319	8.1	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	761.1	30.03	762.7	76.7	24.8	84	ENE	18.3	8.2	.....	4c;ck	8k;sk	W	E	0.197	5.0	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.1	29.90	759.4	84.7	29.3	71	SE	8.1	3.7	.....	.....	.....	.....	.....	0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.52	749.8	29.62	752.3	64.6	18.1	72	S	17.8	8.0	.....	0	10	.....	SW	1.106	28.1	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.6	30.08	763.9	83.1	28.4	83	S	0	0	.....	5ks	1k	S	S	0	0	D. clouds	Enriquetiadea Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.83	757.7	29.87	758.7	38.1	3.4	.....	W	.....	.....	4	.....	4	.....	.....	0	0	.....	
Umea	29.94	760.5	29.99	761.8	32.1	5.6	52	N	.....	.....	4	.....	8	.....	.....	0	0	.....	
Hernosand	29.97	761.3	30.02	762.6	41.7	5.4	69	N	.....	.....	6	.....	8	.....	.....	0	0	.....	
Stockholm	29.87	758.7	30.05	763.2	40.3	4.6	29	NNE	.....	.....	7	.....	1	.....	.....	0.031	0.8	.....	
Wisby	29.86	758.5	29.92	760.0	42.4	5.8	64	NE	.....	.....	7	.....	0	.....	.....	0.110	2.8	.....	
Sub-Series.																			
Upsala	29.91	759.8	30.00	762.0	42.4	5.8	27	NNE	15.0	6.7	.....	.....	1	.....	N	0	0	.....	Nils Ekholm.

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

SWEDISH Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia, N. 48° 29′, W. 8° 42′	.....	.....	29.88	759.0	53.6	12.0	88	ENE	.....	.....	6	.....	6	.....	.....	.....	.....	.....	Misty	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.43	722.1	29.82	757.4	66.9	19.4	55	N	.....	.....	3	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.24	717.4	29.82	757.4	73.2	22.9	55	N	.....	.....	2	.....	3	.....	.....	0.602	15.3	Lightly cov'd	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.0 mm.; Thermometer, +2.8 Cent. Relative Humidity, —2 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.78	756.4	63.5	17.5	64	S	3	1.5	.....	.....	1	.....	WSW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.98	761.4	74.7	23.7	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.87	758.8	77.0	25.0	67	SW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Chatham, N. B.	29.81	757.2	29.87	758.7	51.2	10.7	46	NW	10	4.5	.....	2c	8ks	NW	.....	.....	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.80	756.9	29.84	757.9	46.0	7.8	56	NW	8	3.6	.....	.....	10s	.....	.....	0	0	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.84	757.9	30.04	763.0	52.6	11.4	66	W	.....	.....	1	.....	10s	.....	.....	.....	0	Cloudy	James Smith, M. A
Dalhousie, N. B.	29.73	755.1	29.90	759.4	50.5	10.3	.....	NW	.....	.....	2	5k	0	E	.....	0	0	Fair	H. A. Johnson.
Father Point, Quebec	29.97	761.2	30.00	762.0	43.5	6.4	79	NW	2	0.9	.....	8k	4ks	Calm	.....	0	0	Fair	J. McWilliams.
Fredericton, N. B.	29.87	758.7	29.94	760.5	50.0	10.0	47	N	5	2.2	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.38	746.2	30.20	767.1	52.5	11.4	76	NE	4	1.8	.....	0	5ks	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	29.21	741.9	30.31	769.9	55.0	12.8	74	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.76	755.9	29.89	759.2	49.8	9.9	48	NW	5	2.2	.....	0	9ks	.....	.....	0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.35	758.2	30.24	768.1	61.7	16.5	64	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.80	756.9	30.13	765.3	55.3	12.9	85	W	4	1.8	.....	10cs	0	Calm	.....	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.66	753.4	29.70	754.4	39.2	4.0	71	N	6	2.7	.....	0	8ks	W	.....	0	0	Cloudy	C. H. Rigby.
Montreal, Quebec	29.84	757.9	30.04	763.0	51.0	10.6	72	W	21	9.4	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	C. H. McLeod, C. E
Moose Factory, Ontario	30.04	763.0	30.08	764.0	38.0	3.3	93	Calm	.....	.....	0	.....	10n	.....	.....	Inap.	Inap.	Raining	J. R. Nason.
Norwood, Ontario	29.47	748.5	30.16	766.1	57.3	14.1	41	W	18	8.0	.....	7ck	0	NW	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.54	750.3	30.23	767.8	52.0	11.1	63	W	9	4.0	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.45	748.0	30.18	766.6	61.7	16.5	35	NW	.....	.....	2	0	0	.....	.....	0	0	Hazy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.60	751.8	30.29	769.4	61.1	16.2	83	W	4	1.8	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.66	753.4	30.30	769.6	60.1	15.6	88	W	8	3.6	.....	Haze	Haze	.....	.....	0	0	Hazy	M. Payne.
Quebec, Quebec	29.69	754.1	30.02	762.5	45.0	7.2	92	W	.....	.....	1	.....	10n	.....	.....	0.05	1.3	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.69	754.1	30.14	765.5	51.7	10.9	59	W	10	4.5	.....	.....	9s	.....	.....	0	0	Light rain	W. H. McIntyre.
St. John, N. B.	29.74	755.4	29.91	759.7	46.0	7.8	62	W	7	3.1	.....	.....	10ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.57	751.1	30.29	769.4	54.3	12.3	67	SW	12	5.4	.....	.....	Sm'e	.....	.....	0	0	Smoky	K. Stewart
Stratford, Ontario	29.01	736.8	30.28	769.1	56.9	13.8	62	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.70	754.4	29.74	755.4	52.0	11.1	47	W	7	3.1	.....	5ck	0	NE	.....	0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.87	758.7	30.25	768.3	56.4	13.6	62	W	7	3.1	.....	2ck	1ks	NW	.....	0	0	Fair	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.21	741.9	30.26	768.6	61.3	16.3	50	W	11	4.9	.....	1c	0	.....	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.90	759.4	29.98	761.5	44.1	6.7	88	W	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	Lt. F. E. Wilmot, R. N
Sub-Series.																			
St. Johns, Newfoundland	29.45	748.0	29.71	754.6	34	1.1	90	NE	.....	.....	.....	10k	10s	.....	.....	0.01	0.3	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	29.61	752.1	41.0	5.0	.....	NW	.....	.....	3	.....	.....	.....	.....	0	0	.....	The Commandant

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upper. 0–10.	Clouds. Amount. Lower. 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.10	764.5	30.18	766.6	60	15.6	44	SW	3	1.3		5c	Haze	N	Calm	0	0	Fair	
Alpena, Michigan	29.60	751.8	30.24	768.1	60	15.6	34	NW	12	5.4		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.21	741.9	30.35	770.9	64	17.8	52	E	4	1.8		0	Haze			0	0	Clear	
Atlantic City, New Jersey	30.25	768.3	30.27	768.8	58	14.4	48	NW	6	2.7		Haze	Haze	Calm	Calm	0	0	Hazy	
Augusta, Georgia	30.23	767.8	30.43	772.9	60	15.6	77	Calm	0	0		Haze	Haze	Calm	Calm	0	0	Hazy	
Baltimore, Maryland	30.26	768.6	30.31	769.9	61	16.1	35	N	4	1.8		Haze	Haze	Calm	Calm	0	0	Hazy	
Barnegat, New Jersey	30.21	767.3	30.23	767.8	64	17.8	39	NW	8	3.6		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	28.28	718.3	30.14	765.5	59	15.0	94	NE	16	7.2			10s		NE	0	0	Cloudy	
Boerne, Texas	28.71	729.2	30.01	762.2	68	20.0	95	E	8	3.6			10s		E	0	0	Cloudy	
Boise City, Idaho	27.22	691.4	30.18	766.6	40	4.4	73	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.96	761.0	30.11	764.8	55	12.8	39	W	9	4.0		5ck	2s	NE	NE	0	0	Fair	
Brackettville, Texas	28.99	736.3	30.02	762.5	70	21.1	35	E	11	4.9		5cs	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.12	739.6	30.10	764.5	57	13.9	94	SE	2	0.9		10cs	0	W		0.58	14.7	Cloudy	
Brownsville, Texas	29.96	761.0	30.01	762.2	79	26.1	87	NE	2	0.9		0	5s		NE	0.01	0.3	Fair	
Buffalo, New York	29.56	750.8	30.27	768.8	52	11.1	73	SW	8	3.6		5cs	Haze	N	Calm	0	0	Fair	
Burkes, Arizona					47	8.3	34	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.78	756.4	30.06	763.5	54	12.2	49	S	9	4.0			10s		S	0	0	Cloudy	
Cairo, Illinois	29.99	761.7	30.38	771.6	63	17.2	62	NE	3	1.3		0	Sm'e			0	0	Clear	
Campo, California	27.45	697.2	30.02	762.5	46	7.8	77	S	8	3.6			10s		Calm	0	0	Cloudy	
Cape Hatteras, N. Carolina	30.34	770.6	30.35	770.9	57	13.9	69	N	11	4.9		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.30	769.6	30.32	770.1	54	12.	55	SW	13	5.8		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.34	770.6	30.36	771.1	54	12.2	74	N	12	5.4		Haze	Haze	Calm	Calm	0	0	Light haze	
Cape May, New Jersey	30.24	768.1	30.27	768.8	58	14.4	47	N	16	7.2		2c	0	NW		0	0	Fair	
Castroville, Texas	29.36	745.7	30.04	763.0	75	23.9	72	E	7	3.1			10s		E	0	0	Cloudy	
Cedar Keys, Florida	30.25	768.3	30.27	768.8	66	18.9	69	NE	15	6.7		0	5ks		E	0	0	Fair	
Charleston, South Carolina	30.32	770.1	30.38	771.6	62	16.7	72	N	5	2.2		0	0			0	0	Clear	
Charlotte, North Carolina	29.53	750.0	30.35	770.9	60	15.6	69	E	3	1.3		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.53	750.0	30.34	770.6	62	16.7	83	Calm	0	0		Haze	Fog	Calm	Calm	0	0	Dense haze	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	40	4.	70	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.65	753.1	30.35	770.9	59	15.0	65	Calm	0	0		0	0			0	0	Clear	
Chincoteague, Virginia	30.28	769.1	30.30	769.6	58	14.4	74	NW	12	5.4		1c	0	Calm		0	0	Clear	
Cincinnati, Ohio	29.76	755.9	30.42	772.7	56	13.3	57	N	2	0.9		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.65	753.1	30.38	771.6	56	13.3	46	S	4	1.8		1ck	0	N		0	0	Clear	
Coleman City, Texas	28.37	720.6	30.01	762.2	66	18.9	79	SE	4	1.8		0	0			0	0	Clear	
Columbus, Ohio	29.54	750.3	30.39	771.9	53	11.7	67	NE	2	0.9		0	0			0	0	Clear	
Concho, Texas	28.27	718.0	29.99	760.0	64	17.8	89	E	6	2.7		8k	0	SE		0	0	Fair	
Corsicana, Texas	29.76	755.9	30.22	767.6	69	20.6	85	Calm	0	0		5cs	0	Calm		0	0	Fair	
Davenport, Iowa	29.68	753.9	30.33	770.4	58	14.4	64	SE	2	0.9		0	0			0	0	Clear	
Dayton, Washington T'y					40	4.4	82	NE			1	0	0			0	0	Clear	
Deadwood, Dakota	25.43	645.9			59	15.0	70	SW	12	5.4		2c	0	W		0	0	Fair	
Decatur, Texas	29.05	737.9	30.18	766.6	78	25.6	61	SE	4	1.8		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.26	768.6	30.28	769.1	56	13.3	69	NW	13	5.8		0	Haze			0	0	Clear	
Denison, Texas	29.46	748.3	30.24	768.1	69	20.6	85	E	2	0.9		8ck	0	Calm		0	0	Fair	
Denver, Colorado	24.86	631.4	30.08	764.0	52	11.1	29	S	2	0.9		9ck	0	S		0	0	Fair	
Des Moines, Iowa	29.39	746.5	30.27	768.8	59	15.0	65	S	2	0.9		0	0			0	0	Clear	
Detroit, Michigan	29.68	753.9	30.35	770.9	54	12.2	49	SW	4	1.8		0	0			0	0	Clear	
Dodge City, Kansas	27.58	700.5	29.83	757.7	60	15.6	82	S	4	1.8		5cs	5s	W	Calm	0	0	Cloudy	
Dubuque, Iowa	29.63	752.6	30.24	770.6	56	13.3	63	SE	1	0.4		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.51	749.5	30.00	762.0	49	9.4	85	Calm	0	0		2ck	0	SW		0	0	Fair	
Eagle Pass, Texas	29.34	745.2	30.04	763.0	75	23.9	77	E	8	3.6		5k	0	E		0	0	Fair	
Eastport, Maine	29.89	759.2	29.96	761.0	49	9.4	44	NW	6	2.7			10s		Calm	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.62	752.3	30.23	770.4	57	13.9	47	W	8	3.6		0	0			0	0	Clear	
Escanaba, Michigan	29.62	752.3	30.27	768.8	59	15.0	65	S	4	1.8		0	0			0	0	Clear	
Florence, Arizona	28.44	722.4	30.04	763.0	54	12.	61	N	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.49	774.4	38	3.3	45	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.05	712.5	29.86	758.4	55	12.8	68	NE	8	3.6		2cs	0	SW		0	0	Fair	
Fort Custer, Montana	26.86	682.2			54	12.	61	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.33	643.4	30.26	769.4	60	15.6	76	Calm	0	0		0	0			0.15	3.8	Clear	
Fort Elliot, Texas	27.13	689.1	29.32	744.7	63	17.2	67	SE	10	4.5		5c	0	SE		0	0	Fair	
Fort Gibson, Indian Ter.	29.70	754.4	30.23	767.8	70	21.1	75	E	7	3.1		2c	0	W		0	0	Fair	
Fort Grant, Arizona	25.24	641.1	30.04	763.0	57	13.9	5	W	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.95	735.3	30.20	767.1	67	19.	71	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.32	693.9			48	8.	77	NE	5	2.2		0	0			0	0	Clear	
Fort McKavett, Texas	27.9	709.4	29.81	757.2	68	20.0	74	E	5	2.2			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	29.60	736.6	30.09	764.3	70	21.1	75	Calm	0	0		10cs	0	S		0	0	Cloudy	
Fort Stevenson, Dakota	28.26	717.8			56	13.3	80	E	4	1.8		0	0			0	0	Clear	
Fort Verde, Arizona					46	7.8	33	S			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.08	764.0	30.19	765.0	76	24.	77	E	18	8.0		5ck	5ks	NW	E	0.60	15.2	Cloudy	
Grand Haven, Michigan	29.70	754.4	30.36	771.1	60	15.6	60	W	6	2.7		0	0			0	0	Clear	
Helena, Montana					42	5.6	58	S	4	1.8		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.58	751.3	30.36	771.1	59	15.0	59	Calm	0	0		0	0			0	0	Clear	
Indianola, Texas	30.08	764.0	30.11	764.8	74	23.3	90	NE	22	9.8		8c	2s	NE	NE	0.57	14.5	Cloudy	
Jacksboro, Texas	29.08	738.6	30.18	766.6	71	21.7	75	SE	1	0.4		0	0			0	0	Clear	
Jacksonville, Florida	30.28	769.1	30.30	769.6	71	21.7	53	NE	10	4.5		0	0			0	0	Clear	
Keokuk, Iowa	29.67	753.6	30.28	769.1	61	16.1	66	SE	5	2.2		1cs	Haze	Calm	Calm	0	0	Clear	
Key West, Florida	30.06	763.5	30.09	764.3	75	23.9	77	E	20	8.9			10ks		E	0.07	1.8	Cloudy	
Kittyhawk, North Carolina	30.33	770.4	30.36	771.1	56	13.3	63	NW	14	6.3		2c	Haze	NW	Calm	0	0	Fair	
Knoxville, Tennessee	29.38	746.2	30.40	772.1	60	15.6	65	Calm	0	0			Haze			0	0	Dense haze	
La Crosse, Wisconsin	29.55	750.6	30.29	769.4	57	13.9	62	S	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.12	663.4	30.27	768.8	71	21.7	49	E	6	2.7		5c	0	SW		0	0	Fair	
Laredo, Texas																			
Leavenworth, Kansas	29.39	746.5	30.23	767.8	63	17.	57	Calm	0	0		0	Haze		Calm	0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.95	760.7	30.27	768.8	70	21.1	80	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.71	754.6	30.05	763.3	52	11.1	86	N	3	1.3		4cs	0	NE		0	0	Fair	
Louisville, Kentucky	29.78	756.4	30.34	770.6	60	15.6	49	NE	4	1.8		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.68	753.9	30.47	771.4	57	13.9	52	N	2	0.9		0	Haze			0	0	Dense haze	
Madison, Wisconsin	29.33	745.0	30.32	770.1	55	12.8	74	S	4	1.8		0	0			0	0	Clear	
Marquette, Michigan	29.51	749.5	30.19	766.8	67	19.4	48	W	10	4.5		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.55	725.2	30.27	768.8	70	21.1	80	E	5	2.2			10s		SE	0	0	Cloudy	
Memphis, Tennessee	29.92	760.0	30.26	768.6	66	18.9	74	NE	4	1.8		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.61	752.1	30.35	770.9	52	11.1	60	W	8	3.6		0	Haze			0	0	Clear	
Mobile, Alabama	30.24	768.1	30.28	769.1	69	20.6	65	E	9	4.0		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	30.14	765.5	30.38	771.6	67	19.4	59	E	6	2.7		Haze	Haze	Calm	Calm	0	0	Hazy	
Morgantown, West Virginia	29.34	745.2	30.34	770.6	58	14.4	53	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	23.74	603.0	30.10	764.5	29	— 1.7	78	NW	68	30.4			10ks		NW	0	0	Cloudy	
Nashville, Tennessee	29.80	756.9	30.34	770.6	64	17.8	53	N	1	0.4		Haze	Haze	Calm	Calm	0	0	Hazy	
New Haven, Connecticut	30.06	763.5	30.18	766.6	61	16.1	55	NW	9	4.0		0	0			0	0	Clear	
New London, Connecticut	30.10	764.5	30.15	765.8	63	17.2	33	NW	5	2.2		1ck	Haze	NW	Calm	Inap.	Inap.	Clear	
New Orleans, Louisiana	30.15	765.8	30.20	767.1	74	23.3	68	E	16	7.2		2k	Haze	E	Calm	0.01	0.3	Fair	
Newport, Rhode Island	30.08	764.0	30.13	765.3	57	13.9	47	NW	2	0.9		0	0			0	0	Clear	
New River, North Carolina					57	13.9	68	NW			1	0	0					Clear	
New York, New York	30.03	762.7	30.21	767.3	56	13.3	51	Calm	0	0		1c	Haze	Calm	Calm	0	0	Clear	
Norfolk, Virginia	30.28	769.1	30.34	770.6	57	13.9	52	W	8	3.6		0	Haze		Calm	0.01	0.3	Clear	
North Platte, Nebraska	27.22	691.4	29.75	755.6	59	15.0	88	SE	13	5.8		5cs	5s	Calm	Calm	0.38	9.7	Cloudy	
Olympia, Washington Ter	30.04	763.0	30.08	764.0	37.5	3.1	90	N	1	0.4		2cs	Fog	Calm	S	0	0	Fair	
Omaha, Nebraska	29.07	738.4	30.13	765.3	70	21.1	53	SE	5	2.2		2c	5s	W	W	0	0	Fair	
Oswego, New York	29.90	759.4	30.23	767.8	51	10.6	65	W	12	5.4			10s		N	0	0	Cloudy	
Pembina, Dakota	29.28	743.7	30.10	764.5	51	10.6	93	NE	16	7.2			10s		NE	0	0	Cloudy	
Pensacola, Florida	30.27	768.8	30.30	769.6	68	20.0	65	NE	14	6.3		1k	0	E		0	0	Clear	
Philadelphia, Pennsylvania	30.22	767.6	30.27	768.8	59	15.0	38	NW	9	4.0		5c	Haze	SW	Calm	0	0	Fair	
Phœnix, Arizona	28.76	730.5	30.55	776.0	56	13.3	35	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.92	455.2	30.13	765.3	25	— 3.9	38	SW	32	14.3		5cs	0	SW		0	0	Fair	
Pilot Point, Texas																			
Pioche, Nevada	23.95	608.3	29.72	754.9	46	7.8	13	S	7	3.1		8cs	0	SW		0	0	Fair	
Pittsburg, Pennsylvania	29.54	750.3	30.37	771.4	50	10.0	65	NW	2	0.9		0	0			0	0	Clear	
Port Huron, Michigan	29.65	753.1	30.31	769.9	57	13.9	58	SW	6	2.7		0	Haze			0	0	Clear	
Portland, Maine	30.01	762.2	30.06	763.5	58	14.4	64	W	6	2.7		5k	5s	W	Calm	0	0	Cloudy	
Portland, Oregon	30.00	762.0	30.08	764.0	45	7.2	84	NW	2	0.9		0	0			0	0	Clear	
Portsmouth, North Carolina					60	15.6	60	NW	12	5.4		0	0			0	0	Clear	
Prescott, Arizona	24.73	628.1	30.09	764.3	40	4.4	19	S	5	2.2		0	0			0	0	Clear	
Punta Rassa, Florida	30.15	765.8	30.16	766.1	69	20.6	70	NE	15	6.7		0	8ks		NE	0	0	Fair	
Red Bluff, California	29.63	752.6	29.99	761.7	53.5	11.9	80	SE	3	1.3		0	8s		Calm	0	0	Cloudy	
Rio Grande City, Texas	29.90	759.4	30.11	764.8	73	22.8	85	N	6	2.7		0	5s		E	0	0	Fair	
Rochester, New York	29.59	751.6	30.21	767.3	56	13.3	57	W	10	4.5		9k	0	NW		0	0	Cloudy	
Roseburg, Oregon	29.47	748.5	30.05	763.3	40.5	4.7	95	Calm	0	0		1c	0	Calm		0	0	Clear	
Sacramento, California	29.90	759.4	29.98	761.5	51.5	10.8	76	SW	10	4.5			10s		Calm	0	0	Cloudy	
St. Louis, Missouri	29.77	756.1	30.34	770.6	61	16.1	55	SE	5	2.2		0	0			0	0	Clear	
St. Paul, Minnesota	29.37	746.0	30.19	766.8	58	14.4	70	SE	7	3.1		5ck	0	W		0	0	Fa r	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	47	8.3	41	Calm	0	0		2c	0	Calm		0	0	Clear	
San Antonio, Texas	29.47	748.5	30.15	765.8	72	22.2	85	NE	4	1.8			10s		NE	0.03	0.8	Cloudy	
San Diego, California	30.05	763.3	30.12	765.0	56	13.3	63	SW	5	2.2			10ks		W	0	0	Cloudy	
Sandusky, Ohio	29.70	754.4	30.38	771.6	54	12.2	55	SW	8	3.6		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.18	766.6	30.21	767.3	62	16.7	56	SW	9	4.0		0	0			0	0	Clear	
San Francisco, California	30.00	762.0	30.06	763.5	51	10.6	79	W	3	1.3		5cs	4s	W	SW	0	0	Cloudy	
Santa Fé, New Mexico	23.42	594.9	29.96	761.0	53	11.7	73	SE	19	8.5		1ck	5ks	Calm	SE	0	0	Cloudy	
Savannah, Georgia	30.29	769.4	30.35	771.0	65	18.3	68	NE	2	0.9		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	30.00	762.0	30.21	767.3	72	22.2	75	Calm	0	0		5c	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.35	770.9	30.38	771.6	61	16.1	61	N	5	2.2		0	0			0	0	Clear	
Socorro, New Mexico	25.47	646.9	29.54	750.3	59	15.0	59	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.69	754.1	30.36	771.1	58.5	14.7	61	E	7	3.1		0	0			0	0	Clear	
Springfield, Massachusetts	30.03	762.7	30.16	766.1	57	13.9	47	S	2	0.9		5ck	0	N		0	0	Fair	
Stockton, Texas	27.09	688.1	30.09	764.3	68	20.0	79	SE	26	8.9			10s		SE	0	0	Cloudy	
Thatcher's Island, Mass	30.01	762.2	30.06	763.5	54	12.2	100	W	11	4.9			10n		W	0.08	2.0	Light rain	
Toledo, Ohio	29.64	752.8	30.32	770.1	53	15.0	48	W	8	3.6		0	0			0	0	Clear	
Tucson, Arizona	27.50	698.5	30.05	763.3	66	18.9	27	S	2	0.9		0	0			0	0	Clear	
Umatilla, Oregon	29.73	755.1	30.23	767.8	45.5	7.5	80	SE	6	2.7		0	0			0	0	Clear	
Uvalde, Texas	29.20	741.7	30.00	762.0	71	21.7	85	E	3	1.3			10s		SE	0	0	Cloudy	
Vicksburg, Mississippi	30.02	762.5	30.28	769.1	71	21.7	62	E	5	2.2		0	0			0	0	Clear	
Virginia City, Montana	24.30	617.2	29.78	756.4	34	1.1	61	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.62	752.3	29.99	761.7	52	11.1	79	NW	3	1.3			10s		Calm	0	0	Cloudy	
Washington, D. C	30.22	767.6	30.33	770.4	56	13.3	57	NW	4	1.8		0	Haze		Calm	0	0	Clear	
Wickenburg, Arizona					59	15.0	13	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.31	769.9	30.39	771.9	56	13.3	63	NE	2	0.9		0	0			0	0	Clear	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	43	6.1	59	NE	10	4.5		0	5ks		NE	0	0	Fair	
Wood's Holl, Massachusetts	30.08	764.0	30.12	765.0	56	13.3	51	NW	8	3.6		2cs	0	Calm		0	0	Fair	
Yankton, Dakota	28.88	733.5	30.14	765.5	68	20.0	79	S	6	2.7			10s		Calm	0.61	15.5	Cloudy	
Yuma, Arizona	29.77	756.1	29.91	759.7	58	14.4	42	W	4	1.8		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia																0	0		Thomas Herran.
Havana, Cuba, W. I.	30.02	762.5	30.07	763.8	78	25.6	82	E	3.6	1.6		4cs	8ks	Calm	E	0.35	8.9	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	77	25.0	87	Calm	0	0		8c	2ks	Calm		1.85	47.0	Hazy	James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	76	24.4	91	S	1	0.4			10	SW	S	2.	51.		F. M. Everett.
Paramaribo, D. Guiana, S A.	30.01	762.2	30.01	762.2	78	25.6	91	E			2		8ks	E		0.40	10.16	Cloudy	C. J. Hering.
Puerto Perrio, U.S.Col'bia‖	29.46	748.3	30.01	762.2	82	27.8	85	N			1		8ks			0.02	0.5		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		NW				8		SW	NW	0.91	23.		Carl Flint.
Santiago de Cuba, W. I.	29.99	761.7	30.02	762.5	76	24.4	86	NNE	2.4	1.1			8n		NE	4.195	106.56		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.33	770.4	30.38	771.6	30.0	— 1.1	95	N	9	4.0		2c	0	NE		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m., Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm., Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.29	769.4	68	20.0	79	E	18	8.0			5		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.12	765.0	55	12.8	74	WNW	2	0.9			5?			0	0			Cloudy?	
Naval Hospital, Yokohama, Japan	29.93	760.2	52.5	11.4	90	N			3		10n		NE	0.21	5.3			Light rain	
§ Adams, Punta Arenas, Costa Rica	29.98	761.5	80	26.7	91	Calm			0		5		S					Fair	
§ Alaska, Ancon, Peru *	30.01	762.2	64	17.8	89	Calm			0		10					Smooth		Hazy	
§ Alert, N 32° 08′, E. 142° 03′	29.71	754.6	67	19.4	89	SE			6		10		Calm			Mod'ate	SE	Light rain	
Alliance, Norfolk, Va.	30.33	770.4	55	12.8	68	SW			1		0			0	0			Clear	
§ Ashuelot. Shan hai, China †	30.02	762.5	61	16.1	82	SE			1		10		WNW					Overcast	
Colorado, New York, N. Y.	30.20	767.1	60	15.6	76	WNW	3	1.3			2		Calm	0	0			Misty	
§ Constitution. Hampton Roads, Va.	30.22	767.6	66	18.9	54	WSW	14	6.3			10		Calm					Overcast	
§ Franklin. Off Navy Yard, Norfolk, Va	30.36	771.1	52	11.1	73	WSW	9.6	4.3			0			0	0			Clear	
§ Independence, Mare I'd. Navy Yard, Cal.	30.02	762.5	50	10.0	100	W	2.4	1.1			8		W	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	30.02	762.5	45	7.2	92	Calm			0		10		Calm			Smooth		Cloudy	
§ Marion. Flores Isl'd, Uruguay	29.94	760.5	52	11.1	79	NNW			5		10			0	0			Hazy	
§ Michigan, Erie, Pa.	30.26	768.6	55	12.8	74	W			4		0							Clear	
§ Monocacy, Shanghai, China	30.02	762.5	61	16.1	66	S			0–1		10							Overcast	
§ New Hampshire, Port Royal, S. C.	29.99	761.7	63	17.2	67	E	12	5.4			0			0	0			Clear	
Nipsic. Villafranca, France	29.89	759.2	65	18.3	78	SE			1		5					Smooth		D. clouds	
§ Onward. Ancon Bay, Peru †	30.03	762.7	65	18.3	94	W			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	30.03	762.7	65	18.3	84	SSE			1		0							Clear	
§ Passaic, Washington, D. C.	30.34	770.6	55	12.8	80	W			1		2			0	0			Clear	
§ Portsmouth. Hampton Roads, Va.	30.34	770.6	55	12.8	56	W			4		2			0	0	Smooth		Clear	
§ Powhatan. Annapolis, Md.	30.29	769.4	60	15.6	65	NW			2		2							Fair	
§ Quinnebaug, N. 37° 21′, W. 9° 58′	29.47	748.5	64	17.8	73	SSE			3		8		SW			Long	S	Fair	
§ Richmond, Shanghai, China	30.02	762.5	63	17.2	83	ESE			1		10		ESE	0.30	7.6			Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.23	767.8	72	22.2	100	NW	2	0.9			5		N	0	0			Squally	
§ Saratoga, N 39° 03′, W. 11° 00′	29.56	750.8	60	15.6	82	ESE			3–4		8		ESE	Light	Light	Long	W	Cloudy	
§ Shenandoah, Montevideo, Uruguay	29.89	759.2	52	11.1	73	N			2		8					Smooth		Fair	
§ St. Louis, League Island, Pa.	30.25	768.3	57	13.9	58	NW	9	4.0			2		NW	0	0			Clear	
Swatara, N. 3° 11′, E. 104° 44′ †	29.82	757.4	84	28.9	91	SSE			4		2		S			Smooth		Clear	
§ Tennessee, N. 9° 28′, W. 81° 33′	29.99	761.7	80	26.7	91	NNW	6	2.7			10		NW			Smooth		Rainy	
Ticonderoga, Yokohama, Japan	29.92	760.0	56	13.3	94	NNW			1		10					Smooth		Rainy	
§ Trenton, Piraeus, Greece	29.80	756.9	74	23.3	63	S			3		2			0	0			Fair	
§ Vandalia. Navy Yard, Brooklyn, N.Y.	30.21	767.3	58	14.4	48	WSW			1		2		Calm					Fair	
§ Wabash, Boston, Mass.	30.11	764.8	59	15.0	43	NNW	1	0.4			5			0	0			Fair	
§ Wachusett. S. 39° 00′, W. 57° 38′	29.78	756.4	55	12.8	93	NW			5–6		8		N	0	0	Long Mod'ate	S	Cloudy	
Wyoming, N. 37° 03′, E. 18° 54′	29.91	759.7	65	18.3	84	W			3–4		2		W			Smooth	W	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 50° 05′, W. 35° 38′	29.76	55.9	52	11.1		SSE			6		10		SSE			Mod'ate	S	Cloudy	
S. S. Moravian, J. Graham.																			
S. S. Peruvian,																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air.																			A. Christie & F. W. Erskine
																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 39° 40′, W. 53° 10′ *†	29.76	755.9	57	13.9	94	NW			2		10		NW	1 h'r	1 h'r	Irregular.	NE&SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 23° 04′, W. 107° 52′ †	29.87	758.7	72	22.2	90	W			2		0			0	0	Small	WNW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 43° 48′, W. 45° 17′ *	29.24	742.7	58	14.4	??	WSW			8		10		W	Heavy	Heavy	Heavy	WSW	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 41° 34′, W. 60° 49	29.88	758.9	55	12.8	50	NW			6		2		N	0	0	2	N	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.93	760.2	86	30.0	92	E			1		2		E					Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal. †	30.05	763.3	51	10.6	72	SW			3		3k		W	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 33° 16′, W. 117° 48′ †	30.13	765.3	56	13.3		SW			2		0					Mod'ate	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	30.01	762.2	46	7.8		NW			2		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 19° 10', W. 104° 55' ....†	29.90	759.4	78	25.6	82	NW			2		2		NW			Mod'ate	NW	Clear	F. A. Johnston.
§S. S. Australia,																			Banneman.
§S. S. China, W. B. Seabury. N. 23° 01', W. 106° 16' ....†	29.91	759.7	74	23.3	86	Calm			0		0					Mod'ate	WSW	Clear	
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb. N. 25° 15', W. 150° 00' ....†	30.25	768.3	68	20.0	70	SSE			2		2		NE	0	0	Mod'ate	E	Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§S. S. City of Peking, [illegible] Berry. N. 36° 07', E. 178° 3[illegible] ....†	30.13	765.3	60	15.6	88	WSW			4		8		W			Mod'ate	W	Cloudy	
§S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	30.13	765.3	65	18.3		SW			4		2		SW	0	0	Smooth		Clear.	E. LeSack.
§S. S. City of Tokio, J. Maury N. 39° 41', E. 147° 57' ....†	29.92	761.7	65	18.3	73	NW			4		0			0	0	Mod'ate	E	Clear	F. S. Doane.
§S. S. Colima, R. R. Searle, Champerico, Guatemala†	29.97	761.2	82	27.8	96	S			2		5		SSW	0.30	7.6	Mod'ate	SSW	Fair	
§S. S. Dakota, D. E. Griffiths Olympia, Washington Ter.†	30.11	764.8	48	8.9	85	W			3		8		SW	0	0			Hazy	D. E. Griffiths.
§S. S. Granada, J. M. Cavarly N. 21° 29', W. 100° 21'....†	30.02	762.5	68	20.0	95	NW			1		0			0	0	Long Easy	NW	Hazy	
§S. S. Idaho, San Francisco, Cal.....†			59	10.0		W			2		10		Calm	0	0			Cloudy	
§S. S. Zalandia, R. C. Ghest, N. 35° 12', W. 129° 55'.....†	30.1[illegible]	765.0				ENE			4				E			Smooth	E	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 50° 53', W. 14° 13'....†	29.95	760.7	54	12.2		E			4		10		E			Mod'ate	E	Rain & hail.	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell, N. 46° 27', W. 39° 47'....*†	29.66	753.4	54	12.2		SW			6		10		W			High	SW	Cloudy	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Vineyard Haven, Mass†	30.17	766.3	56	13.3		NW			1		5		NW	0	0			Fine	Mehaffey.
Schr. Addie Fuller, J. Jorgensen, N. 31° 28', W. 80° 44'.....	30.33	770.4	68	20.0	47	ENE	7	3.1			0			0	0	Swell	NE	Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis N. 20° 01', W. 59° 02'.....†	29.87	758.7	75	23.9		W			6		8		W	Heavy	Heavy	Heavy Cross	S; W	Clearing	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 34° 30', E. 20° 50'.....†	30.12	765.0	70	21.1		SSW			7		10		SW	Blank	Blank	Rough	SSW; WSW	Threatening	B. F. Woodbury.
Brigantine George, W. H. Champlin. Monabo, Porto Rico ....†	30.16	766.1	80	26.7		Calm			0		0			0	0	Smooth		Clear	
Hippolyta, N. 52° 05', W. 5° 54'.....*	29.94	760.5	54	12.2		ENE			6		2		E	0	0	Smooth		Fair	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

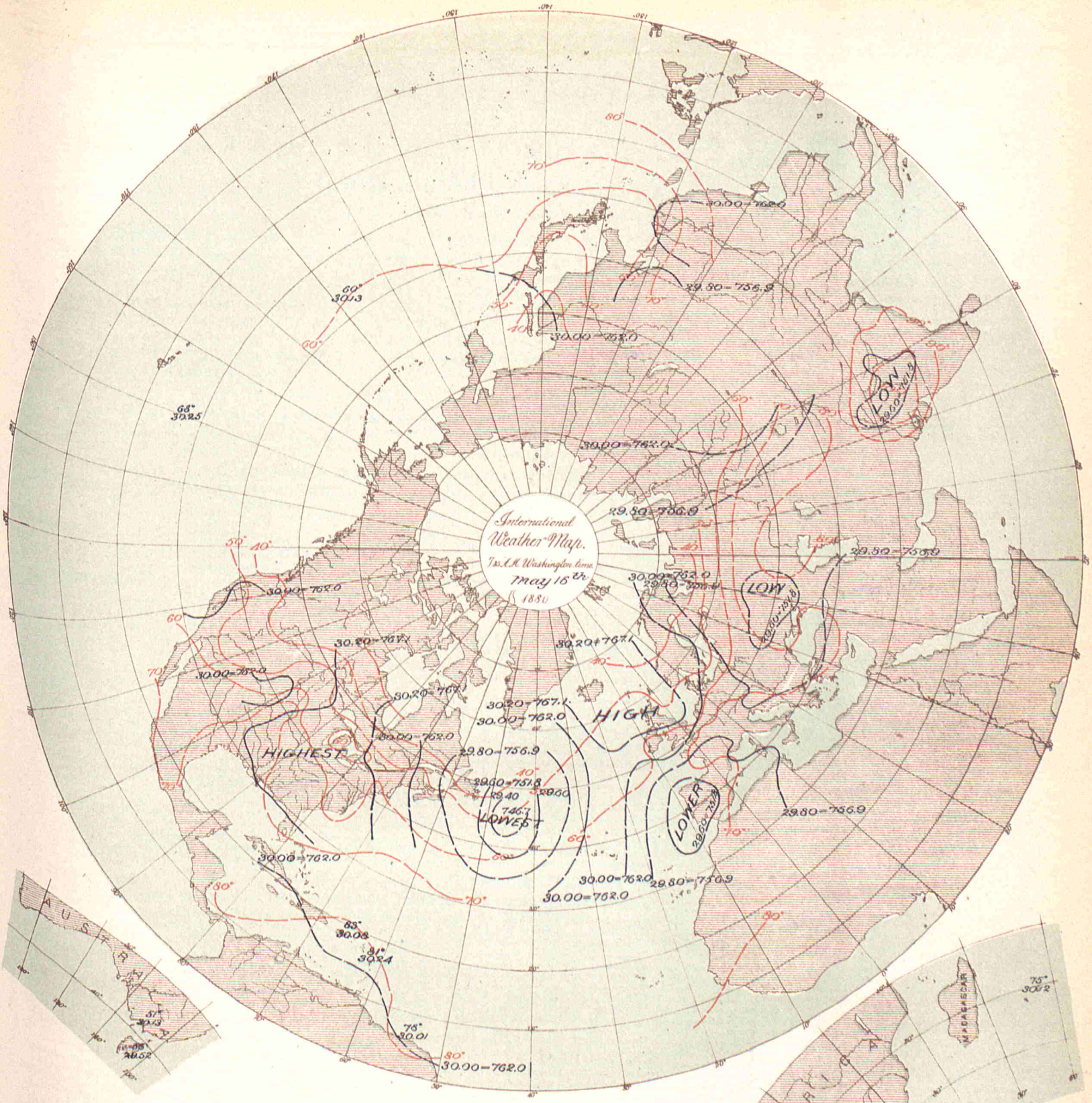
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 17, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.85	758.3				SW			7		9			0.256	6.5	Covered	Dr. Ollive.
Nemours			29.76	755.9	71.2	21.8	62	N			1		10			0.236	6.0	Covered	Metge.
Algiers			29.77	756.1	68.0	20.0	65	W			4		8			0	0	Very cloudy	Nicolas.
La Calle			29.78	756.5	72.1	22.3	84	E			1		3			0	0	Pretty fair	Fonfrède.
Tunis			29.78	756.5															Jacques.
Sfax			29.79	756.6															Gau.
Saida			29.81	757.1															Bernard.
Tebessa			29.85	758.1	84.0	28.9	11	W			5		1			0	0	Very fair	Watrin.
Geriville					72.5	22.5	38	N			4		0			0	0	Clear	Bruguiaux.
Laghouat			29.80	756.9	80.2	26.8	12	SSW			6		4			0	0	Cloudy	Suart.
Biskra			29.75	755.7	94.6	34.8	22	E			2		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.25	743.0	29.78	756.3	76.6	24.8	52	N			3		8			0.020	0.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.23	742.5	30.00	762.1	52.5	11.4	39	NNW	10.5	4.7			4			0.008	0.2		Dr. Wierzbicki.
Eperies	29.01	736.9	29.89	759.1	54.0	12.2	71	N			3		10ks			0	0		Julius Mikolik.
Gratz	28.63	727.1	29.84	757.8	66.6	19.2	76	NE			2		7			0	0		Andreas Rospini.
Hermannstadt	28.43	722.0	29.82	757.5	60.6	15.9	76	N			1		10			0.047	1.20	Thunder-storm.	Prof. A. Gottschling
Kremsmünster, Observatory	28.55	725.1	29.86	758.4	61.9	16.6	69	ENE			2		10			0	0		The Staff.
Lemberg	28.87	733.4	29.86	758.5	51.1	10.6	65	NW			5		9			Blank	Blank		Dr. T. Stanecki.
Pola	29.78	756.5	29.89	759.3	69.8	21.0	72	SE			3		10			0	0		I.R. Hydrographic Office.
Szathmar	29.39	746.4	29.84	757.9	66.2	19.0	54	NW			4		8			0	0		Pet. Pancsics, S. J.
Szegedin	29.56	750.7	29.82	757.5	74.8	23.8	42	W			2		5			0.561	14.25		Karl Stancel.
Trieste	29.80	756.9	29.90	759.5	72.7	22.6	74	NW			1		10			0	0		P. Busin.
Vienna	29.23	742.4	29.97	761.1	58.1	14.5	69	NNE			4		8			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 17, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	30.26	768.6	30.36	771.1	51.0	10.6		E	15	6.7			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.30	769.6	30.32	770.1	59	15.0		WNW			2		4					Blue sky	G. Carrick.
Armagh, (Observatory)	30.11	764.8	30.34	770.6	60.5	15.8		ESE	7	3.1			1					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.28	769.1	58.2	14.6		ENE	14	6.3			0					Blue sky	John Hartnup.
Bolton (Sharples)	29.75	755.6	30.26	768.6	57.6	14.2		E	8	3.6			3					D. clouds	Thomas Mackereth.
Bradford, Yorkshire																0	0		J McLandsborough.
Bridgetown, Barbadoes	29.97	761.2	30.00	762.0	83	28.3		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.15	765.8	30.25	768.3	56.0	13.3		NE			2		1					Blue sky	H. Todd.
Cardington			30.25	768.3	56.6	13.7		NE			2		3					Blue sky	John McLaren.
Chatham (School M. E.)	30.12	765.0	30.26	768.6	54.1	12.3		NE			5		6k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.33	770.4	30.37	771.4	58	14.4		S			3		5					D. clouds	J. Mac Gowan.
Dover	30.17	766.3	30.20	767.1	51	10.6		NE			6		4					½ clouded	J. Costello.
Falmouth (Observatory)	29.95	760.7	30.18	766.6	52.9	11.6		E			4		1					D. clouds	The Staff.
Fort Napier, Natal	27.82	706.6	30.02	762.5	56.4	13.6		S			3		7					Overcast	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	84	28.9		S			1		8					D. clouds	
Galway (Queen's College)			30.23	767.8	68.5	20.3		E			1		0					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.62	752.3	29.70	754.4	62.6	17.0		NE			2		7					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	30.11	764.8	30.31	769.9	59.2	15.1		N			1		7					D. clouds	D. G. Maclean.
Great Yarmouth	30.27	738.8	30.28	769.1	50	10.0		NE			4		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.05	763.3	30.22	767.6	59.2	15.1		NE			3		3					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.86	758.4	30.09	764.3	51.5	10.8		NE			6		7					Misty	Dr. S. E. Hoskins, F.R.S.
Helston	30.28	769.1	30.40	772.1	61	16.1		NE			6	c				0	0	Fine	M. P. Moyle.
Holyhead	30.28	769.1	30.31	769.9	54	12.2		NE			4		0					Blue sky	John Tilston.
Jersey	29.78	756.4	30.07	763.8	52.8	11.6		ENE			7		2					D. clouds	J. Fisher.
Kew (Observatory)	30.19	766.8	30.23	767.8	55.0	12.8		NE	26	11.6			2					Misty	The Met'g'l Office.
Leicester (Museum)	30.03	762.7	30.29	769.4	55.0	12.8		NE			1		1					Blue sky	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.77	756.1	29.84	757.9	68.6	20.3		E			3		0					Blue sky	A. King.
Nairn	30.27	768.8	30.37	771.4	59	15.0		ENE			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.14	765.5	74.5	23.6		NE			3		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.12	765.0	30.31	769.9	58.7	14.8		NNE			3		1k		NE	0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.74	755.4	30.27	768.8	56.3	13.5		ENE; NNE			4		1					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.01	762.2	30.27	768.8	55	12.8		NE			4		3					Blue sky	The Staff, for E. J. Stone, Esq
Plymouth	30.08	764.0	30.15	765.8	58.7	14.8		NE			4		7					D. clouds	John Merrifield.
*Roche's Point	30.18	766.6	30.30	769.6	59	15.0		ESE			5		2					¼ clouded	Wm. Kennedy.
St. Ann's Head	30.06	763.5	30.23	767.8	59	15.0		ENE			2		0					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.39	771.9	51	10.6		NW	15	6.7			3					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.75	755.6	29.82	757.4	66.4	19.1		SW			1		8					D. clouds	Serg't W. H. Lyne.
Sheffield	30.05	763.3	30.33	770.4	56.8	13.8		NE			1		1			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.27	768.8	30.30	769.6	64.4	18.0	50	E			1		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.32	770.1	57.5	14.2		NE	10	4.5			0					Blue sky	Rev. S. J. Perry.
Stratfield Turgiss	30.00	762.0	30.22	767.6	58.3	14.6		NE			4–5		0					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.16	766.1	30.17	766.3	68	20.0		E			4		4					D. clouds	W. Newcombe.
Valencia (Observatory)	30.22	767.6	30.25	768.3	65.6	18.7		SSW	9	4.0			0					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.35	770.9	30.39	771.9	66.0	18.9	61	S	3.2	1.4		0	2			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony													8k			0.07	1.8	Cloudy	Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			29.52	749.8	56.0	13.3	73	W			1					0.02	0.5	Hazy	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			30.32	770.1	63.2	17.3		W			2	5ck		N		0	0	Squally	C. Meldrum.
Mauritius (Observatory)	29.93	760.2	30.12	765.1	74.6	23.7	57	SSE	16.0	7.2		0	1		ESE	0.01	0.3	Fine	R. L. J. Ellery.
Melbourne (Observatory)	29.79	756.6	29.88	758.9	54.0	12.2	83	N	10	4.5			7			0	0		J. Youngclause.
Monach Lt-house, Hebrides			30.35	770.9	52	11.1		NE			3	0	0			0	0		Robert Burnet.
North Unst, Shetland I's			30.33	770.4				W			1	0	3						

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather.	Observer
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Squally	Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 40′, W. 5° 12′			D. clouds	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.22	666.0	29.94	760.5	68.4	20.2	89	NE			1	10cs				Inap.	Inap.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.06	763.4	30.10	764.6	49.6	9.8	35	NE			2		10						
Fanöe	30.15	765.8	30.17	766.3	52.7	4.5		N			4		0						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.88	758.9	29.92	760.0	48.6	9.2	84	SE			7		10					Raining	
Thorshavn (Faröe)	30.31	769.9	30.35	770.8	52.2	11.2	74	W			2		7						
Vestervig	30.02	762.4	30.11	764.8	46.9	8.3	70	NNW			4		9						

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

FRENCH SERIES.

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

Alençon, Normal School	29.48	748.9	30.04	762.9	64.4	18	53	NE			4		1kn			0.004	0.1	Clear	Collignon, Director.
Amiens, Normal School	30.03	762.8	30.14	765.6	62.6	17	94	E			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.84	757.9	30.10	764.4	57.2	14.0	47	NE			3		3s		NE	0	0		Klein, Commandant.
Avignon, Normal School	29.66	753.4	29.74	755.4	71.1	21.7	65	E			1		8		SE	0	0	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.33	745.0	29.87	758.6	70.5	21.4	32	ESE			3		0			0	0	Clear	C. Saillard, Director.
Beauvais, Normal School	29.79	756.6	30.06	763.4	58.3	14.6	50	NE			3		2		E	0	0	Slightly cl'dy	Frère Eugene Marie.
Besançon, Normal School	28.90	734.1	29.75	755.6	74.5	23.6	53	NE			1		2		NE	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.48	748.9	29.68	753.9	66.6	19.2	61	E			2		10		ESE	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.94	735.0	29.86	758.5	71.6	22	49	W			2		5cn	SW	SW	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.29	743.9	29.82	757.3	77.0	25	46	NNE			6		10csn		NNE	0	0	Covered	M. Gence, Director.
Brest, Naval Observatory	29.71	754.6	29.95	760.8	60.1	15.6	58	NE			6		0			0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.86	758.4	29.94	760.4	59.0	15	89	NE			6		2		NE	0	0	Slightly cl'dy	M. Bietrix, Director.
Carcassonne, N. School	29.26	743.1	29.66	753.3	68.0	20	61	E			2		2	W	E	0.138	3.5	Slightly cl'dy	September, Director.
Châlons-sur-Marne, N. Sch'	29.61	752.1	29.92	760.0	71.6	22.0	58	N			1		0			0	0	Clear	Jadot, Director
Chartres, Normal School	29.39	746.6	29.94	760.5	66.2	19	87	SW			4		0			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.45	722.5	29.75	755.6	68.7	20.4	63	NNE			1		10			0	0		Alluard, Director.
Commercy, Normal School	29.07	738.3	29.91	759.7	65.8	18.8	72	N			3		2k		N	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.66	727.9	29.80	756.9	71.8	22.1	41	SE			4		8		SE	0	0		L. Kina, Director.
Grenoble, Normal School	29.02	737.2	29.76	755.8	73.4	23.0	72	N			1	ck				0	0		Ablard, Director.
Le Roche-sur-Yon, N. Sch'l	29.62	752.3	29.83	757.6	67.6	19.8	55	NE			6		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.65	753.0	29.95	760.7	63.7	17.6	52	E			4		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.96	735.6	29.77	756.2	72.5	22.5	63	S			1	2c			S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.80	757.0	29.91	759.8	63.7	17.6	63	NE			8		0			0	0	Clear	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.17	740.8	29.76	756.0	69.6	20.9	65	N			1		10			0	0	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.46	748.3	29.72	754.9	75.0	23.9	44	E			2		9		SE	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.82	732.1	29.83	757.7	68.0	20	33	NE			6		k		NE	0	0		Barbier, Director.
Mont-Louis	24.61	625.2	29.85	758.2	46.8	8.2	74	WSW	13.0	5.8			10		E	0.402	10.2		M. Cave, for Dr. Fines.
Nice	29.76	756.0	29.80	756.8	70.5	21.4	53	E			7			E	E	0	0	Misty	Capt. Boissière, Director
Nismes, Normal School	29.52	749.8	29.72	754.9	72.1	22.3	53	E			1		10		SE	0	0	Covered	M. Boyer, Director.
Perpignan	29.61	752.0	29.71	754.7	64.4	18.0	77	SE	9.4	4.2			10		E	0.039	1.0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.25	565.2			36.0	22							10		SE	0.547	13.9	Threatening	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.69	728.8	29.72	754.9	69.8	21	57	S			1		2sn	S	S	0	0	Slightycld'y	M. Tallieu
Puy de Dome (Summit) Obs	25.03	635.8			51.3	10.7	81	ENE			3		10			0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.74	755.4	29.77	756.2	69.8	21.0	57	ENE			4		10	E	E	0.28	7.	Covered	Lt E. Devante, Director
Rouen, Normal School	29.99	761.8	30.08	764.0	64.8	18.2	53	N			4		2		N	0	0	Slightycld'y	Platrier, Director.
Saint Malo (Port) Obs'y	29.96	760.9	29.99	761.7	59.4	15.2	56	ENE			6		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.82	757.5	29.99	761.7	63.9	17.7	45	NE			4		0			0	0		E. Renou, Director.
Tarbes, Normal School	28.53	724.7	29.55	750.5	77.0	25	47	NW											T. Huguet, Director
Toulouse, Observatory	28.98	736.1	29.69	754.2	66.5	20.3	56	SSE			6		8			0	0	Very cloudy	B. Baillaud, Dir.
Tours	29.67	753.6	29.87	758.6	69.8	21.0	48	NE			4		5		N	0	0	Misty	M. de Tastes.
Versailles, Observatory	29.52	749.7	30.01	762.2	62.2	16.8	46	ENE			6		0			0	0	Very clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.05	737.9	29.73	755.2	73.4	23	83	N			3		5		N	0	0	Cloudy	Nicot, Director.
SUB-SKETCHES.																			
Fort de France, Martinique	30.20	767.0	30.23	767.7	82.4	28										0	0		L'Abbé Marchésl
Paris, Montsouris Obs'y	29.71	754.7			62.6	17.0	46	NE			4		0			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	30.92	762.5	30.04	763.1	58.5	14.7	93	SE	6.3	2.8		2c				0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.17	740.9	30.03	762.8	57.6	14.2	48	NE			6		2k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.93	760.1	30.10	764.4	58.6	14.8	47	N			5		7			0	0		Prof. Dr. Arndt.
Breslau	29.56	750.8	30.09	764.3	50.7	10.4	35	NNW			3		3			0	0		Royal University Obs'y
Carlsruhe	29.52	749.9	29.94	760.5	65.1	18.4	57	E			1		1	E		0	0		Albert Senz.
Cassel	29.47	748.5	30.08	764.0	59.4	15.2	37	NE			3		4	NE		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.72	754.8	30.08	764.0	63.5	17.5	28	NE			3		2			0	0		Physical Society.
Friedrichshafen	28.44	722.3	29.82	757.5	68.4	20.2	51	NE			8		3	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.07	763.8	30.14	765.6	54.9	12.7	53	NNW			2		9			0	0		Dr. Reinhold Kleeman.
Kiel	30.11	764.8	30.13	765.2	54.5	12.5	33	NE			2		6			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.93	760.2	30.01	762.3	42.4	5.8	52	N			8		4	NW		0	0		Prof. E. Luther.
Köslin			30.10	764.4	50.5	10.3		N			2		1			0.209	5.3		H. Müller.
Leipsic Observatory	29.69	754.0	30.11	764.7	56.5	13.6	60	NE			2		9			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.90	759.4	30.13	765.2	54.9	12.7	63	N			4		8ks	N		0.004	0.1		Dr. Assmann.
Memel	29.92	760.0	29.97	761.2	40.3	4.6	45	NNW			4–5		2k						Reinbrecht & Issermann
Munich	28.69	713.5	29.95	760.6	64.4	18.0	53	NE			6		3	NE		0	0		Dr. C. Lang.
Neufahrwasser	30.08	764.1	30.10	764.5	44.4	6.9	38	N			4		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.46	748.2	29.98	761.6	65.3	18.5	39	ENE			3		2	E		0	0		Realiehrer Dicknether.
Posen	29.77	756.2	30.07	763.6	50.0	10.0	38	NW			4		10			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.41	746.9	29.94	760.5	66.2	19.0	49	NE			5		3	W		0	0		Imp. University Observatory.
Stuttgart	29.03	737.3	29.90	759.5	65.1	18.4	41	N					2	N		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.47	723.2	30.05	763.2	62.4	16.9	59	N	2.7	1.2		2c		N		0	0		Reallehrer J. Hopfner.
Wustrow	30.20	767.0	30.22	767.6	50.2	10.1	41	NNE			3		5s			0.047	1.2		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.54	750.4	29.93	760.1	76.6	24.8		SW			2.0		5					½ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.63	752.6	29.68	753.9	84.7	29.3	80	SW					0			0	0	Blue sky	
Deesa	29.16	740.6	29.60	751.9	104.8	40.4	13	SW	8.4	3.8			0			0	0	Blue sky	
Bombay	29.72	754.9	29.76	755.8	86.3	30.2	72	WNW	13	5.8			3	WNW		0	0	D. clouds	
Poona (Yarrowda)	27.87	707.9	29.67	753.7	91.8	33.2	30	W	26	11.6						0	0	Blue sky	
Belgaum	27.20	691.0	29.69	754.2	83.9	28.8	52	WSW	11	4.9			3	SE		0	0	D. clouds	
Lahore	28.86	733.0	29.57	751.0	101.2	38.4	21	Calm	1.5	0.7			3			0	0	Blue sky	
Roorkee	28.72	729.5	29.59	751.6	93.8	34.3	24	N	3	1.3			1			0	0		
Agra	29.05	737.9	29.59	751.6	103.6	39.8	22	W	4.0	1.8			0			0	0		
Nagpur	28.56	725.5	29.56	750.8	101.5	38.6	14	Calm	2.9	1.3			3	NW		0	0	D. clouds	
Jubbulpore	28.29	718.6	29.60	751.8	99.7	37.6	12	Calm	1.9	0.8			3			0	0	D clouds	
Lucknow	29.30	744.2	29.66	753.4	98.0	36.7	31	NNE	1.5	0.7			0			0	0	Blue sky	
Allahabad	29.27	743.4	29.57	751.0	98.7	37.1	31	N	2.2	1.0			0			0	0	Blue sky	
Patna	29.44	747.8	29.62	752.3	89.5	31.9	51	NE	1.7	0.8			0			0.18	4.6	Blue sky	
Hazaribagh	27.65	702.4	29.63	752.5	84.8	29.3	45	ESE	7.2	3.2			6			0.04	1.0	Blue sky	
Cuttack	29.65	753.1	29.73	755.2	76.8	24.9	82	ESE	2.8	1.2			10			1.03	26.2	Overcast	
Calcutta (Alipore)	29.62	752.4	29.64	752.9	89.3	31.8	60	SSW	8.0	3.6			7	SW	SW	0	0	D. clouds	
Goalpara	29.26	743.2	29.66	753.4	84.5	29.2	57	Calm	1.5	0.7			2	W		0.55	14.0	D. clouds	
Chittagong	29.58	751.4	29.67	753.7	86.9	30.5	80	WSW	3.0	1.3			0			0	0		
Sibsagar	29.35	745.6	29.68	753.9	86.4	30.2	68	ENE	2.0	0.9			2			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.49	749.1	29.90	759.4	72.9	22.7	48	SE	1.3	0.6			10			0	0		Prof. Giovanni Clodig.
Milan	29.34	745.2	29.84	757.9	74.6	23.6	55	NW	2.5	1.1			10	SW		0	0		Prof. Schiaparelli.
Padua	29.77	756.2	29.88	758.9	74.7	23.7	53	SE	9.4	4.2			10			0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.96	735.6	29.86	758.4	70.9	21.6	58	SE	4.9	2.2			9	NNE		0	0		Prof. P. F. Denza.
Genoa	29.71	754.5	29.89	759.3	69.4	20.8	46	SW	2.5	1.1			10	NE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.99	711.0	29.89	759.1	68.9	20.5	54	SE			2		9			0	0		Prof. D. C. Bruno.
Pesaro	29.81	757.1	29.85	758.3	71.4	21.9	68	E	15.0	6.7			8	SW		0	0		Prof. Luigi Guidi.
Florence	29.63	752.5	29.88	759.0	78.8	26.0	49	W			2		9			0	0		Cav. F. Meucci.
Leghorn	29.80	757.0	29.89	759.1	71.8	22.1	55	NE	4.3	1.9			7			0	0		Prof. P. Monte.
Rome	29.70	754.3	29.87	758.7	77.7	25.4	48	S	9.4	4.2			10			0	0		Prof. P. S. Ferrari
Lecce	29.72	754.8	29.97	761.1	75.2	24.0	46	SSW	2.5	1.1			4			0	0		Prof. C. De Giorgi.
Cosenza	29.06	738.0	29.93	760.3	77.4	25.2	69	NW	2.5	1.1			3			0	0		Prof. D. Conti.
Cagliari	29.58	751.3	29.77	756.1	74.3	23.5	56	SE			4		2	W		0	0		Prof. A. Pacinotti.
Palermo	29.59	751.6	29.84	757.9	75.2	24.5	48	NE	1.8	0.8			5			0	0		Prof. G. Ciacciatore.
Syracuse	29.90	759.4	29.94	760.5	67.1	19.5	73	E	9.8	4.4			6	WNW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.35	745.6	29.86	758.4	76.1	24.5	46	ESE	0.7	0.3			5	SE		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					60.1	15.6	81	NNE	4.8	2.1			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.84	757.9	30.04	763.0	58.3	14.6	90	SW	1.0	0.5			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.87	758.7	29.93	760.2	61.8	16.6	80	SE	5.4	2.4		8ck	2s		NNW	0	0	Covered	The Staff.
Wakayama	29.93	760.2	29.98	761.5	58.6	14.8	87	Calm	0	0			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and tae respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.08	637.1	30.08	764.0	59.4	15.2	61	Calm			0	2k	0	W		0	0	Clear	Prof. L. Perez.
Guanaxuato	23.70	601.9			61.0	16.1	68	Calm	0	0		0	0			0	0	Clear	Vicente Fernandez.
Leon	24.44	620.8	30.04	763.1	65.5	18.6	70	NW			2	0	0			0	0	Clear	Prof. M. Leal.
Mazatlan	29.75	755.6	30.01	762.2	69.2	20.7	80	E			1	0	0			0	0	Hazy	F. Quijano, C. E.
Mexico, Central Observatory	23.11	587.0	30.12	765.6	54.0	12.2	68	Calm	0	0		3k	0	NW		0	0	Fine	The Staff
Morelia	24.02†	610.0†			71.1	21.7	40	NE			3	3c	0	NE		0	0	Fair	M. Fena, M. D.
Pabellon	24.02	610.0	29.95	760.6	63.7	17.6	67	NW			1	0	0			0	0	Light haze	M. V. de Leon, M. E.
Puebla (Aguascalientes)	23.43	595.1	30.24	768.2	50.2	10.1	47	Calm	0	0		0	0			0.03	0.8	Very clear	Prof. P. Spina.
Puebla (Catholic Institute)	24.23	615.4	30.21	767.3	57.2	14.0	61	SE			1	5	0	W		0	0	½ clouded	G. Barroeta, M. D.
San Luis Potosi	29.89	759.2	29.90	759.5	76.3	24.6	84	S			1	1	0	NW		0	0	Clear	Prof. M. M. Chàzaro.
Tlacotalpam																			Prof. J. Rossell.
Vera-Cruz	22.63	574.7	30.19	766.7	58.1	14.5	60	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.
Zacatecas																			

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.19	766.7	30.19	766.7	54.3	12.4		NNE			5					0	0		
Groningen	30.15	765.7	30.20	767.1	52.7	11.5		N								0	0		
Helder	30.22	767.5	30.22	767.5	49.6	9.8		NNE			4					0.043	1.1		
Hellevoetsluis	30.18	766.5	30.18	766.5	55.0	12.8	49	NE			2					0	0		
Utrecht	30.14	765.5	30.19	766.7	55.2	12.9	50	NNE			3		2			0	0	Lt'ly cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er. 0—10.	Lo'er. 0—10.	Clouds. Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.15	765.7	30.20	767.1	45.7	7.6	51	NNW	31.3	14.0	......	......	1	......	......	0	0	......	
Brōno	30.16	766.0	30.20	767.0	40.6	4.8	53	NNW	9	4	......	......	2	......	......	0	0	......	
Christiania	29.95	760.7	30.10	764.5	48.6	9.2	20	N	9	4	......	......	6	......	......	0	0	......	
Tromsö	30.10	764.6	30.16	766.0	32.4	0.2	71	NE	9	4	......	......	9	......	......	0.020	0.5	......	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Bar. corr. Inches.	Millimeters.	Bar. sea-level Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force. 0—10.	Up'er. 0—10.	Lo'er. 0—10.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.01	762.3	30.22	767.6	64.0	17.8	76	N	......	......	3	......	3	......	......	0	0	......	Dr. J. A. Sampaio.
Campo Major	28.64	727.6	29.63	752.5	63.0	17.2	65	ESE	6.9	3.1	......	......	9	......	......	0	0	......	Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.68	753.9	29.77	756.1	64.9	18.3	75	Calm	0	0	......	......	6	......	......	0.213	5.4	Raining	Capt. D. A. de Cunha.
Lisbon Observatory	29.28	743.6	29.63	752.7	58.[illegible]	14.7	85	NE	12.5	5.6	......	......	9	......	......	0.114	2.9	Raining	The Staff.
Ponta Delgada (Azores)	30.07	763.7	30.14	765.5	61.2	16.2	66	NNE	15.4	6.9	......	......	3	......	......	0	0	......	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Bar. corr. Inches.	Millimeters.	Bar. sea-level Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force.	Up'er.	Lo'er.	Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	A. G. da Silva Costa, Com'd't.
D. Fernando	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	A.M. de Sande, Com'd't.
Duque da Terceira	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela	......	......	29.92	759.9	69.6	20.9	......	W	......	......	2	......	0	......	......	2	W	......	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	J.T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	Antonio Sarmento, Q.M.
Sá da Bandeira	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello S. 14° 52', E 12° 12'	......	......	29.93	760.3	71.2	21.8	......	SW	......	......	4	......	8	......	S	4	SW	......	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China	......	......	29.93	760.1	85.1	29.5	......	E	......	......	2	......	10	......	E	1	......	10	Rain storm	J. G. Felgos, 2nd Lieut.
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

STATIONS.	Bar. corr. Inches.	Millimeters.	Bar. sea-level Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force. 0—10.	Up'er. 0—10.	Lo'er. 0—10.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather.	Observer.
Archangel	29.86	758.4	29.88	758.9	36.1	2.3	74	N	13	6	......	......	7ks	......	......	......	......	......	Capt. Sseliwerstow.
Astrakhan	29.78	756.4	29.70	754.3	78.6	25.9	48	ESE	4	2	......	......	4ks	......	......	......	......	......	Capt. Wisganow.
Barnaul	29.60	751.9	30.10	764.5	57.0	13.9	25	NE	0	0	......	......	4	......	......	......	......	Light clouds	Meteorological Obs.
Dorpat	29.58	751.2	29.82	757.5	43.7	6.5	43	N	11	5	......	......	9k	......	......	......	......	......	Prof. Dr. Weihrauch.
Ekaterinburg	28 80	731.4	29.70	754.3	80.4	26.9	24	SSE	18	8	......	......	8cks	......	......	......	......	Hazy	Meteorological Obs.
Irkutsk	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Kasan	29.20	741.6	29.45	748.0	77.4	25.2	35	SSW	16	7	......	......	7k	......	......	......	......	......	Physical Cabinet.
Kertch	29.79	756.6	29.81	757.1	58.3	14.6	88	ESE	7	3	......	......	5	......	......	......	......	......	Lagorio.
Kieff	28.93	734.8	29.54	750.3	65.1	18.4	55	NW	11	5	......	......	5cks;n	......	......	......	......	......	Physical Cabinet.
Krotkowo*	29.16	740.7	29.60	751.9	79.0	26.1	37	WSW	9	4	......	......	5k	......	......	......	......	......	Cand. Fatjanow.
Lugan	29.40	746.7	29.60	751.7	73.2	22.9	46	SSW	34	15	......	......	6	......	......	......	......	......	Meteorological Obs.
Moscow	28.89	733.7	29.41	747.1	61.0	16.1	78	WNW	7.8	3.5	......	......	10s	......	......	......	......	......	Meteorological Obs.
Nertchinsk	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	Meteorological Obs.
Nikolaiev	29.64	752.9	29.71	754.7	53.6	12.0	85	SSW	18	8	......	......	10n	......	......	......	......	......	Kurdakof.
Nikolaievsk, on the Amoor	29.89	759.2	29.98	761.4	*33.8	1.0	67	Calm	0	0	......	......	10n	......	......	......	......	......	......
Nukuss	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Orenburg	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Pekin (China)	29.50	749.3	29.64	752.9	79.7	26.5	26	SW	11	5	......	......	4k	......	......	......	......	......	Physical Observatory.
St. Petersburg	29.75	755.6	29.76	756.0	43.3	6.3	48	ENE	11	5	......	......	8k	......	......	......	......	......	Central Physical Obs.
Tashkend	28.37	720.5	29.86	758.4	78.4	25.8	55	Calm	0	0	......	......	0	......	......	......	......	......	Teich, A. M.
Tiflis	28.50	723.8	29.88	758.9	66.2	19.0	59	W	4	2	......	......	9n	......	......	......	......	Thunder-storm.	Physical Observatory.
Vladivostock	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Warsaw	29.57	751.0	30.00	761.9	46.2	7.9	36	NNW	16	7	......	......	10ks	......	......	......	......	......	Astronomical Obs.
Wilna	29.36	745.8	29.78	756.5	45.5	7.5	73	NNW	7	3	......	......	9	......	......	......	......	Heavy clouds	Astronomical Obs.
Yeniseisk	30.08	764.1	30.38	771.7	41.0	5.0	38	W	4	2	......	......	0	......	......	......	......	......	Marks.
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Bar. corr. Inches.	Millimeters.	Bar. sea-level Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	Wind From—	Miles per hour.	Meters per second.	Force. 0—10.	Up'er. 0—10.	Lo'er. 0—10.	Upper. From—	Lower. From—	Rain Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.56	750.8	29.67	753.5	61.9	16.6	75	E	4.2	1.89	......	......	10	......	......	0.060	1.53	Squally	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.63	752.7	29.69	754 1	72.5	22.5	65	E	1.0	0.44	......	......	10	......	......	0.039	1.0	Covered	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.75	679.4	......	......	57.6	14.2	76	SE	15.2	6.80	......	......	9	......	......	0.453	11.5	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.47	697.8	29.63	752.7	65.3	18.5	75	S	5.2	2.38	......	0	9	......	......	0.106	2.7	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.51	749 6	29.66	753.3	73.2	22.9	55	SW	4.6	2.06	......	4	4	NE	......	0.036	0.91	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.73	729.8	29.60	751.7	68.7	20.4	67	SW	0	0	......	......	9	......	......	0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.1	30.07	763.8	73.4	23.0	90	E	10.3	4.6	......	......	10n	......	......	0.142	3.6	Raining	Benito Vines, S. J.
Manilla, Philippine Islands.	29.82	757.5	29.87	758.8	85.9	30.0	69	SE	5.5	2.5	......	......	1s	......	......	0	0	Clear.	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.60	751.7	29.69	754.2	63.3	17.4	80	S	14.0	6.3	......	0	10	......	S	0.617	15.7	......	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.97	761.1	30.06	763.4	79.2	26.2	92	SE	0	0	......	4s	1k	SE	SE	1.535	39.00	Clear.	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.06	763.4	30.10	764.4	36.0	2.2	.....	NW	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	30.05	763.3	30.10	764.6	38.8	3.8	48	E	.....	.....	6	.....	6	.....	.....	0	0	.....	
Hernosand	30.05	763.2	30.10	764.5	34.9	1.6	85	NNE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.90	759.5	30.08	764.0	42.8	6.0	27	NNW	.....	.....	4	.....	9	.....	.....	0	0	.....	
Wisby	29.94	760.5	30.00	762.0	41.0	5.0	60	NW	.....	.....	4	.....	3	.....	.....	0.028	0.7	.....	
Sub-Series.																			
Upsala	29.93	760.3	30.02	762.5	43.7	6.5	23	NNE	13.7	6.1	.....	.....	6	.....	NW	0	0	.....	Nils Ekholm.

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

Swedish Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia, N. 48° 20′, W. 8° 32′	.....	.....	.....	Misty	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Geneva	28.41	721.5	29.80	756.9	65.1	18.4	66	N	.....	.....	3	.....	8	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.25	717.5	29.84	757.8	69.4	20.8	63	NE	.....	.....	4	.....	3	.....	.....	0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3 6 mm.; Thermometer, +1.7 Cent. Relative Humidity, +9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1.339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.87	758.6	72.7	22.6	58	SW	11	5.0	.....	.....	8	.....	WSW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.03	762.8	76.6	24.8	.....	SW	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.96	761.0	74.1	23.4	64	W	.....	.....	2	.....	7ks	E	W	0.015	0.38	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	46.8	8.2	.....	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.78	756.4	29.84	757.9	47.7	8.7	63	NE	3	1.3	.....	2k	8ks	NE	.....	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.81	757.2	29.86	758.4	43.0	6.1	78	S	3	1.3	.....	.....	10s	.....	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.62	752.3	29.80	756.9	64.0	17.8	59	W	.....	.....	1	3cs	0	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.66	753.4	29.83	757.7	44.5	6.9	.....	E	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.76	755.9	29.78	756.4	44.5	6.9	80	Calm?	15?	6.7?	.....	.....	10n	.....	.....	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	29.74	755.4	29.80	756.9	55.5	13.1	58	SE	4	1.8	.....	9ck	0	NW	.....	0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.99	736.3	29.80	756.9	53.0	11.7	86	NE	2	0.9	.....	.....	10n	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	29.00	736.6	30.08	764.0	62.0	16.7	56	W	.....	.....	1	1c	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.76	755.9	29.88	758.9	51.9	11.1	45	E	6	2.7	.....	8cs	0	.....	.....	0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.65	753.1	30.03	762.7	64.7	18.2	61	S	.....	.....	1	0	0	.....	.....	0	0	Hazy	Geo. Dickson, B. A.
Hearr's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.61	752.1	29.93	760.2	64.1	17.8	88	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.78	756.4	29.82	757.4	42.8	6.0	57	N	7	3.1	.....	1k	0	N	.....	0	0	Clear	C. H. Rigby.
Montreal, Quebec	29.60	751.8	29.80	756.9	63.1	17.3	61	W	17	7.6	.....	0	0	.....	.....	0.05	1.3	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	30.18	766.6	30.22	767.6	39.1	3.9	75	N	.....	.....	3	7ck	0	.....	.....	0.10	2.5	Fair	J. R. Nason.
Norwood, Ontario	29.28	743.7	29.95	760.7	62.0	16.7	53	NW	5	2.2	.....	6c	0	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.34	745.2	30.03	762.7	57.0	13.9	61	W	6	2.7	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.26	743.2	29.98	761.5	65.7	18.7	49	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.40	746.7	30.08	764.0	59.1	15.1	88	SW	4	1.8	.....	6c	0	NW	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.46	748.3	30.10	764.5	59.3	15.2	75	W	4	1.8	.....	5ck	Haze	W	.....	0	0	Hazy	M. Payne.
Quebec, Quebec	29.43	747.5	29.75	755.6	51.0	10.6	86	W	.....	.....	1	.....	10n	.....	.....	0.13	3.3	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.50	749.3	29.55	760.7	62.3	16.8	61	NW	10	4.5	.....	3cs	2ks	W	.....	Inap.	Inap.	Fair	W. H. McIntyre.
St. John, N. B.	29.65	753.1	29.81	757.2	52.0	11.1	66	S	4	1.8	.....	8ck	0	.....	.....	0	0	Fair	G. Murdock, C. E.
Saugeen, Ontario	29.35	745.5	30.05	763.3	58.1	14.5	65	SW	5	2.2	.....	.....	Sm'e	.....	.....	0	0	Smoky	K. Stewart.
Stratford, Ontario	28.80	731.5	30.06	763.5	57.9	14.4	63	W	6	2.7	.....	2ck	0	N	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.80	756.9	29.84	757.9	45.5	7.5	43	N	6	2.7	.....	0	0	.....	.....	0	0	Clear.	T. C. Hill, C. E.
Toronto, Ontario	29.66	753.4	30.03	762.7	63.2	17.3	52	W	7	3.1	.....	7ck	2s	W	.....	0.20	5.1	Cloudy	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.01	736.8	30.05	763.3	62.4	16.9	60	W	14	6.3	.....	5c	1s	W	.....	0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.76	755.9	29.83	757.7	47.4	8.6	83	SW	4	1.8	.....	6k	4s	N	.....	0	0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.47	748.5	29.73	755.1	37	2.8	90	E	.....	.....	.....	10k	10s	.....	.....	Inap.	Inap.	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	29.75	755.6	39.2	4.0	.....	N	.....	.....	2	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 f., for 360 m.

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

UNITED STATES SERIES.

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.83	757.7	29.90	759.4	70	21.1	36	NW	8	3.6		0	Haze		Calm	0	0	Hazy	
Alpena, Michigan	29.39	746.5	30.04	763.0	53	11.7	67	NE	2	0.9		Haze	0	Calm		0	0	Dense haze	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.09	738.9	30.22	767.6	66	18.9	59	W	6	2.7		8c	Haze	Calm		0	0	Fair	
Atlantic City, New Jersey	30.02	762.5	30.04	763.0	72	22.2	38	W	8	3.6		Haze	Haze	Calm	Calm	0	0	Hazy	
Augusta, Georgia	30.10	764.5	30.31	769.9	62	16.7	72	Calm	0	0		Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	30.04	763.0	30.09	764.3	72	22.2	38	NW	8	3.6		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	29.97	761.2	29.99	761.7	72	22.2	42	NW	11	4.9		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.92	709.2	29.78	756.4	60	15.6	82	E	8	3.6		1k	0	Calm		0.55	14.0	Clear	
Boerne, Texas	28.68	728.5	29.97	761.2	68	20.0	79	SE	4	1.8		5k	0	SE		0	0	Fair	
Boise City, Idaho	27.08	687.8	30.04	763.0	49	9.4	71	S	3	1.3			10s		W	0	0	Cloudy	
Boston, Massachusetts	29.74	755.4	29.90	759.4	63	17.2	47	SW	5	2.2			10s		Calm	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.95	735.3	29.98	761.5	71	21.7	90	E	8	3.6			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	28.78	731.0	29.73	755.1	64	17.8	89	E	14	6.3		5c	0	SW		0.25	6.3	Fair	
Brownsville, Texas	29.96	761.0	30.01	762.2	79	26.1	87	NE	2	0.9		0	8ks		NE	0.51	13.0	Fair	
Buffalo, New York	29.38	746.2	30.07	763.8	57	13.9	63	SW	10	4.5		0	Haze		Calm	0	0	Clear	
Burkes, Arizona					56	13.3	51	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.56	750.8	29.83	757.7	64	17.8	53	S	3	1.3		5cs	Haze	NW		0.02	0.5	Hazy	
Cairo, Illinois	29.84	757.9	30.23	767.8	69	20.6	75	Calm	0	0		0	Fog			0	0	Clear	
Campo, California	27.47	697.7	30.04	763.0	30	−1.1	89	W	1	0.4		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	66	18.9	69	W	12	5.4		0	Haze			0	0	Hazy	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	64	17.8	53	SW	12	5.4		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.20	767.1	30.22	767.6	66	18.9	59	NW	22	9.8		Haze	Haze	Calm	Calm	0	0	Light haze	
Cape May, New Jersey	30.03	762.7	30.06	763.5	64	17.8	67	W	13	5.8		0	0			0	0	Clear	
Castroville, Texas	29.33	745.0	30.02	762.5	71	21.7	85	E	4	1.8			10s		E	0	0	Cloudy	
Cedar Keys, Florida	30.22	767.6	30.24	768.1	67	19.4	74	NE	9	4.0		1cs	0	Calm		0	0	Clear	
Charleston, South Carolina	30.02	762.5	30.08	764.0	65	18.3	73	W	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.37	746.0	30.17	766.3	64	17.8	63	SW	4	1.8		0	Sm'e		Calm	0	0	Clear	
Chattanooga, Tennessee	29.45	748.0	30.24	768.1	64	17.8	73	SW	3	1.3		0	Haze		Calm	0	0	Clear	
Cheyenne, Wyoming	23.92	607.6	29.86	758.4	53	11.7	8	NW	6	2.7		0	0			0	0	Clear	
Chicago, Illinois	29.43	747.5	30.10	764.5	66	18.9	54	SW	5	2.2		1c	Haze	NW	Calm	0	0	Hazy	
Chincoteague, Virginia	30.09	764.3	30.11	764.8	65	18.3	80	NW	11	4.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Cincinnati, Ohio	29.59	751.6	30.24	768.1	60	15.6	71	SE	3	1.3		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.43	747.5	30.13	765.3	67	19.4	48	S	3	1.3		0	0			0	0	Clear	
Coleman City, Texas	28.33	719.6	29.95	760.7	70	21.1	75	SE	12	5.4		0	0			0	0	Clear	
Columbus, Ohio	29.35	745.5	30.18	766.6	60	15.6	65	W	1	0.4		0	0			0	0	Clear	
Concho, Texas	28.18	715.8	29.81	757.2	68	20.0	79	SE	12	5.4		0	2s		S	0	0	Fair	
Corsicana, Texas	29.71	754.6	30.17	766.3	66	18.9	84	Calm	0	0		2cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.45	748.0	30.07	763.8	67	19.4	64	SW	6	2.7		0	0			0	0	Clear	
Dayton, Washington T'y					38	3.3	90	N			1	5c	0	W		0	0	Fair	
Deadwood, Dakota	25.15	638.8			52	11.1	73	Calm	0	0		0	0			0.03	0.8	Clear	
Decatur, Texas	28.9	735.8	30.10	764.5	73	22.8	55	S	4	1.8		2k	0	S		0	0	Clear	
Delaware Breakwater, Del.	30.06	763.5	30.08	764.0	67	19.4	55	NW	12	5.4		0	Haze			0	0	Clear	
Denison, Texas	29.36	745.7	30.14	765.5	69	20.6	75	S	5	2.2		2ck	0	SE		0	0	Fair	
Denver, Colorado	24.65	626.1	29.87	758.7	56	13.3	51	S	6	2.7		0	0			0	0	Clear	
Des Moines, Iowa	29.13	739.9	29.97	761.2	70	21.1	66	SW	6	2.7		2k	Haze	SW	Calm	0	0	Fair	
Detroit, Michigan	29.45	748.0	30.11	764.8	59	15.0	70	SW	4	1.8		2cs	0	Calm		0	0	Clear	
Dodge City, Kansas	27.34	694.4	29.53	750.0	65	18.3	68	S	18	8.0		5cs	5ks	SE	Calm	0	0	Cloudy	
Dubuque, Iowa	29.36	745.7	30.03	762.7	70	21.1	61	S	3	1.3		Haze	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.29	744.0	29.96	761.0	54	12.2	93	SW	1	0.4			10n fog		Calm	0.17	4.3	Light rain	
Eagle Pass, Texas	29.30	744.2	30.01	762.2	75	23.9	77	SE	8	3.6		5ck	0	Calm		0	0	Fair	
Eastport, Maine	29.72	754.9	29.79	756.7	45	7.2	84	NE	8	3.6		0	8ks		W	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.41	747.0	30.11	764.8	62	16.7	56	SW	6	2.7		0	Haze		Calm	0	0	Clear	
Escanaba, Michigan	29.38	746.9	30.02	762.5	59	15.0	76	Calm	0	0			10ks		SW	0	0	Cloudy	
Florence, Arizona	28.47	723.1	30.07	763.8	55	12.8	62	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.49	774.4	38	3.3	54	NE	2	0.9		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.75	704.8	29.53	750.0	51	10.6	93	NE	5	2.2			10s		NE	1.18	30.0	Cloudy	
Fort Custer, Montana	26.69	677.9			53	11.7	79	NW	9	4.0			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.27	641.8	30.03	762.7	64	17.8	53	SW	5	2.2		2cs	0	SW		Inap.	Inap.	Fair	
Fort Elliot, Texas	27.01	686.0	29.17	740.9	66	18.9	69	SE	16	7.2		5c	0	SE		0	0	Fair	
Fort Gibson, Indian Ter.	29.60	751.8	30.12	765.0	71	21.7	58	S	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.23	640.8	30.03	762.7	56	13.3	4	NW	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.85	732.8	30.10	764.5	64	17.8	83	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.00	685.8			59	15.0	53	N	22	9.8		2k	0	N		0	0	Fair	
Fort McKavett, Texas	27.85	707.4	29.72	754.9	68	20.0	79	E	6	2.7		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.90	734.0	29.97	761.2	68	20.0	74	S	3	1.5		0	0			Inap.	Inap.	Clear	
Fort Stevenson, Dakota	27.96	710.2			52	11.1	79	NW	8	3.6		8k	0	NW		1.03	26.2	Cloudy	
Fort Verde, Arizona					49	9.4	51	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.10	764.5	30.14	765.5	74	23.3	76	E	13	5.8		0	8ks		E	0	0	Cloudy	
Grand Haven, Michigan	29.46	748.3	30.09	764.3	64	17.8	63	W	10	4.5		0	0			0	0	Clear	
Helena, Montana					49	9.4	93	S	2	0.9			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.40	746.7	30.17	766.3	63	17.2	62	Calm	0	0		0	0			0	0	Clear	
Indianola, Texas	30.10	764.5	30.13	765.3	75	23.9	86	NE	15	6.7		0	5s		NE	0.09	2.3	Fair	
Jacksboro, Texas	29.00	736.6	30.11	764.8	67	19.4	64	S	6	2.7		0	0			0	0	Clear	
Jacksonville, Florida	30.25	768.3	30.27	768.8	69	20.6	65	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.45	748.0	30.04	763.0	71	21.7	66	S	5	2.2		1c	Sm'e	Calm	Calm	0	0	Dense smoke	
Key West, Florida	30.08	764.0	30.12	765.0	73	22.8	85	NE	16	7.2		10k	0	NE		0	0	Cloudy	
Kittyhawk, North Carolina	30.16	766.1	30.19	766.8	65	18.3	58	W	16	7.2		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.26	743.2	30.26	768.6	62	16.7	72	SW	1	0.4			Haze			0	0	Dense haze	
La Crosse, Wisconsin	29.26	743.2	29.97	761.2	66	18.9	69	S	12	5.4		2ck	0	SW		0	0	Fair	
La Mesilla, New Mexico	26.11	663.2	30.26	768.6	63	17.2	57	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.21	741.9	30.02	762.5	72	22.2	62	S	7	3.1		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.87	758.7	30.18	766.6	68	20.0	84	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.75	755.6	30.10	764.5	43	6.1	83	NE	4	1.8		0	1s		Calm	0	0	Clear	
Louisville, Kentucky	29.64	752.8	30.20	767.1	63	17.2	57	N	1	0.4		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.49	749.0	30.16	766.1	66	18.9	50	SW	1	0.4		0	Haze			0	0	Dense haze	
Madison, Wisconsin	29.07	738.4	30.02	762.5	65	18.3	68	S	3	1.3		2cs	0	W		0	0	Fair	
Marquette, Michigan	29.34	745.2	30.04	763.0	60	15.6	77	NW	2	0.9			10n		Calm	0.07	1.8	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.48	723.4	30.21	767.3	70	21.1	75	SE	4	1.8		0	5s		S	0	0	Fair	
Memphis Tennessee	29.85	758.2	30.19	766.8	73	22.8	67	SW	4	1.8		2cs	Haze	S		0	0	Clear	
Milwaukee, Wisconsin	29.34	745.2	30.05	763.3	64	17.8	63	SW	6	2.7		8c;cs	0	SW.Calm		0	0	Fair	
Mobile, Alabama	30.20	767.1	30.24	768.1	67	19.4	84	NE	4	1.8		2c	0	Calm		0	0	Clear	
Montgomery, Alabama	30.05	763.3	30.28	769.1	64	17.8	83	E	1	0.4		5c	Haze		Calm	0	0	Fair	
Morgantown, West Virginia	29.21	741.9	30.19	766.8	63	17.2	62	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	23.63	600.2	29.99	761.7	36	2.2	90	NW	45	20.1			10ks		NW	0.22	5.6	Cloudy	
Nashville, Tennessee	29.70	754.4	30.22	767.6	67	19.4	60	Calm	0	0		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.78	756.1	29.89	759.2	69	20.6	56	W	6	2.7		0	Haze		Calm	0	0	Dense haze	
New London, Connecticut	29.84	757.9	29.89	759.2	68	20.0	51	SW	3	1.3		Haze	8me;hz	Calm	Calm	0	0	Dense haze	
New Orleans, Louisiana	30.12	765.0	30.18	766.6	73	22.8	71	E	6	2.7		1c	Haze	Calm	Calm	0	0	Clear	
Newport, Rhode Island	29.82	757.4	29.87	758.7	60	15.6	71	SW	4	1.8		5c	Haze	Calm		0	0	Fair	
New River, North Carolina																			
New York, New York	29.79	756.7	29.96	761.0	62	16.7	82	W	9	4.0		2c	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.09	764.3	30.15	765.8	69	20.6	52	W	2	0.9		0	Hz;sme		Calm;W	0	0	Clear	
North Platte, Nebraska	26.93	684.0	29.38	746.2	64	17.8	73	S	8	3.6		Haze	0	Calm		0	0	Clear	
Olympia, Washington Ter	30.11	764.8	30.15	765.8	40.0	4.4	96	N	2	0.9		5cs	0	SW		0	0	Fair	
Omaha, Nebraska	28.81	731.8	29.84	757.9	75	23.9	56	S	14	6.3		2c	2s	W	Calm	0	0	Fair	
Oswego, New York	29.70	754.4	30.01	762.2	55	12.8	62	W	13	5.8		5k	Haze	NW		0	0	Fair	
Pembina, Dakota	28.87	733.3	29.68	753.9	55	12.8	93	E	10	4.5			10s		E	2.34	59.4	Cloudy	
Pensacola, Florida	30.22	767.6	30.25	768.3	69	20.6	70	NE	8	3.6		4cs	0	NE		0	0	Fair	
Philadelphia, Pennsylvania	29.98	761.5	30.03	762.7	68	20.0	47	W	5	2.2		Haze	Haze	Calm	Calm	0	0	Hazy	
Phœnix, Arizona	28.86	733.0	30.65	778.5	60	15.6	49	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.97	761.2	25	— 3.9	38	SW	44	19.7		0	0			0.02	0.5	Clear	
Pilot Point, Texas																			
Pioche, Nevada	23.94	608.1	29.71	754.6	38	3.3	45	SW	1	0.4		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.17	766.3	56	15.3	87	NW	1	0.4		0	Fog		Calm	0	0	Clearing	
Port Huron, Michigan	29.42	747.3	30.07	763.8	62	16.7	56	SW	8	3.6		8c	Haze	W		0	0	Fair	
Portland, Maine	29.77	756.1	29.82	757.4	57	13.9	69	S	8	3.6			10s		Calm	Inap	Inap.	Cloudy	
Portland, Oregon	30.14	765.5	30.22	767.6	46	7.8	84	S	3	1.3		5k	2s	W	W	0	0	Fair	
Portsmouth, North Carolina					66	18.9	64	W	16	7.2		0	0			0	0	Clear	
Prescott, Arizona	24.73	628.1	30.09	764.3	48	8.9	29	SE	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	30.15	765.8	30.17	766.3	71	21.7	62	NE	16	7.2		6c;ck	0	SW;E		0	0	Fair	
Red Bluff, California	29.82	757.4	30.19	766.8	52.5	11.4	83	S	2	0.9		2ck	4s	Calm	Calm	Inap	Inap.	Fair	
Rio Grande City, Texas	29.90	759.4	30.11	764.8	74	23.3	86	NE	8	3.6		0	5s		Calm	0.04	1.0	Fair	
Rochester, New York	29.38	746.2	29.98	761.5	64	17.8	48	W	14	6.3		5c	Haze	NE	Calm	0	0	Fair	
Roseburg, Oregon	29.65	753.1	30.23	767.8	48.5	9.2	81	NW	4	1.8			10s;ks		Calm	0	0	Cloudy	
Sacramento, California	30.10	764.5	30.18	766.6	46	7.8	92	SE	5	2.2		0	0			0	0	Clear	
St. Louis, Missouri	29.59	751.6	30.15	765.8	66	18.9	59	S	8	3.6		1ck	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.08	738.6	29.87	758.7	63	17.2	94	SE	11	4.9			10s		SE	0.38	9.7	Threatening	
Salt Lake City, Utah	25.48	647.2	29.81	757.2	52	11.1	23	SE	4	1.8		7k	0	SW		0	0	Fair	
San Antonio, Texas	29.45	748.0	30.14	765.5	71	21.7	80	E	4	1.8		5ck	0	E		0	0	Fair	
San Diego, California	30.08	764.0	30.15	765.8	50	10.0	79	N	6	2.7		0	1ks		N	0	0	Clear	
Sandusky, Ohio	29.47	748.5	30.13	765.3	63	17.2	62	SW	6	2.7		0	0			0	0	Clear	
Sandy Hook, New Jersey	29.93	760.2	29.96	761.0	66	18.9	59	W	18	8.0		Haze	Haz	Calm	Calm	0	0	Hazy	
San Francisco, California	30.15	765.8	30.22	767.6	50	10.0	86	W	4	1.8		0	1s		N	0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	56	13.3	63	SE	10	4.5		0	0			0	0	Clear	
Savannah, Georgia	30.20	767.1	30.29	769.4	66	18.9	69	Calm	0	0		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.97	761.2	30.19	766.8	68	20.0	79	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.22	767.6	30.26	768.6	65	18.3	58	W	7	3.1		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico	25.39	644.9	29.46	748.3	60	15.6	55	S	1	0.4		0	0			0	0	Clear	
Springfield, Illinois	29.49	749.0	30.15	765.8	66	18.9	59	S	8	3.6		0	0			0	0	Clear	
Springfield, Massachusetts	29.75	755.6	29.88	758.9	69	20.6	48	S	2	0.9		5cs	0	N		Inap.	Inap.	Fair	
Stockton, Texas	26.99	685.5	29.99	761.7	67	19.4	84	SE	24	10.7		5cs	0	SE		0	0	Fair	
Thatcher's Island, Mass	29.80	756.9	29.85	758.2	54	12.2	87	SW	12	5.4		Haze	Haze			0.22	5.6	Dense haze	
Toledo, Ohio	29.44	747.8	30.11	764.8	67	19.4	55	SW	7	3.1		1c	Sm'e	W	Calm	0	0	Fair	
Tucson, Arizona	27.53	699.2	30.08	764.0	63	17.2	28	S	5	2.2		0	0			0	0	Clear	
Umatilla, Oregon	29.72	754.9	30.21	767.3	47	8.3	70	E	4	1.8		0	0			0	0	Clear	
Uvalde, Texas	29.16	740.7	29.96	761.0	73	22.8	81	SE	2	0.9			10s		SE	0	0	Cloudy	
Vicksburg, Mississippi	30.00	762.0	30.26	768.6	65	18.3	78	E	1	0.4		5ck	0	Calm		0	0	Fair	
Virginia City, Montana	24.17	613.9	29.65	753.1	42	5.6	83	Calm	0	0			10s		NE	0.46	11.7	Cloudy	
Visalia, California	29.77	756.1	30.15	765.8	44	6.7	84	NW	1	0.4		0	1s		Calm	0	0	Clear	
Washington, D. C.	30.01	762.2	30.12	765.0	70	21.1	40	NW	7	3.1		0	Haze		Calm	0	0	Clear	
Wickenburg, Arizona					51	10.6	28	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.15	765.8	30.23	767.8	66	18.9	54	W	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	41	5.0	74	SW	6	2.7		5ck	0	SW		0	0	Fair	
Wood's Holl, Massachusetts	29.82	757.4	29.86	758.4	59	15.0	70	SW	8	3.6		5cs	Haze	NW		0	0	Fair	
Yankton, Dakota	28.53	724.6	29.74	755.4	74	23.3	63	S	12	5.4		0	0			0	0	Clear	
Yuma, Arizona	29.83	757.7	29.98	761.5	57	13.9	58	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.03	559.6			57.5	14.2	75	Calm	0	0		8cs;k	0			0.06	1.5	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.05	763.3	30.10	764.5	75	23.9	85	E	3.6	1.6			10n		SE	0.17	4.3	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.00	762.0	30.01	762.2	78	25.6	87	Calm	0	0		8c	2ks	Calm		0	0	Cloudy	James Gall.
Navassa, W. I.	29.83	757.7	29.91	759.7	76	24.4	91	NE	1	0.4			10	E	NE	3.0	76.	Raining	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	78	25.6	91	E			2		8ks	E		0.410	10.41	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.44	747.8	29.99	761.7	85	29.4	81	S			2		2n			0.31	7.9		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		SE				2pc	2k			1.73	44.	½ covered	Carl Flint.
Santiago de Cuba, W. I.	30.01	762.2	30.04	763.0	76	24.4	90	Calm	0	0			8ks		NE	0.1	3.		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.28	769.1	30.33	770.4	30.5	— 0.8	95	E	6	2.7		3k	2s	NE	E	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.29	769.4	70	21.1	75	SE	4	1.8			2		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	29.84	757.9	55	12.8	87	WNW	1	0.4			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.95	760.7	60	15.6	82	SW			3		10n		NW	0.11	2.8			Light rain	
§ Adams, Punta Arenas, Costa Rica	29.94	760.5	80	26.7	81	N			1		5		N					Fair	
§ Alaska, Ancon, Peru *	29.95	760.7	63	17.2	94	Calm			0		10					Smooth		Cloudy	
§ Alert, N. 31° 17′, E. 142° 37′	29.95	760.7	68	20.0	79	NNW			2		10		Calm			Mod'ate	NW	Drizzling	
Alliance, Norfolk, Va.	30.15	765.8	64	17.8	68	SW			1		0			0	0			Clear	
§ Ashuelot, Shanghai, China	30.04	763.0	63	17.2	78	SE			2		2		W					Clear	
Colorado, New York, N. Y.	29.66	753.4	65	18.3	73	SW	5	2.2			0			0	0			Misty	
§ Constitution, N. 38° 40′, W. 74° 34′	30.07	763.8	60	15.6	76	WNW	14	6.3			0					Smooth		Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.19	766.8	62	16.7	72	WSW	4.8	2.1			2			0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.21	767.3	51	10.6	100	W	1.2	0.5			5?		W	0	0			Cloudy?	
§ Jamestown, Sitka, Alaska *	30.00	762.0	48	8.9		Calm			0		10					Smooth		Cloudy	
§ Lackawana, Mazatlan, Mexico †	30.14	765.5	75	23.9	77	SE			1–2		0					Smooth	SE	Clear	
§ Marion, S. 35° 51′, W. 54° 44′	29.96	761.0	60	15.6	71	W			3		2			0	0	Smooth	S	Clear	
§ Michigan, Erie, Pa.	30.04	763.0	64	17.8	58	SW			2		0							Hazy	
§ Monocacy, Shanghai, China	30.03	762.7	64	17.8	78	SSE			1		0							Clear	
§ New Hampshire, Port Royal, S. C.	30.23	767.8	64	17.8	83	NW	6	2.7			1		Calm	0	0			Clear	
Nipsic, Villafranca, France	29.76	755.9	70	21.1	53	ENE			3		10					Smooth		Overcast	
§ Onward, Ancon Bay, Peru †	29.99	761.7	65	18.3	84	Calm			0		10					Long	W	Cloudy	
§ Palos, Shanghai, China	30.00	762.0	62	16.7	94	SSE			1		5?							Cloudy?	
§ Passaic, Washington, D. C.	30.17	766.3	68	20.0	65	W			2		0			0	0			Clear	
§ Pensacola, Vallejo, Cal.	30.04	763.0	52	11.1	86	SW			0–1		3					Smooth		D. clouds	
§ Portsmouth, Hampton Roads, Va.	30.15	765.8	64	17.8	58	W			3		0			0	0	Smooth		Clear	
§ Powhatan, Annapolis, Md.	30.09	764.3	68	20.0	60	Calm?			2?		0							Hazy	
§ Quinnebaug, N. 39° 02′, W. 11° 09′	29.60	751.8	60	15.6	82	NE			2		8		NE			Mod'ate	NE	Fair	
§ Richmond, Shanghai, China	30.05	763.3	65	18.3	84	S			1		0							Clear	
§ Rio Bravo, Brownsville, Texas †	30.18	766.6	74	23.3	100	NE	1	0.4			5		NE	0.55	14.0			Cloudy?	
§ Saratoga, N. 39° 00′, W. 9° 54′	29.67	753.6	61	16.1	77	ENE			1		8		Calm	0	0	Smooth		Cloudy	
§ Shenandoah, Montevideo, Uruguay	29.99	761.7	50	10.0	100	NNE			2		0					Smooth		Foggy	
§ St. Louis, League Island, Pa.	30.06	763.5	65	18.3	94	WSW	10	4.5			0			0	0			Clear	
Swatara, N. 4° 48′, E. 104° 55′ †	29.82	757.4	85	29.4	92	SE			3		5		SE			Smooth		Fair	
§ Tennessee, N. 9° 23′, W. 82° 13′	29.93	760.2	79	26.1	86	SE	2	0.9			8		Calm	1.77	45.0	Long	ENE	Fair	
Ticonderoga, Yokohama, Japan	29.92	760.0	64	17.8	94	W			1		10		SW			Smooth		Raining	
§ Trenton, Phalerium Bay, Greece	29.87	758.7	76	24.4	60	SE			3		0			0	0	Mod'ate	SE	Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	29.98	761.5	66	18.9	50	W			3		5		W					Hazy	
§ Wabash, Boston, Mass.	29.88	758.9	61	16.1	66	SSW	7	3.1			5			0	0			Clear	
§ Wachusett, S. 40° 42′, W. 58° 55′	29.70	754.4	53	11.7	93	WNW			4		0			0	0	Mod'ate	W	Clear	
Wyoming, N. 38° 00′, E. 15° 45′	29.96	761.0	71	21.7	75	SW			2		2		SW			Smooth	SW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 49° 23', W. 39° 25'	29.84	757.9	49	9.4		SSW			7		10		SSW			Heavy	SSW	Cloudy	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 40° 58', W. 46° 32'...*†	29.80	756.9	60	15.6	??	E			1		8		E	1 h'r	1 h'r	Large Confused	SW; SE	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 23° 46', W. 111° 05'....†	29.98	761.5	60	15.6	94	WNW			4		0			0	0	Short	W	Clear.	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 46° 18', W. 38° 20'.....*	29.65	753.1	61	16.1	77	ESE			2		10		E	Drizzles.	Drizzles.	Smooth	SE	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 46° 42', W. 67° 02'	29.88	758.9	68	20.0	51	WSW			1		1		W	0	0	1	W	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China.....†	29.92	760.0	82	27.5	96	E			2		10		E					Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal.....†	30.15	765.8	51	10.6	93	W			3		3k		W	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 33° 28', W. 118° 01'....†	30.17	766.3	54	12.2		N			1		0					Mod'ate	W	Clear	
§ S. S. Idaho, E. Alexander																			
§ S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal.....†	30.17	766.3	44	6.7		NW			2		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 18° 06′, W. 103° 16′....†	29.93	760.2	78	25.6	95	Calm			0		0							Clear	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury, N. 23° 41′, W. 111° 05′....†	29.90	759.4	62	16.7	83	NW			4		0					Small	NW	Clear	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. H. Cobb, N. 22° 47′, W. 154° 40′....†	30.13	765.3	72	22.2	90	ENE			2		0			0	0	Mod'ate	NE	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 35° 51′, E. 173° 35′....†	30.18	766.6	58	14.4	88	N			3		8		NW			Mod'ate	W	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	30.07	763.8	66	18.9		SE			3		2		S	0	0	Smooth		Clear.	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 41° 22′, E 153° 15′....†	30.14	765.5	60	15.6	76	NW			3		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 14° 45′, W. 93° 56′....†	29.95	760.7	85	29.4	96	WNW			3		8		S	0.26	6.6	Small	WNW	Fair	
§ S.S. Dakota, D. E. Griffiths Utsalady, Washington Te †	30.11	764.8	52	11.1	79	NW			3		10		SW	0	0			Hazy	D. E. Griffiths.
§ S.S. Granada, J. M Cavarly N. 16° 47′, W. 104° 29′....†	30.03	762.7	77	25.0	86	NE			2		0			0	0	Light	SW	Hazy	
§ S. S. Idaho, San Francisco, Cal.....†			49	9.4		W			2		0							Clear	
§ S.S. Zealandia, R. C. Ghest, N. 37° 08′, W. 124° 36′.....	30.25	768.3				NNW			2				NW			Smooth	NW	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, Off Mine Head, Eng.....†	30.05	763.3	55	12.8		E			3		1		E			Smooth		Blue sky	W. S. Waugh.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Glendell, N. 44° 31′, W. 44° 47′....*†	29.78	756.4	45	7.2		W			4		5		W	4 h'rs	4 h'rs	Mod'ate	W	Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 42° 29′, W. 69° 55′.....†	29.93	760.2	59	15.0		SW			1		Sm'e			0	0	Long	E	Fine	Mehaffey.
Schr. Adale Fuller, J. Jorgensen, Satilla river, Georgia....	30.31	769.9	67	19.4	69	Calm	0	0			Haze			0	0			Hazy	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis.... N. 26° 36′, W. 59° 09′.....†	30.09	764.3	76	24.4		N			3		2		N	0	0	Long	NW	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 35° 15′, E. 24° 55′.....*†	30.34	770.6	68	20.0		SW			6		8		WSW	Blank	Blank	Rough	SW	Threatening	B. F. Woodbury.
Brigantine George, W. H Champlin, Monabo, Porto Rico ....†	30.17	766.3	80	26.7		E			1		2		E	0	0	Smooth		Clear	
Hippolyta, N. 53° 28′, W 4° 18′.....*	30.09	764.3	58	14.4		ENE			6		2		E	0	0	Smooth		Hazy	
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis...																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 18, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			29.96	761.0				SW			5		8			0.807	20.5	Very cloudy	Dr. Ollive.
Nemours			29.83	757.6	75.7	24.3	50	NE			3		6			0.028	0.7	Cloudy	Metge.
Algiers			29.79	756.7	72.7	22.6	47	WNW			5		6			0	0	Cloudy	Nicolas.
La Calle			29.74	755.4	69.8	21.0	73	NE			1		4			0	0	Cloudy	Fonfrède.
Tunis			29.72	754.9															Jacques.
Sfax			29.76	755.8															Gau.
Saida			29.85	758.3															Bernard.
Tebessa			29.78	756.3	82.2	27.9	11	WSW			6		7			0	0	Very cloudy.	Watrin.
Geriville					61.7	16.5	33	SE			2		3			0	0	Pretty fair.	Bruguiaux.
Laghouat			29.81	757.2	80.2	26.8	12	S			4		5			0	0	Cloudy	Suart.
Biskra			29.69	754.2	93.9	34.4	22	NW			2		4			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is published at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.29	743.9	29.84	758.0	46.6	8.1	75	NE			4		10			0.827	21.0	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.23	742.4	30.00	762.1	50.4	10.2	48	E	6.9	3.1			4			0	0		Dr. Wierzbicki.
Eperies	29.02	737.1	29.90	759.5	50.7	10.4	38	N			5		58; cs			0	0		Julius Mikolik.
Gratz	28.69	728.8	29.98	761.4	40.6	4.8	86	E			2		10			1.331	33.8		Andreas Rospini.
Hermannstadt	28.34	719.7	29.72	754.9	64.4	18.0	84	NW			2		10			1.116	28.35	Raining	Prof. A. Gottschling
Kremsmünster, Observatory	28.51	724.2	29.85	758.2	52.2	11.2	65	E			2		10						The Staff.
Lemberg	28.90	735.5	29.97	761.1	42.8	6.0	50	NE			3		9			0	0		Dr. T. Stanecki.
Polo	29.58	751.4	29.69	754.2	56.8	13.8	92	ESE			2		10			0.559	14.2		I.R. Hydrographic Office.
Szathmar	29.41	747.0	29.87	758.8	55.8	13.2	89	NW			3		10			0.102	2.6		Pet. Pancsics, S. J.
Szegedin	29.56	750.7	29.84	757.9	46.4	8.0	78	NW			3		10			0.278	7.05		Karl Stancel.
Trieste	29.65	753.0	29.75	755.6	56.5	13.6	64	ENE			4		10			0.059	1.5	Raining	P. Busin.
Vienna	29.18	741.2	29.92	760.0	54.7	12.6	41	NE			3		6			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

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BRITISH SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	30.23	767.8	30.33	770.4	49.0	9.4		SE	17	7.6			7			0.070	1.78	D. clouds	W. Boswell.
Ardrossan	30.30	769.6	30.32	770.1	55	12.8		SSW			2		5					D. clouds	G. Carrick.
Armagh, (Observatory)	30.11	764.8	30.34	770.6	65.4	18.6		W	5	2.2			5					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.34	770.6	55.6	13.1		NW	12	5.4			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.77	756.1	30.28	769.1	58.6	14.8		N	6	2.7			4					D. clouds	Thomas Mackereth.
Bradford, Yorkshire																0	0		J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	29.99	761.7	83	28.3		NE			2		2					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.19	766.8	30.28	769.1	57.0	13.9		N			2		7					Threatening	H. Todd.
Cardington			30.26	768.6	54.0	12.2		NE			2		8					Overcast	John McLaren.
Chatham (School M. E.)	30.12	765.0	30.25	768.3	50.6	10.3		NE			2	6ck						D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.31	769.9	30.35	770.9	63	17.2		SSW			4		8					D. clouds	J. Mac Gowan.
Dover	30.20	767.1	30.23	767.8	52	11.1		NE			5		4					½ clouded	J. Costello.
Falmouth (Observatory)	30.06	763.5	30.29	769.4	54.7	12.6		ESE			1		6?					Overcast	The Staff.
Fort Napier, Natal	27.83	706.9	30.14	765.5	63.0	17.2		SE			2		7					Overcast	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.94	760.5	87	30.6		W			1		5					D. clouds	
Galway (Queen's College)			30.31	769.9	66	18.9		SW			1		6					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.75	755.6	29.80	756.9	62.1	16.7		NE			3		8					D. clouds	Pvt. O Baldwin.
Glasgow, (Observatory)	30.09	764.3	30.29	769.4	61.7	16.5		W			2	2c						Blue sky	D. G. Maclean.
Great Yarmouth	30.26	768.6	30.27	768.8	50	10.0		NNE			4		5					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.08	764.0	30.25	768.3	58.7	14.8		NNE			3		5					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.99	761.7	30.21	767.3	52.3	11.3		NE			5		0					Blue sky	Dr. S. E Hoskins, F.R.S.
Helston	30.42	772.7	30.54	775.7	61	16.1		NE			4		0			0	0	Very fine	M. P. Moyle.
Holyhead	30.33	770.4	30.36	771.1	56	13.3		ENE			3		0					Blue sky	John Tilston.
Jersey	29.91	759.7	30.21	767.3	53.3	11.8		NE			6		4					D. clouds	J. Fisher.
Kew (Observatory)	30.22	767.6	30.26	768.6	55.0	12.8		NNE	22	9.8			5					D. clouds	The Met'g'l Office.
Leicester (Museum)	30.04	763.0	30.29	769.4	57.1	13.9		E			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.63	752.6	29.71	754.6	72	22.2		NW			2		1					Blue sky	A. King.
Nairn	30.18	766.6	30.27	768.8	56	13.3		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.09	764.3	75.5	24.2		E			5		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	30.13	765.3	30.32	770.1	59.5	15.3		NNE			4	5c		N		0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.78	756.4	30.30	769.6	57.0	13.9		NNE			3–5		7					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.05	763.3	30.31	769.9	57	13.9		NNE			3		6					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	30.18	766.6	30.26	768.6	59.8	15.4		NE			3		0					Blue sky	John Merrifield.
*Roche's Point	30.41	772.4	30.43	772.9	61	16.1		SE			3		2					¼ clouded	Wm. Kennedy.
St. Ann's Head	30.17	766.3	30.33	770.4	58	14.4		NE			3		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.29	769.4	53.8	12.1		S	20	8.9			10					Drizzling	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.81	757.2	29.87	758.7	72.8	22.7		SW			1		6					D. clouds	Serg't W. H. Lyne.
Sheffield	30.06	763.5	30.34	770.6	58.0	14.4		NE			2		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.30	769.6	30.33	770.4	62.0	16.7	49	W			1		2			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.33	770.4	59.0	15.0		S	7	3.1			7					D. clouds	Rev. S. J. Perry.
Strathfield Turgiss	30.06	763.5	30.28	769.1	58.3	14.6		NE			5		0					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.30	769.6	30.31	769.9	62	16.7		N			6		3					D. clouds	W. Newcombe.
Valencia Observatory)	30.36	771.1	30.38	771.6	62.2	16.8		SW	14	6.3			2					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.22	767.6	30.26	768.6	64.2	17.9	71	S	17.6	7.9		9	8			0	0	Threatening	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.64	752.8	48.0	8.9	74	S			1		5k			0.15	3.8		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.09	764.3	59.4	15.2		W			5		10k			Blank	Blank	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.88	758.9	30.07	763.7	75.0	23.9	54	SSE	12.5	5.6		1	2			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.62	752.3	29.71	754.6	52.2	11.2	92	NNW	10	4.5			10			0.19	4.8	Raining	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.29	769.4	51	10.6		S			3	10	5	SW		0	0		J. Youngclause.
North Unst, Shetland I's			30.26	768.6				S			4		7			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series.

Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Tommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra, N. 49° 33′, W. 5° 04′			D. clouds	Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.20	665.5	29.92	760.0	69.8	21.0	89	Calm			0	8ck				1.22	31.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.11	764.9	30.16	766.1	45.0	7.2	48	NNE			4		8						
Faröe	30.21	767.4	30.23	767.9	52.9	11.6		NE			2		0						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.63	752.5	29.67	753.6	50 4	10.2	87	S			7		8						
Thorshavn (Faröe)	30.08	764.1	30.12	765.0	48.9	9.4	99	SW			2		10					Raining	
Vestervig	30.15	765.8	30.24	768.2	47.1	8.4	48	NE			2		6					Raining	

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.57	751.0	30.12	765.0	55.4	13	73	NE			6		5k		E	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.04	763.0	30.15	765.7	57.2	14	91	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.87	758.8	30.13	765.4	54.0	12.2	40	NNE			4		3k		NNE	0	0		Klein, Commandant.
Avignon, Normal School	29.65	753.2	29.73	755.2	68.5	20.3	68	N			1		5		NE	Inap.	Inap	Cloudy	Girand, Director.
Bar-sur-Seine	29.39	746.4	29.93	760.3	62.1	16.7	44	NE			4		5kn		NE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.85	758.3	30.13	765.2	52.3	11.3	47	NE			3		5		NE	0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	28.97	735.8	29.84	757.8	65.3	18.5	42	ENE			4		5		N	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.58	751.3	29.78	756.3	65.1	18.4	55	NE			2		8		E	0.354	9.0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.95	735.3	29.87	758.7	56.8	13.8	69	W			1		10n		N	0	0	Covered	Marlot, Director.
Brest, Naval Observatory	29.37	746.1	29.91	759.8	61.7	16.5	59	NNE			6		0			0	0	Clear	M. Geuce, Director.
Caen, Normal School	29.92	760.0	30.17	766.2	57.9	14.4	66	NE			4		3		NE	0	0		Ch. de Rermaree, Dir
Carcassonne, N. School	30.03	762.7	30.10	764.6	53.1	11.7	69	NE			6		5		NE	0	0	Cloudy	M. Bietrix, Director.
Châlons-sur-Marne, N. Sch'	29.28	743.8	29.69	754.0	68.0	20	72	E			2		5		E	0.374	9.5	Cloudy	September, Director.
Chartres, Normal School	29.71	754.6	30.02	762.6	60.1	15.6	53	NNW			3		5		NNE	0	0	Cloudy	Jadot, Director
Clermont-Fd, Puy de D. Obs	29.50	749.2	30.06	763.6	57.7	14.3	91	NW			4		3		SW	0	0		E. Lequint, Director.
Commercy, Normal School	28.48	723.3	29.81	757.1	59.2	15.1	62	N			1		10		N	0.248	6.3		Alluard, Director.
Commune de Gréasque*	29.10	739.2	29.96	760.9	56.5	13.6	52	N			4		k		N	0	0		Dr. Coullet, Director.
Grenoble, Normal School	28.63	727.3	29.78	756.3	64.9	18.3	69	N			1		8		SW	0	0		L. Kina, Director.
La Roche-sur-Yon, N. Sch'l	29.08	738.6	29.84	758.0	55.8	13.2	79	W			1		8kn		SE	0	0	Very cloudy	Ablard, Director.
Le Mans, Normal School	29.75	755.6	29.96	761.0	64.0	17.8	36	N			6		2		N	0	0	Slightly cld'y	Mouillot, Director.
Lons-Le-Saulnier, N. School	29.74	755.5	30.05	763.3	58.1	14.5	41	NNE			6		2		NNE	0	0	Slightly cld'y	Poirrier, Director.
Lorient, Naval Observatory	28.89	733.8	29.79	756.6	57.9	14.4	57	NNE			2		5n		S			Cloudy	M. Cadoret, Director
Lyons Obs'y (Park Station)	29.99	761.8	30.10	764.6	57.2	14.0	47	NE			6		2		NE	0	0	¼ covered	Lt. T. Carré, Director.
Mâcon, Normal School	29.20	741.7	29.82	757.5	52.2	11.2	97	WSW			1		10			0 484	12.3	Raining	Ch. André, Director.
Marseilles, Observatory																			Galzin, Director.
Mirecourt, Normal School	29.45	748.1	29.72	754.8	66.0	18.9	78	W			1		9		S	Inap	Inap.		E. Stephan, Director.
Mont-Louis	28.87	733.2	29.89	759.3	59.0	15	50	NNE			6		k		NNE	0	0		Barbier, Director.
Nice	24.56	623.7	29.79	756.7	49.6	9.8	51	E	15.0	6.7			7		NE	0.303	7.7		M. Cave, for Dr. Fines.
Nismes, Normal School	29.67	753.7	29.71	754.6	68.4	20.2	76	SW			3		10	SW	SW	0.134	3.4	Light rain	Capt. Boissiere, Director
Perpignan	29.53	750.0	29.72	755.0	68.5	20.3	69	E			1		10		E	0.453	11.5	Covered	M. Boyer, Director.
Pic du Midi (Plantade) H. P	29.60	751.8	29.71	754.5	64.4	18.0	71	SE	5.6	2.5			7		NE	0.244	6.2		Dr. Fines.
Pic du Midi (Summit) H. P.	22.32	566.8			41.7	5.4							10		SE	0.642	16.3	Threatening	M. Baylac, for Gen'l de Nansouty
Privas, Normal School																			
Puy de Dome (Summit) Obs	28 71	729.2	29.76	756.0	57.2	14	79	S			1		5kn	S	S	0.59	15.	Cloudy	M. Tallieu
Rochefort, Naval Obs'y	24.98	634.4			39.7	4.3	100	NNE			4		10			0.205	5.2	Misty	Alluard, Director.
Rouen, Normal School	29.85	758.3	29.89	759.1	67.5	19.7	35	NE			4		0			0	0	Clear	Lt. E. Devante, Director
Saint Malo (Port) Obs'y	30.04	763.1	30.13	765 3	59.5	15.3	39	NE			4		2		NE	0	0	Slightly cld'y	Platrier, Director.
Saint Maur (near Paris)	30.20	767.1	30.23	767.9	59.4	15.2	56	NNE			4		0			0	0	Clear	Lt. Hercouet, Director.
Tarbes, Normal School	29.91	759.7	30.08	763.9	57.7	14.3	40	NE			4		0?		NE	0	0	Partly cld'y	E. Renou, Director.
Toulouse, Observatory	28.68	728.4	29.73	755.1	64.4	18	90	N											T. Huguet, Director
Tours	29.04	737.7	29.76	756 0	66.7	19.3	73	NW			1		10			0.071	1.8	Covered	B. Bailland, Dir.
Versailles, Observatory	29.78	756.4	29.98	761.4	62.6	17.0	34	NE			4		0			0	0	Clear	M. de Tastes.
Villefranche-sur-Saone, N.S	29.59	751.6	30.09	764.2	55.8	13.2	42	NE			6		0			0	0	Clear	Dr. A. Berigny, Director
SUB-SERIES.																			
Fort de France, Martinique	29.06	738.2	29.77	756.1	59.4	15.2	76	ESE			1		5		NE	0	0	Cloudy	Nicot, Director.
Paris, Montsouris Obs'y																0	0		L'Abbé Marchési
Zi-Ka-Wei (near Shanghai)	30.19	766.7	30.21	767.4	81.0	27.2													
	29.80	756.8			54.9	12.7	39	NE			3		2		NE	0	0		Marié Davy, Director.
	30.01	762.3	30.04	762.9	59.9	15.5	89	E	7.2	3.2		7c				0	0	Very cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.09	738.8	29.95	760.6	58.3	14.6	33	NE			6		4k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.92	760.0	30.10	764.4	51.4	10.8	36	E			4		6			0	0		Prof. Dr. Arndt.
Breslau	29.48	748.8	30.01	762.3	52.7	11.5	34	E			1		7			0	0		Royal University Obs'y
Carlsruhe	29.49	749.1	29.91	759.8	61.2	16.2	49	N			2		9	E		0	0		Albert Senz.
Cassel	29.45	748.0	30.06	763.5	50.7	10.4	40	N			4		6	N		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.68	753.8	30.04	763.0	59.7	15.4	21	N			3		2			0	0		Physical Society.
Friedrichshafen	28.41	721.7	29.84	757.8	56.8	13.5	51	NE			6		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.08	764.0	30.15	765.8	50.4	10.2	45	NNE			5		6			0	0		Dr. Reinhold Kleemann.
Kiel	30.15	765.9	30.17	766.3	49.3	9.6	35	NNE			4		4			0.031	0.78		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.98	761.5	30.07	763.6	42.4	5.8	44	NW			5		2	NW		0.031	0.8		Prof. E. Luther.
Köslin			30.08	763 9	48.0	8.9		N			4		2			0	0		H. Müller.
Leipsic Observatory	29.60	751.7	30.02	762.4	55.4	13.0	37	NNW			2		6	N		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29 86	758.4	30.09	764.2	51.8	11.0	51	NNW			5		7ks	N		0.004	0.1		Dr. Assmann.
Memel	29.97	761.3	30.02	762.5	38.1	3.4	78	N			5		8k					Snow & sleet	Reinbrecht & Issermann.
Munich	28.06	712.6	29.91	759.7	53.4	11.9	43	NE			6		10	NE		0	0		Dr. C. Lang.
Neufahrwasser	30.10	764.4	30.11	764.8	41.9	5.5	42	NNW			3		9			0.114	2.9	Snowy	A. Lothes.
Neustadt (Palatinate)	29.43	747.4	29.95	760.8	59.9	15.5	37	NNE			1		7			0	0		Reallehrer Dicknether.
Posen	29.75	755.7	30.04	763.1	47.3	8.5	58	E			4		10			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.39	746.5	29.94	760.4	60.3	15.7	39	ENE			5		3	E		0	0		Imp. University Observatory.
Stuttgart	28.97	735.8	29.85	758.2	59.4	15.2	27	NE					5	E		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.45	722.5	30.02	762.5	55.9	13.3	59	ENE	3.6	1.6			9k		ENE	0	0		Reallehrer J. Hopfner.
Wustrow	30.14	765.6	30.17	766.2	48.4	9.1	55	NE			4		4s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.0 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.53	750.0	29.91	759.7	77.2	25.1		SW			3.0							Misty	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.62	752.3	29.67	753.5	84.9	29.4	83	SW					0			0	0	Blue sky	
Deesa	29.16	740.8	29.61	752.2	104.3	40.2	11	SSW	9.6	4.3			0			0	0	Blue sky	
Bombay	29.71	754.6	29.74	755.5	86.2	30.1	74	WNW	14	6.3			0			0	0	Blue sky	
Poona (Yarrowda)	27.86	707.6	29.67	753.6	89.4	31.9	45	W	27	12.1			2		ESE	0	0	D. clouds	
Belgaum	27.22	691.4	29.72	754.9	81.5	27.5	66	W	11	4.9			6	NW	NW	0	0	D. clouds	
Lahore	28.96	735.4	29.67	753 6	98.2	36.8	19	NE	3.5	1.6			4			0	0	Blue sky	
Roorkee	28.72	729.5	29.59	751.6	91.8	33.2	19	N	4	1.8			3			0	0		
Agra	29.02	737.1	29.56	750.7	101.1	38.4	18	SW	4.4	2.0			0			0	0		
Nagpur	28.56	725.4	29.55	750 5	105.0	40.6	15	E	2.8	1.2			2	W		0	0	D. clouds	
Jubbulpore	28.27	718.1	29.58	751.2	101.2	38.4	15	E	2.5	1.1			4			0	0	D. clouds	
Lucknow	29.20	741.6	29.56	750.7	99.4	37.4	32	NE	7.5	3.4			0			0	0	Blue sky	
Allahabad	29.25	742.9	29.54	750.4	101.2	38.4	30	N	1.5	0.7			0			0	0	Blue sky	
Patna	29.46	748.2	29.63	752.6	95.6	35.3	39	NNW	1.9	0 8			2	NW	NW	0	0		
Hazaribagh	27.64	702.0	29.59	751.6	89.3	31.8	40	ESE	8.9	4.0			1			0	0	Thunder	
Cuttack	29.58	751.2	29.66	753 2	89.2	31.8	60	S	1.5	0.7			1			0	0.	D. clouds	
Calcutta (Alipore)	29.62	752.3	29.61	752.8	86.9	30.5	63	SSW	6.0	2.7			0			0	0	Blue sky	
Goalpara	29.24	742.7	29.64	752.8	86.9	30.5	66	Calm	2.0	0.9			0			0	0	Blue sky	
Chittagong	29.58	751.4	29.67	753.6	85.9	29.9	78	W	4.2	1.9			0			0	0		
Sibsagar	29.34	745.1	29.67	753 5	86.2	30.1	73	NE	1.4	0.6			9			0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.33	745.0	29.74	755 3	56.3	13.5	52	NE	10.5	4.7			10			0.039	1.0		Prof. Giovanni Clodig.
Milan	29.11	739.4	29.60	751.9	73.4	23.0	56	S	6.3	2.8			9	E		0.276	7.0		Prof. Schiaparelli.
Padua	29.56	750.9	29.67	753.6	61.5	16.4	77	NE	17.4	7.8			10	E		0.004	0.1		Prof. Dott. Lorenzoni.
Moncalieri	28.76	730.5	29.66	753.3	60.6	15.9	88	SE	3.1	1.4			9	NNE		0	0		Prof. P. F. Denza.
Genoa	29.50	749.4	29.69	754.2	63.9	17.7	79	SE	7.4	3.3			10	NE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.80	706.2	29.70	754.3	58.1	14.5	76	W			4		10			0.520	13.2		Prof. D. C. Bruno.
Pesaro	29.58	751.3	29.63	752.5	65.1	18.4	86	SW	3.8	1.7			8	SSW		0.079	2.0		Prof. Luigi Guidi.
Florence	29.42	747.2	29.67	753.7	65.5	18.6	81	S			2		10	SW		0.346	8.8		Cav. F. Meucci.
Leghorn	29.65	753.0	29.73	755.1	66.9	19.4	73	W	2.5	1.1			10			0.252	6.4		Prof. P. Monte.
Rome	29.54	750.3	29.71	754 7	73.2	22.9	60	SSW	10.5	4.7			9			0	0		Prof. P. S. Ferrari
Lecce	29.50	749.3	29.75	755.6	70.9	21.6	45	SSE	20.6	9.2			8	SW		0	0		Prof. C. De Giorgi.
Cosenza	28.91	734.3	29.78	756.5	76.3	24.6	42	NW	3.8	1.7			9			0	0		Prof. D. Conti.
Cagliari	29.57	751.0	29.76	755.8	71.6	22.0	60	SW			2		1			0	0		Prof. A. Pacinotti.
Palermo	29.54	750.3	29.79	756.6	73.2	22.9	60	E	15.4	6.9			3			0	0		Prof. G. Ciacciatore.
Syracuse	29.72	754.9	29.76	756.0	65.7	18.7	86	NE	3.8	1.7			8	W		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.22	742.3	29.73	755.2	66.7	19.3	81	WSW	2.5	1.1			10	SW		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.1	16.7	70	NNE	7.5	3.3			8cs			0	0	Dull	K. Sasaki.
Nagasaki, I. M. Obs'y	29.85	758.2	30.05	763.3	63.3	17.4	77	SW	0.6	0.3		ck	6cs			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.09	764.3	30.16	766.0	60.9	16.1	90	SSW	3.5	1.6		0	0			0	0	Clear.	The Staff.
Wakayama	30.06	763.5	30.11	764.8	62.8	17.1	83	SSW	0.6	0.3			10s			0	0	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.98	634.4	29.98	761.5	56.8	13.8	59	W			1	0	0			Inap.	Inap.	Hazy	Prof. L. Perez.
Guanaxuato	23.67	601.2			60.8	16.0	68	SW	Inap.	Inap.		s	0	SW		0	0	Clear	Vicente Fernandez.
Leon	24.40	619.7	30.00	762.0	65.0	18.3	74	SW			1	0	0			0	0	Blue sky	Prof. M. Leal.
Mazatlan	29.68	753.8	29.94	760.4	69.6	20.9	80	N			1	4cs	0	SW		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.07	586.0	30.02	762.4	57.0	13.9	70	Calm	0	0		1k	0			0	0		The Staff
Morelia	24.01†	609.9†			70.3	21.3	42	SE			3	2c	0	E		0	0	Clear	M. Fena, M. D.
Pabellon (Aguascalientes)	23.97	608.9	29.95	760.6	61.7	16.5	71	NW			1	0	0			0	0	Light haze	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.43	595.1	30.19	766.7	53.8	12.1	59	NW	5.4	2.4		0	0			Inap.	Inap.	Very clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.10	764.6	64.0	17.8	78	E			1	1	0	E		0	0	Clear	G. Barroeta, M. D.
Tacotalpam	29.88	758.9	29.89	759.2	77.4	25.2	88	S			2	5	3	NW	NW	0	0	Cloudy	Prof. M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.58	573.5	30.12	765.1	59.7	15.4	61	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	30.21	767.2	30.21	767.2	52.5	11.4		NNW			4					0	0		
Heider	30.13	765.4	30.19	766.8	53.2	11.8		NE								0	0		
Hellevoetsluis	30.21	767.3	30.21	767.3	49.3	9.6		NNE			4					0	0		
Utrecht	30.19	766.7	30.19	766.7	53.8	12.1	60	N			4					0	0		
	30.13	765.3	30.18	766.5	54 1	12.3	45	NNW			4		5			0.039	1.0	Cloudy	H. v. d. Brink

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.17	766.4	30.23	767.8	49.6	9.8	40	NNW	17.2	7.7			0			0.154	3.9		
Brönø	30.24	768.0	30.28	769.0	41.5	5.3	42	NNW	9	4			1			0	0		
Christiania	30.08	764.9	30.23	767.7	48.6	9.2	88	ENE	7	3			8			0	0		
Tromsö	30.15	765.8	30.21	767.2	35.6	2.0	59	W	9	4			10			0.028	0.7		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.08	764.1	30.29	769.4	64.8	18.2	76	NNE			3		3			0	0		Dr. J. A. Sampaio.
Campo Major	28.78	730.9	29.77	756.1	59.9	15.5	50	SSW	8.1	3.6			7			0.039	1.0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.78	756.3	29.86	758.5	63.1	17.3	73	SE	1.3	0.6			10			0.012	0.3		Capt. D. A. de Cunha.
Lisbon Observatory	29.43	747.6	29.79	756.6	64.4	18.0	64	E	2.5	1.1			8	E		0.130	3.3		The Staff.
Ponta Delgada (Azores)	30.02	762.6	30.10	764.4	63.3	17.4	65	NE	21.7	9.7			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela			29.92	759.9	70.9	21.6		WNW			2		1		W	2	W		Blue sky	C. J. de Sonna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q.M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado. J. A. de Brito Capello Mosamedes, Benguela			29.90	759.4	70.2	21.2		NW			3		2			2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo. J. M. T. Guimaraes, Macao, China			29.88	759.0	84.6	29.2		E			2		10		E	1		18	Rain storm	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.93	760.3	29.95	760.8	31.8	— 0.1	69	N	13	6			10						Capt. Sseliwerstow.
Astrakhan	29.98	761.5	29.90	759.4	80.8	27.1	36	WSW	11	5			7k			Blank	Blank		Capt. Wisganow.
Barnaul	29.62	752.3	30.10	764.5	66.7	19.3	29	NE	13	6			0						Meteorological Obs.
Dorpat	29.70	754.4	29.95	760.8	33.8	1.0	83	ENE	9	4			9ks;n					Snow & sleet	Prof. Dr. Weihrauch.
Ekaterinburg	28.79	731.2	29.69	754.2	78.1	25.6	31	SSE	13	6		ck	7ks						Meteorological Obs.
Irkutsk																			
Kasan	29.27	743.5	29.53	750.0	71.2	21.8	51	S	18	8			10n						Physical Cabinet.
Kertch	29.96	761.0	29.98	761.5	61.2	16.2	91	SSE	7	3			2						Lagorio.
Kieff	29.18	741.2	29.82	757.3	51.6	10.9	54	SW	9	4			8cks;n						Physical Cabinet.
Krotkowo*	29.19	741.5	29.64	752.8	70.9	21.6	57	S	9	4			9ks						Cand. Fatjanow.
Lugan	29.55	750.5	29.75	755.6	72.1	22.3	34	WNW	13	6			2						Meteorological Obs.
Moscow	29.18	741.1	29.72	755.0	49.1	9.5	65	N	7.8	3.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.83	757.7	29.90	759.5	70.5	21.4	56	SSW	18	8			7cs						Kurdakof.
Nikolaievsk, on the Amoor	30.07	763.7	30.15	765.9	35.6	2.0	80	Calm	0	0			10s						
Nukuss																			
Orenburg																			
Pekin (China)	29.46	748.3	29.60	751.9	77.7	25.4	39	Calm	0	0			3k					Thunder	Physical Observatory.
St. Petersburg	29.90	759.4	29.91	759.8	35.6	2.0	48	NE	13	6			10n						Central Physical Obs.
Tashkend	28.42	721.8	29.91	759.6	81.3	27.4	50	Calm	0	0			0						Teich, A. M.
Tiflis	28.53	724.7	29.89	759.1	74.7	23.7	37	Calm	0	0			9s						Physical Observatory.
Vladivostock																			
Warsaw	29.56	751.6	30.02	762.5	46.6	8.1	32	NNW	4	2			8ks						Astronomical Obs.
Wilna	29.51	749.6	29.94	760.5	41.9	5.5	50	NW	7	3			8					Heavy clouds	Astronomical Obs.
Yeniseisk	30.03	762.7	30.31	769.9	57.2	14.0	38	SW	9	4			8						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.61	752.2	29.72	754.9	64.8	18.2	55	S	0	0			10			0.030	0.75	Covered	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.55	758.2	29.91	759.6	59.2	15.1	83	NW	1.0	0.47			10			0.083	2.1	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.89	682.9			54.0	12.2	86	N	19.3	8.62			9			0.236	6.0	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.58	700.4	29.79	756.6	56.5	13.6	96	SW	2.2	1.00		0	10			0.492	12.5	Raining	The Staff.
Murcia, Met. Obs'y	29.61	752.0	29.75	755.7	79.0	26.1	53	SE	3.1	1.39		0	3			0.010	0.26	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.95	735.4	29.83	757.7	63.5	17.5	70	NE	28.0	12.5			5			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.95	760.7	30.01	762.4	76.1	24.5	83	ENE	6.7	3.0		6ck;c	4ks	WSW	E	0.032	0.8	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands.	29.81	757.2	29.86	758.5	86.1	30.1	76	SE	6.2	2.8			4ck		E	0	0	Cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.70	754.5	29.80	757.0	64.8	18.2	100	S	14.5	6.5		0	10		S	0.396	10.1		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.95	760.6	30.04	762.9	78.8	26.0	92	SE	0	0		4ks	4k	SE	SE	1.240	31.50	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.16	766.0	30.20	767.0	36.3	2.4		N			4		10			0	0		
Umea	30.19	766.7	30.24	768.0	39.2	4.0	52	E			2		9			0	0		
Hernosand	30.15	765.8	30.20	767.1	41.0	5.0	42	N			2		10			0	0		
Stockholm	30.02	762.6	30.20	767.1	40.3	4.6	26	NE			6		8			0	0		
Wisby	30.02	762.4	30.08	763.9	40.6	4.8	62	NNE			6		3			0	0		
Sub-Series.																			
Upsala	30.08	764.1	30.17	766.3	40.1	4.5	31	N	15.0	6.7			8		NNE	0	0		Nils Ekholm.

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

Swedish Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia, N. 48° 18′, W. 8° 39′			30.23	767.9	51.8	11.0	82	N			6		2						D. clouds	J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Geneva	28.41	721.5	29.84	757.8	53.2	11.8	70	NNE			4		10			0	0	Covered	The Observatory.
Zurich	28.23	717.1	29.87	758.7	54.3	12.4	63	NE			1		9			0	0	Covered	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.7 mm.; Thermometer, —5.1 Cent. Relative Humidity, +18 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Constantinople			29.91	759.7	76.5	24.7	49	SW	3	1.5			2		SW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.81	757.1	71.8	22.1		SW			3		10			0	0	Covered.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.98	761.4	75.0	23.9	60	W			2		2ks	E	W	0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.					42.8	6.0		NE	3	1.3		0	0			0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	29.98	761.5	30.04	763.0	46.4	8.0	51	NE	5	2.2		0	0			0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	29.97	761.2	30.01	762.2	40.2	4.6	59	N	20	8.9		0	0			0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.75	755.6	29.94	760.5	52.1	11.2	75	E			1		10n			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.89	759.2	30.06	763.5	41.0	5.0		N			2	0	0			0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.11	764.8	30.18	765.3	39.5	4.2	77	NE	15	6.7		0	0			0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.98	761.5	30.05	763.3	50.0	10.0	46	NE	4	1.8		0	0			Inap.	Inap.	Clear.	Prof. Harrison.
Fort Garry, Manitoba	28.69	728.7	29.50	749.3	48.5	9.2	96	NE	6	2.7			10n			0.750	19.05	Light rain	James Stewart.
Granton, Ontario	28.89	733.8	29.95	760.7	67.0	19.4	74	W			1	8k	0			Inap.	Inap.	Fair.	James Grant.
Halifax, N. S.	29.82	757.4	29.95	760.7	56.9	13.8	48	NW	8	3.6		0	0			0.013	2.87	Clear.	A. Allison.
Hamilton, Ontario	29.57	751.1	29.95	760.7	60.7	15.9	78	S			1	7cs	0	S		0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.62	752.3	29.95	760.7	55.1	12.8	90	NE	5	2.2			10n			0.14	3.6	Light rain	S. Woods, M. A.
Little Glace Bay, N. S.	29.83	757.7	29.87	758.7	52.1	11.2	41	NW	4	1.8		1k	0	N		0	0	Clear	C. H. Rigby.
Montreal, Quebec	29.84	757.9	30.03	762.7	52.0	11.1	66	NE	12	5.4			10s			0	0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	30.11	764.8	30.15	765.8	39.5	4.2	67	Calm			0	0	0			0	0	Clear	J. R. Nason.
Norwood, Ontario	29.25	742.9	29.94	760.5	57.0	13.9	84	E	4	1.8			10s			0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.26	743.2	29.94	760.5	56.0	13.3	97	E	7	3.1			Fog			0.20	5.1	Foggy	Rev. R. Mosley.
Peterboro, Ontario	29.23	742.4	29.96	761.0	58.2	14.6	70	NE			1	0	8ks			0.01	0.3	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.28	743.7	29.96	761.0	63.1	17.3	89	Calm	0	0		7ck	0	W		0	0	Fair.	H. Morgan.
Port Stanley, Ontario	29.32	744.7	29.96	761.0	59.1	15.1	85	SE	4	1.8		2k	Haze	NW		0	0	Clear.	M. Payne.
Quebec, Quebec	29.74	755.4	30.07	763.8	48.0	8.9	56	E			5		8s			0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.55	750.6	30.01	762.2	49.0	9.4	93	Calm	0	0			Fog			0.06	1.5	Light rain	W. H. McIntyre.
St. John, N. B.	29.83	757.7	30.09	764.3	50.0	10.0	51	NE	11	4.9		0	0			0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.21	741.9	29.90	759.4	61.4	16.3	91	SE	6	2.7			10n			0.09	2.3	Cloudy	K. Stewart.
Stratford, Ontario	28.68	728.5	29.92	760.0	63.5	17.5	80	Calm	0	0		1cs	8ks	N		0	0	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	29.83	757.7	29.87	758.7	56 0	13.3	39	W	9	4.0		0	0			0	0	Clear.	T. C. Hill, C. E.
Toronto, Ontario	29.58	751.3	29.97	761.2	56.4	13.6	79	E	8	3.6			10n			0.14	3.6	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.91	734.3	29.93	760.2	67.8	19.9	68	NW	2	0.9		7k	0	W		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.91	759.7	29.98	761.5	55.6	13.1	71	N	6	2.7		3c	0	NW		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.64	752.8	29.90	759.4	47	8.3	70	W				5k	5s			0	0	Fair	John Delany.
St. Pierre, S. P., Pilophat Maritime			29.80	756.9	42.8	6.0		W			3					0	0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 f., for 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.91	759.7	29.99	761.7	60	15.6	71	N	4	1.8			10s			0.02	0.5	Cloudy	
Alpena, Michigan	29.28	743.7	29.91	759.7	54	12.2	93	NW	7	3.1			10s		Calm	0.95	24.1	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.98	736.1	30.08	764.0	72	22.2	58	W	7	3.1		0	Haze			0	0	Clear.	
Atlantic City, New Jersey	30.00	762.0	30.02	762.5	67	19.4	69	NW	3	1.2		Haze	Haze	Calm	Calm	0	0	Hazy	
Augusta, Georgia	29.99	761.7	30.19	766.8	66	18.9	74	SE	3	1.3		Haze	Haze	Calm	Calm	0	0	Light haze.	
Baltimore, Maryland	29.98	761.5	30.02	762.5	77	25.0	49	NW	5	2.2		5k	Haze	NW	Calm	0	0	Fair	
Barnegat, New Jersey	29.98	761.5	30.00	762.0	62	16.7	72	NE	5	2.2		0	Sm'e		Calm	0	0	Smoky	
Bismarck, Dakota	27.94	709.7	29.80	756.9	52	11.1	100	NW	16	7.2			10n		Calm	0.04	1.0	Light rain	
Boerne, Texas	28.53	724.6	29.81	757.2	68	20.0	100	SE	8	3.6			10ks		SE	0	0	Cloudy	
Boise City, Idaho	27.26	692.4	30.22	767.6	48	8.9	63	SE	2	0.9			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	29.91	759.7	30.06	763.5	54	12.2	67	N	7	3.1			10n		Calm	Inap.	Inap.	Light rain	
Brackettville, Texas	28.82	732.0	29.84	757.9	72	22.2	80	E	11	4.9			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.53	724.6	29.46	748.3	63	17.2	83	NW	14	6.3		0	Haze		Calm	0	0	Clear.	
Brownsville, Texas	29.88	758.9	29.93	760.2	77	25.0	86	E	1	0.4			10s		Calm	0	0	Cloudy	
Buffalo, New York	29.26	743.2	29.94	760.5	57	13.9	75	SW	8	3.6		8ck	Haze	W	Calm	0	0	Hazy	
Burkes, Arizona					54	12.2	38	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.73	755.1	30.02	762.5	54	12.2	74	S	6	2.7			10n		NW	Inap.	Inap.	Light rain	
Cairo, Illinois	29.71	754.6	30.09	764.3	74	23.3	68	S	6	2.7		Haze	Haze			0	0	Hazy	
Campo, California	27.40	696.0	29.98	761.5	30	— 1.1	78	SW	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.98	764.0	30.09	764.3	68	20.0	79	SW	10	4.5		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.00	762.0	30.02	762.5	70	21.1	53	SW	10	4.5		0	Haze		Calm	0	0	Clear.	
Cape Lookout, N. Carolina	30.12	765.0	30.13	765.3	69	20.6	75	W	14	6.3		Haze	Haze	Calm	Calm	0	0	Light haze.	
Cape May, New Jersey	29.96	761.0	29.99	761.7	65	18.3	78	NW	6	2.7			10s		Calm	0	0	Cloudy	
Castroville, Texas	29.20	741.7	29.87	758.7	74	23.3	76	SE	6	2.7			10s		SE	0	0	Cloudy	
Cedar Keys, Florida	30.14	765.5	30.16	766.1	70	21.1	75	E	5	2.2		1c	0	Calm		0	0	Clear.	
Charleston, South Carolina	30.11	764.8	30.17	766.3	70	21.1	80	W	4	1.8		0	0			0	0	Clear.	
Charlotte, North Carolina	29.26	743.2	30.06	763.5	69	20.6	61	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.34	745.2	30.12	765.0	68	20.0	70	SW	5	2.2			Haze		Calm	0	0	Clear	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	44	6.7	45	NW	6	2.7		0	0			0	0	Clear.	
Chicago, Illinois	29.23	742.4	29.89	759.2	70	21.1	66	SW	10	4.5		0	0			0	0	Clear	
Chincoteague, Virginia	30.00	762.0	30.02	762.5	68	20.0	86	W	4	1.8		Haze	Haze	Calm	Calm	0	0	Hazy	
Cincinnati, Ohio	29.43	747.5	30.07	763.8	63	17.2	72	SE	3	1.3		0	0			0	0	Clear	
Cleveland, Ohio	29.29	744.0	29.99	761.7	70	21.1	50	S	7	3.1		Haze	Haze	Calm	Calm	0	0	Clear	
Coleman City, Texas	28.19	716.0	29.79	756.7	71	21.7	75	SE	7	3.1			10s		S	0	0	Cloudy	
Columbus, Ohio	29.20	741.7	30.01	762.2	68	20.0	60	S	4	1.8		0	Fog		Calm	0	0	Clear	
Concho, Texas	28.03	711.9	29.64	758.2	71	21.7	71	S	19	8.5		10k	0	S		0	0	Cloudy	
Corsicana, Texas	29.58	751.3	30.04	763.0	67	19.4	79	S	4	1.8		0	8ks		S	0	0	Cloudy	
Davenport, Iowa	29.22	742.2	29.83	757.7	68	20.0	60	SW	9	4.0		0	0			0	0	Clear.	
Dayton, Washington T'y					44	6.7	75	SW			1	0	0			0	0	Clear.	
Deadwood, Dakota	25.34	643.6			48	8.9	70	Calm	0	0		0	0			0.06	1.5	Clear.	
Decatur, Texas	28.83	732.3	29.96	761.0	70	21.1	66	SE	12	5.4		2k	0	SW		0	0	Clear.	
Delaware Breakwater, Del.	29.98	761.5	30.01	762.2	65	18.3	73	W	10	4.5		Haze	Haze			0	0	Hazy	
Denison, Texas	29.22	742.2	29.99	761.7	68	20.0	79	S	8	3.6		2cs	0	Calm		0	0	Fair	
Denver, Colorado	24.83	630.7	30.05	763.3	50	10.0	32	S	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	28.88	733.5	29.71	754.6	72	22.2	62	S	5	2.2		2c	0	W		0	0	Clear.	
Detroit, Michigan	29.26	744.0	29.93	760.2	65	18.3	63	SW	7	3.1		2ck	Haze	W	Calm	0	0	Clear	
Dodge City, Kansas	27.29	693.2	29.46	748.3	68	20.0	47	S	8	3.6		8ck	0	W		0	0	Cloudy	
Dubuque, Iowa	29.14	740.1	29.80	756.9	70	21.1	57	S	6	2.7		Haze	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.01	736.8	29.68	753.9	41	5.0	100	NE	20	8.9			Fog		Calm	0.27	6.9	Foggy	
Eagle Pass, Texas	29.15	740.4	29.85	758.2	75	23.9	77	SE	12	5.4			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.93	760.2	29.99	761.7	51.5	10.8	63	NW	13	5.8		1c	0	W		Inap.	Inap.	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.27	743.4	29.96	761.0	70	21.1	48	SW	2	0.9		2c	Haze	Calm	Calm	0	0	Fair	
Escanaba, Michigan	29.18	741.1	29.82	757.4	54	12.2	74	NE	4	1.8			10s		SW	0.12	3.0	Cloudy	
Florence, Arizona	28.41	721.6	30.01	762.2	57	13.9	58	Calm	0	0		0	0			0	0	Clear.	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	41	5.0	49	E	3	1.3		0	0			0	0	Clear.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.78	705.6	29.58	751.3	49	9.4	93	NW	2	0.9			10s		NW	0.82	20.8	Cloudy	
Fort Custer, Montana	26.83	681.5			51	10.6	65	W	6	2.7		5k	0	W		0	0	Fair	
Fort Davis, Texas	25.19	639.8	30.15	765.8	66	18.9	64	SW	2	0.9		0	0			0	0	Clear.	
Fort Elliot, Texas	26.83	681.5	28.96	735.6	65	18.3	73	S	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.42	747.3	29.94	760.5	70	21.1	61	S	8	3.6		1c	0	W		0	0	Clear	
Fort Grant, Arizona	25.18	639.6	29.98	761.5	56	13.3	9	NW	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.67	728.2	29.89	759.2	70	21.1	75	SE	6	2.7			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.21	691.1			50	10.0	71	W	16	7.2		5cs	0	Calm		0.01	0.3	Fair	
Fort McKavett, Texas	27.70	703.6	29.54	750.3	69	20.6	75	S	8	3.6			10ks		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.70	729.0	29.76	755.9	71	21.7	71	S	18	8.0		0	0			0	0	Clear.	
Fort Stevenson, Dakota																			
Fort Verde, Arizona					44	6.7	45	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.97	761.2	30.02	762.5	76	24.4	73	E	10	4.5		1ck	0	SE		0	0	Clear	
Grand Haven, Michigan	29.26	743.2	29.88	758.9	66	18.9	74	S	22	9.8		0	0			0	0	Clear	
Helena, Montana					43	6.1	51	SW	5	2.2		2c	0	SW		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.24	742.7	29.98	761.5	69	20.6	61	S	1	0.4		0	Sm'e		Calm	0	0	Clear	
Indianola, Texas	29.97	761.2	30.00	762.0	76	24.4	86	E	12	5.4		5c	2s	SW	E	0	0	Fair	
Jacksboro, Texas	28.83	732.3	29.91	759.7	71	21.7	90	SE	10	4.5		0	0			0	0	Clear.	
Jacksonville, Florida	30.15	765.8	30.18	766.6	71	21.7	66	Calm	0	0		0	0			0	0	Clear.	
Keokuk, Iowa	29.24	742.7	29.82	757.4	73	22.8	59	SW	12	5.4		2c	Sm'e	Calm	Calm	0	0	Dense smoke	
Key West, Florida	30.01	762.2	30.05	763.3	77	25.0	77	E	14	6.3		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.06	763.5	30.08	764.0	68	20.0	70	W	13	5.8		5c	Haze	W	Calm	0	0	Fair	
Knoxville, Tennessee	29.15	740.4	30.13	765.3	66	18.9	74	SW	1	0.4			Haze			0	0	Dense haze.	
La Crosse, Wisconsin	29.00	736.6	29.69	754.1	71	21.7	62	S	12	5.4		0	0			Inap.	Inap.	Clear	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	52	11.1	25	Calm	0	0		0	2s		Calm	0	0	Fair	
Laredo, Texas																			
Leavenworth, Kansas	28.98	736.1	29.78	756.4	71	21.7	62	S	13	5.8		4k	0	SW		0	0	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.74	755.4	30.05	763.3	68	20.0	74	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.66	753.4	30.00	762.0	48	8.9	85	N	4	1.8		0	0			0	0	Clear.	
Louisville, Kentucky	29.50	749.3	30.04	763.0	68	20.0	68	SW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.41	747.0	30.06	763.5	73	22.8	50	SW	1	0.4		0	Haze			0	0	Clear	
Madison, Wisconsin	28.84	732.5	29.78	756.4	68	20.0	70	S	8	3.6		0	0			0	0	Clear	
Marquette, Michigan	29.12	739.6	29.81	757.2	50	10.0	86	SE	3	1.3			10n		Calm	0.33	8.4	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.31	719.1	30.01	762.2	71	21.7	80	S	11	4.9			10ks		SE	0	0	Cloudy	
Memphis, Tennessee	29.72	754.9	30.05	763.3	73	22.8	59	SE	4	1.8		Haze	Haze			0	0	Hazy	
Milwaukee, Wisconsin	29.13	739.9	29.82	757.4	72	22.2	58	SW	10	4.5		0	Haze			0	0	Dense haze	
Mobile, Alabama	30.09	764.3	30.13	765.3	68	20.0	84	S	3	1.3		5c	0	Calm		0	0	Fair	
Montgomery, Alabama	29.94	760.5	30.17	766.3	68	20.0	74	SE	3	1.3		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.07	738.4	30.03	762.7	67	19.4	64	Calm	0	0		0	Haze			0	0	Clear	
Mt. Washington, N. H.	23.80	604.5	30.16	766.1	34	1.1	69	NW	5	2.2		0	10;sm		NW	0	0	Cloudy	
Nashville, Tennessee	29.59	751.6	30.11	764.8	72	22.2	67	W	1	0.4		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	29.92	760.0	30.03	762.7	63	17.2	57	E	7	3.1			10s		E	0	0	Cloudy	
New London, Connecticut	30.00	762.0	30.05	763.3	59	15.0	65	NE	4	1.8		9ck	Haze	NW	Calm	0	0	Cloudy	
New Orleans, Louisiana	30.04	763.0	30.09	764.3	73	22.8	71	E	8	3.6		0	Sm'e		Calm	0	0	Clear	
Newport, Rhode Island	29.99	761.7	30.04	763.0	58	14.4	70	NE	3	1.3			10s		Calm	0	0	Cloudy	
New River, North Carolina					67	19.4	68	W			1	Haze	Haze	Calm	Calm			Light haze	
New York, New York	29.85	758.2	30.02	762.5	64	17.8	62	E	16	7.2		Haze	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	29.99	761.7	30.05	763.3	75	23.9	48	SW	6	2.7		5c	Haze	Calm	Calm	0	0	Clear	
North Platte, Nebraska	27.02	686.3	29.53	750.0	54	12.2	74	NW	12	5.4		0	0			0	0	Clear	
Olympia, Washington Ter.	30.13	765.3	30.17	766.3	45.0	7.2	92	S	1	0.4		10k	0	S		0	0	Cloudy	
Omaha, Nebraska	28.56	725.4	29.58	751.3	73	22.8	59	S	13	5.8			10s		Calm	0	0	Cloudy	
Oswego, New York	29.63	752.6	29.95	760.7	59	15.0	88	Calm	0	0			10s		W	0.19	4.8	Cloudy	
Pembina, Dakota	28.69	728.7	29.50	749.3	48	8.9	100	NW	22	9.8			10s		Calm	0.54	13.7	Cloudy	
Pensacola, Florida	30.11	764.8	30.14	765.5	71	21.7	71	NE	7	3.1		4cs	0	NE		0	0	Fair	
Philadelphia, Pennsylvania	29.95	760.7	30.00	762.0	72	22.2	54	SE	2	0.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Phœnix, Arizona	28.78	731.0	30.53	775.4	69	20.6	39	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.78	451.6	29.99	761.7	20	— 6.7	41	SW	14	6.3		0	0			0	0	Clear	
Pilot Point, Texas																			
Pioche, Nevada	24.10	612.1	29.87	758.7	45	7.2	46	NW	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.02	762.5	60	15.6	88	Calm	0	0			Fog		Calm	0	0	Dense fog	
Port Huron, Michigan	29.27	743.4	29.91	759.7	64	17.8	68	S	10	4.5		0	Haze			0	0	Clear	
Portland, Maine	29.98	761.5	30.03	762.7	57	13.9	58	NW	1	0.4			10s		Calm	0	0	Cloudy	
Portland, Oregon	30.12	765.0	30.19	766.8	48	8.9	93	N	2	0.9		10cs	0	W		0	0	Cloudy	
Portsmouth, North Carolina					67	19.4	64	SW	15	6.7		0	0			0	0	Clear	
Prescott, Arizona	24.75	628.6	30.11	764.8	37	2.8	45	S	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	72	22.2	71	E	10	4.5		8ck	0	SE		0	0	Fair	
Red Bluff, California	29.79	756.7	30.15	765.8	55.0	12.8	87	S	1	0.4		0	1s		Calm	0	0	Clear	
Rio Grande City, Texas	29.74	755.4	29.99	761.7	72	22.2	90	Calm	0	0		0	5s		E	0.14	3.6	Fair	
Rochester, New York	29.29	744.0	29.89	759.2	60	15.6	88	W	3	1.3			10n		Calm	0.02	0.5	Heavy rain	
Roseburg, Oregon	29.62	752.3	30.20	767.1	49.5	9.7	85	Calm	0	0			10s		Calm	0	0	Cloudy	
Sacramento, California	30.06	763.5	30.14	765.5	50	10.0	86	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	29.98	761.5	71	21.7	62	S	14	6.3		0	0			0	0	Clear	
St. Paul, Minnesota	28.74	730.0	29.51	749.5	71	21.7	66	S	15	6.7		5c	0	W		0.20	5.1	Fair	
Salt Lake City, Utah	25.73	653.5	30.06	763.5	47	8.3	48	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.30	744.2	29.98	761.5	73	22.8	81	SE	2	0.9			10ks		SE	0	0	Threatening	
San Diego, California	29.99	761.7	30.06	763.5	49	9.4	93	N	4	1.8		0	2ks		W	0	0	Fair	
Sandusky, Ohio	29.32	744.7	29.97	761.2	69	20.6	56	SW	12	5.4		0	0			0	0	Clear	
Sandy Hook, New Jersey	29.98	761.5	30.01	762.2	59	15.0	76	E	18	8.0		Haze	Haze	Calm	Calm	0	0	Hazy	
San Francisco, California	30.13	765.3	30.19	766.8	50	10.0	86	W	16	7.2		1c	0	NW		0	0	Clear	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	47	8.3	21	N	4	1.8		0	0			0	0	Clear	
Savannah, Georgia	30.10	764.5	30.20	767.1	73	22.8	67	SW	3	1.3		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	72	22.2	75	S	3	1.3		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.14	765.5	30.17	766.3	70	21.1	75	W	9	4.0		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico	25.37	644.4	29.43	747.5	61	16.1	12	SW	7	3.1		0	0			0	0	Clear	
Springfield, Illinois	29.31	744.5	29.95	760.7	70	21.1	70	SW	9	4.0		0	Haze		Calm	0	0	Clear	
Springfield, Massachusetts	29.93	760.2	30.06	763.5	61	16.1	71	NE	2	0.9			10s		SW	0	0	Threatening	
Stockton, Texas	26.86	682.2	29.86	758.4	66	18.9	84	S	11	4.9		0	0			0.16	4.1	Clear	
Thatcher's Island, Mass.	30.02	762.5	30.07	763.8	51	10.6	100	NW	10	4.5			10n		W	0.06	1.5	Light rain	
Toledo, Ohio	29.28	743.7	29.93	760.2	71	21.7	58	SW	8	3.6		Haze	Haze	Calm	Calm	0	0	Hazy	
Tucson, Arizona	27.47	697.7	30.02	762.5	66	18.9	36	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.81	757.2	30.00	762.0	50	10.0	65	W	5	2.2		2c	0	NW		0	0	Clear	
Uvalde, Texas	29.02	737.1	29.82	757.4	73	22.8	85	SE	6	2.7			10ks		S	0	0	Cloudy	
Vicksburg, Mississippi	29.88	758.9	30.14	765.5	69	20.6	75	SE	4	1.8		0	0			0	0	Clear	
Virginia City, Montana	24.32	617.7	29.79	756.7	34	1.1	79	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.71	754.6	30.09	764.3	49	9.4	85	W	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.92	760.0	30.04	763.0	74	23.3	47	NW	2	0.9		2c	Haze	NW	Calm	0	0	Fair	
Wickenburg, Arizona					55	12.8	12	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.07	763.8	30.15	765.8	70	21.1	66	W	11	4.9		0	0			0	0	Clear	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	41	5.0	65	Calm	0	0		5cs	0	Calm		0	0	Fair	
Wood's Holl, Massachusetts	30.00	762.0	30.04	763.0	55	12.8	74	NE	8	3.6			10s		NW	0	0	Cloudy	
Yankton, Dakota	28.44	722.4	29.66	753.4	66	18.9	74	W	20	8.9		5k	0	SW		0	0	Fair	
Yuma, Arizona	29.73	755.1	29.88	758.9	59	15.0	59	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			59.0	15.0	71	Calm	0	0			10n			0	0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.99	761.7	30.04	763.0	77	25.0	82	Calm	0	0		8cs	0	Calm		0.02	0.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	80	26.7	83	Calm	0	0		8c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I.	29.91	759.7	29.99	761.7	79	26.1	78	E	3	1.3		5k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	77	25.0	91	E			2		8ks	E		0.770	19.56	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.44	747.8	30.00	762.0	76	24.4	94	Calm			0		10n			0.72	18.3		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		SE				7	0		SE	Blank	Blank	⅞ covered	Carl Flint.
Santiago de Cuba, W. I.	29.98	761.5	30.01	762.2	76	24.4	86	Calm	0	0			8s		Calm	0.175	4.45		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.32	770.1	30.37	771.4	29.0	— 1.7	94	NE	12	5.4		6k	0	N		0	0	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.15	765.8	70	21.1	85	NE	10	4.5			2d		SE					Fair	
§ Navy Yard, Portsmouth, N. H.	30.03	762.7	55	12.8	80	NW	1	0.4			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.12	765.0	62	16.7	86	Calm			0		0			0.13	3.3			Clear	
§ Adams, Punta Arenas, Costa Rica	29.93	760 2	78	25.6	91	N			2		2		N					Fair	
§ Alaska, Ancon, Peru *	30.01	762.2	62	16.7	94	Calm			0		10					Smooth		Misty	
§ Alert, N. 31° 47′, E. 141° 26′	30.16	766.1	70	21.1	70	ESE			3		0					Smooth		Clear	
Alliance, Norfolk, Va.	30.06	763.5	70	21.1	66	WNW			1		0			0	0			Clear	
§ Ashuelot, Shanghai, China	29.99	761 7	63	17.2	78	ESE			2		10							Cloudy	
Colorado, New York, N. Y.	30.02	762.5	62	16.7	88	ESE	5	2.2			8		S;W	0	0			Cloudy	
§ Constitution, New York, N. Y.	30.10	764.5	60	15.6	76	ENE	9	4.0			8		Calm			Smooth		Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.09	764 3	67	19.4	64	SW	9.6	4.3			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.21	767.3	52	11.1	100	W	2.4	1.1			8		W	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.94	760.5	44	6.7		Calm			0		10					Smooth		Cloudy	
§ Lackawana, Mazatlan, Mexico †	30.07	763.8	71	21.7	80	NE			2-3		5		NE			Smooth	NE	Fair	
§ Marion, S. 37° 34′. W. 56° 03′	29.87	758.7	57	13.9	87	WNW			5		2			0	0	Mod'ate	wsw	Fair	
§ Michigan, Erie, Pa.	29.91	759.7	70	21.1	59	SW			2		2		SW					Hazy	
§ Monocacy, Shanghai, China	29.97	761.2	63	17.2	83	SE			0-1		8							Hazy	
§ New Hampshire, Port Royal, S. C.	30.16	766.1	68	20.0	79	WSW	8	3.6			0			0	0			Clear	
§ Onward, Ancon Bay, Peru †	29.99	761.7	64	17.8	89	NW			3		10		NW			Long	W	Misty	
§ Palos, Shanghai, China	29.97	761.2	62	16.7	100	ESE			2		8							Overcast	
§ Passaic, Washington, D. C.	30.03	762.7	70	21.1	90	Calm			0		2			0	0			Clear	
§ Pensacola, Vallejo, Cal.	30.11	764.8	55	12.8	93	SW			2-3		9					Smooth		D. clouds	
§ Portsmouth, Hampton Roads, Va.	30.04	763.0	66	18.9	74	WSW			2		2			0	0	Smooth		Misty	
§ Powhatan, Annapolis, Md.	30.02	762.5	71	21.7	75	NW			2		2							Hazy	
§ Quinnebaug, N. 39° 34′, W. 12° 42′	29.79	756.7	61	16.1	82	NE			1		8		NE			Long	NE	Fair	
§ Richmond, Shanghai, China	29.97	761.2	67	19.4	79	NE			2		10							Overcast	
§ Rio Bravo, Brownsville, Texas †	30.15	765.8	74	23.3	100	SE	2	0.9			8		Calm	0.04	1.0			Cloudy	
§ Saratoga, N. 38° 40′, W. 9° 20′	29.83	757.7	59	15.0	100	S			1		5		S	0	0	Smooth		Pleasant	
§ Shenandoah, Montevideo, Uruguay	29.95	760.7	52	11.1	73	NW			4		2					Smooth		Fair	
§ St. Louis, League Island, Pa.	30.00	762.0	66	18.9	68	Calm	0	0			10			0	0			Hazy	
Swatara, N. 6° 01′, E. 103° 58′ †	29.82	757.4	82	27.8	91	SSE			1		10		Calm			Smooth		Cloudy	
§ Tennessee, N. 10° 40′, W. 81° 48′	29.95	760.7	86	30.0	76	NNE	4	1.8			2		NNE	0	0	Smooth		Clear	
Ticonderoga, Yokohama, Japan	30.14	765.5	66	18.9	94	S			1		0					Smooth		Light haze	
§ Trenton, Off Hydra I'd, Greece	29.94	760.5	75	23.9	68	Calm			0		0			0	0	None		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.00	762.0	65	18.3	64	NE			3		2		NW					Hazy	
§ Wabash, Boston, Mass.	30.06	763.5	54	12.2	87	N	2	0.9			10							Raining	
§ Wachusett, S. 41° 58′, W. 60° 17′	29.56	750.8	55	12.8	87	WNW			5-6		2		W	0	0	Mod'ate	W	Clear	
Wyoming, N. 40° 15′, E. 13° 25′	29.70	754.4	69	20.6	79	W			4		8		W			Smooth	W	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read oT; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 48° 13', W. 44° 49'	29.87	758.7	36	2.2		SW			4		10		SW			Mod'ate	W	Cloudy	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth,
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 43° 00', W. 40° 07'...*†	30.05	763.0	72	22.2	90	W			4		2		W	1 h'r	1 h'r	Small	W	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
‡S. S. Newbern, W. Metzger, N. 26° 00', W. 113° 27'....†	30.00	762.0	56	13.3	94	NW			4		2		NW	0	0	Mod'ate	WNW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 48° 17', W. 30° 44'....*	29.86	758.4	60.5	15.8	91	S			5		10		SW	Driz-zles.	Driz-zles.	Mod'ate	S	Gloomy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. America, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 38° 33', W. 72° 41'	29.98	761.5	69	20.6	80	SW							WSW	0	0	1	WSW	Hazy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
‡S. S. Belgic, L. Meyer, Hong-Kong, China....†	29.84	757.9	77	25.0	100	E			1		10		E					Overcast	D. A. Joyce.
‡S. S. Gaelic, W. H. Kidley, San Francisco, Cal....†	30.15	765.8	50	10.0	93	WSW			5		0			0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
‡S. S. Ancon, E. Alexander, San Pedro, Cal.....†	30.06	763.5	61	16.1		NW			1		0					Light	SW	Clear	
‡S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
‡S. S. State of California G. Dobney, San Francisco, Cal.....†	30.17	766.3	45	7.2		NW			2		2		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 16° 46', W. 100° 07'....†	29.85	758.2	82	27.8	74	SE			1		2		SW			Light	SSE	Clear.	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury, N. 25° 34', W. 113° 04'....†	29.87	758.7	59	15.0	82	NW			4		2		NW			Mod'ate	NW	Fair.	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, N. 21° 19', W. 157° 52'....†	30.03	762.7	76	24.4	82	NE			2		0			0	0	Mod'ate	NE	Clear.	W. H. Hawes.
§ S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 35° 44', E. 168° 54'....†	29.92	760.0	62	16.7	94	SW			6		2		SW			Rough	SW	Clear.	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	29.91	759.7	65	18.3		SE			3		2		SE	0	0	Smooth		Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 43° 29', E 158° 35'....†	30.24	768.1	48	8.9	76	ENE			2		8		E	0	0	Smooth		Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, N 15° 47' W 98° 21'....†	29.93	760.2	83	28.3	100	W			2		5		W	1.01	25.7	Mod'ate	SW	Fair.	
§ S. S. Dakota, D. E. Griffiths Seattle, Washington Ter.†	30.19	766.8	55	12.8	80	Calm			0		10			0	0			Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly Acapulco, Mexico.....†	29.98	761.5	80	26.7	91	NE			2		2k		W	0	0	Light	SSW	Hazy	
§ S. S. Idaho, San Francisco, Cal.....†			53	11.7		W			5		0			0	0			Clear	
§ S. S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson,																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, Mersey River, Eng.....†	30.08	764.0	56	13.3		E			2		1		E			Smooth		Blue sky	H. N. Goulden.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell, N. 42° 18', W 51° 46'....*†	29.99	761.7	33	0.6		WSW			3		0			0	0	Mod'ate	W	Clear.	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N 43° 42', W. 69 20'.....†	30.12	765.0	59	15.0		NW			1		10		NNW	0	0	Smooth		Gloomy	Mehaffey.
Schr. Adele Fuller, J. Jorgensen, Satilla river, Georgia	30.21	767.3	70	21.1	75	Calm	0	0			0			0	0			Clear.	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis N. 25° 04', W. 59° 33'.....†	30.13	765.3	79	26.1		E			5		2		E	0	0	Long	N	Clear.	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 35° 35', E. 23° 10'.....*†	30.34	770.6	67	19.4		WSW			2		2		W	0	0	Rough	SW	Clearing	B. F. Woodbury.
Brigantine George, W. H. Champlin, Monabo, Porto Rico....†	30.16	766.1	82	27.8		Calm			0		0			Showers.	Showers.	Smooth		Clear	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 19, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.93	760.3				SW			4		7			0.276	7.0	Very cloudy	Dr. Ollive.
Nemours			29.88	758.9	66.6	19.2	68	WNW			1		6			0	0	Cloudy	Metge.
Algiers			29.82	757.5	73.8	23.2	43	WNW			6		1			0	0	Very fair	Nicolas.
La Calle			29.75	755.7	68.9	20.5	78	NW			1		6			0	0	Cloudy	Fonfrède.
Tunis			29.72	754.9															Jacques.
Sfax			29.84	757.9															Gau.
Saida			29.89	759.2															Bernard.
Tebessa			29.78	756.3	71.8	22.1	36	NW			6		7			0	0	Very cloudy	Watrin.
Geriville					63.7	17.6	32	N			1		0			0	0	Clear	Brugniaux.
Laghouat			29.82	757.4	79.2	26.2	15	NW			3		2			0.091	2.3	Fair	Suart.
Biskra			29.70	754.3	88.9	31.6	33	NW			4		4			Inap.	Inap.	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.36	745.7	29.92	759.9	45.5	7.5	89	SW			4		10			0.110	2.8	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.24	742.6	30.02	762.5	45.0	7.2	61	NNE	13.7	6.1			10			0.148	3.0		Dr. Wierzbicki.
Eperies	29.02	737.2	29.93	760.1	40.3	4.6	78	N			4		10ns			0.079	2.00		Julius Mikolik.
Gratz	28.03	727.1	29.86	758.5	55.4	13.0	39	NNE			3		6			0.836	21.5		Andreas Rospini.
Hermannstadt	28.31	719.2	29.74	755.4	51.4	10.8	92	NNW			2		10			0.120	3.05	Rainy	Prof. A. Gottschling
Kremsmünster, Observatory	28.59	726.3	29.95	760.7	47.1	8.4	63	NE			2		10			0	0		The Staff.
Lemberg	28.94	735.0	29.94	760.5	44.6	7.0	52	NE			3		10			0.114	2.9		Dr. T. Stanecki.
Polm	29.65	753.2	29.77	756.1	48.7	9.3	70	ENE			4		10			0.134	3.4		I.R.Hydrographic Office.
Szathmar	29.20	743.9	29.76	755.8	46.8	8.2	78	E			3		10			0.346	8.8		Pet. Pancsics, S. J.
Szegedin	29.54	750.2	29.82	757.4	48.2	9.0	78	NW			3		10			0.063	1.60		Karl Stancel.
Trieste	29.60	754.1	29.79	756.7	53.1	11.7	43	ENE			6		10			0	0		P. Busin.
Vienna	29.22	742.1	29.96	761.0	52.9	11.6	36	NNE			4		3			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.96	761.0	30.06	763.5	58.5	14 7		NW	24	10.7			9			Blank	Blank	Overcast	W. Boswell.
Ardrossan	30.14	765.5	30.16	766.1	58	14.4		WNW			3		8					Overcast	G.Carrick.
Armagh, (Observatory)	30.03	762.7	30.26	768.6	62.2	16.8		WNW	6	2.7			10					Overcast	S. Call.
Bidston (Liverpool Obs)			30.19	766.8	56	13.3		W	24	10.7			10					Overcast	John Hartnup.
Bolton (Sharples)	29.62	752.3	30.13	765.3	55.5	13.1		NNW	7	3.1			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.72	754.9	30.12	765.0	58.1	14.5	74	SW			2		10			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	83	28.3		NE			2		3					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	30.09	764.3	30.18	766.6	57.0	13.9		SW			1		10					Raining	H. Todd.
Cardington			30.16	766.1	59.0	15.0		W			0-1		10					Overcast	John McLaren.
Chatham (School M. E.)	30.08	764.0	30.21	767.3	57.0	13.9		Calm			0		0					Misty	Sapper W. Gibson, R. E.
Donaghadee	30.18	766.6	30.22	767 6	58	14.4		NW			3		5					D. clouds	J. Mac Gowan.
Dover	30.19	766.8	30.23	767.8	54	12.2		ESE			2		2					¼ clouded	J. Costello.
Falmouth (Observatory)	30.07	763.8	30.30	769.6	57.4	14.1		SSE			1		6					Misty	The Staff.
Fort Napier, Natal	27.89	708.4	30.10	764 5	68.2	20.1		SE			1		2					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.71	754.6	29.94	760.5	89	31.7		W			1		8					Drizzling	
Galway (Queen's College)			30.29	769.4	67.6	19.7		WNW			1		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.76	755 9	29.81	757.2	72.8	22.7		SW			4		5					D. clouds	Pvt. O Baldwin.
Glasgow, (Observatory)	29.92	760.0	30.12	765.0	61.1	16.2		W			3		7					D. clouds	D. G. Maclean.
Great Yarmouth	30.17	766.3	30.17	766.3	51	10.6		S			3		5					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.03	762.7	30.20	767.1	57.3	14.1		W			1		10					Overcast	The Staff, for G.B.Airy.
Guernsey	30.04	763.0	30.26	768.6	54	12.2		NE			2		0					Blue sky	Dr. S.E.Hoskins, F.R.S.
Helston	30.41	772.4	30.53	775.4	57	13.9		NW			2	1c				0	0	Fine	M. P. Moyle.
Holyhead	30.20	767.1	30.23	767.8	50	15.6		WNW			3		10					Overcast	John Tilston.
Jersey	29.99	761.7	30.28	769.1	54.7	12.6		NNE			2		9					Gloomy	J. Fisher.
Kew (Observatory)	30.17	766.3	30.21	767.3	56 8	13.8		W	9	4.0								Misty	The Met'g'l Office.
Leicester (Museum)	29.87	758.7	30.13	765.3	51.0	10.6		SW			1		10					Drizzling	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.55	750.6	29.63	752.6	73	22.8		SW			3		8					Overcast	A. King.
Nairn	29.99	761.7	30.08	764.0	64	17.8		W			2		5					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.07	763.8	77.2	25.1		NE			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.99	761.7	30.18	766.6	55.0	12.8		NW			1		10n		NNW	0.036	0.91	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.66	753.4	30.19	766.8	55.8	13.2		W			2		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.99	761.7	30.25	768.3	55	12.8		W			1		10					Overcast	The Staff, for E. J. Stone, Esq
Plymouth	30.21	767.3	30.29	769.4	59.0	15.0		S			2		8					D. clouds	John Merrifield.
*Roche's Point	30.25	768.3	30.38	771.6	66	18.9		N			3		5					¾ clouded	Wm. Kennedy.
St. Ann's Head	30.11	764.8	30.28	769.1	54	12.2		NW			1		7					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			30.03	762.7	51.9	11.1		WNW	22	9.8			10					Misty	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey.	29.65	753.1	29.71	754 6	78.2	25.7		SSW			1		3					D. clouds	Serg't W. H. Lyne.
Sheffield	29.89	759.2	30.17	766.3	56.9	13.8		SW			1		10			0.05	1.3	Overcast	W. F. Cooper.
Silloth Rectory	30.11	764.8	30.14	765.5	58.8	14.9	77	SW			4		10			0	0	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.15	765.8	56.7	13.7		WSW	19	8.5			10					Squally	Rev. S. J. Perry.
Straifield Turgiss	30.04	763.0	30.25	768.3	53.8	14.9		NW			1		9					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	30.30	769.6	30.31	769.9	61	16.1		W			4		8					Gloomy	W. Newcombe.
Valencia Observatory)	30.33	770.4	30.36	771.1	60.4	15.8		NW	16	7.2			5					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.03	762.7	30.07	763.8	74.0	23.3	55	S	8.6	3.8		9	8			0	0	Threatening	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.62	752.3	48.0	8.9	80	NW			1		10k			0.07	1.8	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.23	767 8	63.8	17.7		SE			2	4ck		NW		0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.85	758.2	30.03	762.9	76.6	24.8	70	E	7.5	3.4		0	2		NE	0.03	0.8	Fine	C. Meldrum.
Melbourne (Observatory)	29.74	755.4	29.83	757.7	62.4	11.3	88	WNW	2	0.9			9			0.07	1.8	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.19	766.8	52	11.1		SW			4	3	3	NW		0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.89	759.2				NW			4	7	2	Calm		Blank	Blank		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather.	Observer
H. M. S. Alert,																			Capt.J.P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore																			Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma,																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			30.18	766.6	68	20.0		ENE			2		4					D. clouds	Capt. C. D. Coxwell
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra,																			Capt. W. P. Hughes.
S. S. Strathleven,																			Capt. C. W. Pearson
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	29.90	759.4	67.1	19.5	92	Calm			0	10s				0.24	6.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Copenhagen	30.11	764.8	30.16	766.0	46.4	8.0	56	SSW			2		10						
Fanöe	30.10	764.6	30.12	765.1	47.5	8.6	74	SW			6		9					Raining	
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.50	749.4	29.55	750.5	46.8	8.2	88	W			8		9						
Thorshavn (Faröe)	29.84	757.9	29.87	758.8	52.9	11.6	99	W			3		10					Raining	
Vestervig	29.98	761.6	30.08	764.0	42.2	6.2	82	SW			4		10					Raining	

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

FRENCH SERIES.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Alençon, Normal School	29.65	753.2	30.21	767.2	56.3	13.5	25	NE			4		2s			0	0	Slightly cl'dy	Collignon, Director.
Amiens, Normal School	30.13	765.4	30.25	768.3	62.6	17	94	NNE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.93	760.1	30.18	766.6	56.3	13.5	30	ENE			2		9s			0	0		Klein, Commandant.
Avignon, Normal School	29.60	751.8	29.68	753.8	60.1	15.6	47	N			6		5		S	0	0	Cloudy	Giraud, Director.
Bar-sur-Seine	29.54	750.3	30.10	764.5	54.9	12.7	17	ENE			4		0			0	0	Clear	C. Saillard, Director.
Beauvais, Normal School	29.92	760.6	30.19	766.7	56.7	13.7	23	E			2		0			0	0	Clear	Frère Eugene Marie.
Besançon, Normal School	29.11	739.5	30.00	762.1	55.2	12.9	34	NE			6		2		NE	0	0	Slightly cl'dy	A. Carré, Director.
Bordeaux	29.77	756.1	29.97	761.1	61.2	16.2	28	ENE			2		2		NW	0	0	Slightly cl'dy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.99	736.4	29.91	759.8	56.1	13.4	43	N			6	2c		N	N	0	0	Slightly cld'y	Marlot, Director.
Brest, Naval Observatory	29.51	749.6	30.07	763.7	54.0	12.2	60	NE			6	2c			NNE	0	0	Slightly cld'y	M. Gence, Director.
Caen, Normal School	30.01	762.3	30.26	768.5	57.2	14.0	57	NE			2		1		NE	0	0		Ch. de Kermaree, Dir
Carcassonne, N. School	30.19	764.6	30.17	766.4	55.0	12.8	59	E			2		2			0	0	Slightly cld'y	M. Bietrix, Director.
Châlons-sur-Marne, N. Sch	29.44	747.7	29.85	758.2	62.2	16.8	61	WNW			3		5	E	WNW	0.280	7.1	Cloudy	September, Director.
Chartres, Normal School	29.83	757.6	30.14	765.6	57.4	14.1	35	NE			1		1		N	0	0	Clear	Jadot, Director
Clermont-Fd, Puy de D. Ob	29.50	749.2	30.06	763.5	58.3	14.6	80	N			1		0			0	0	Clear	E. Lequint, Director.
Commercy, Normal School	28.55	726.2	29.94	760.4	56.5	13.6	28	NE			3		1		N	0	0		Alluard, Director.
Commune de Gréasque*	29.24	742.8	30.11	764.8	51.4	10.8	28	NE			4					0	0		Dr. Coullet, Director.
Grenoble, Normal School	28.58	725.9	29.72	754.9	54.1	12.3	93	SW			1		10		W	0.343	8.7	Raining	L. Kina, Director.
La Roche-sur-Yon, N. Sch	29.07	738.3	29.83	757.6	54.7	12.6	59	WNW			2		ckn			0	0		Ablard, Director.
Le Mans, Normal School	29.90	759.4	30.11	764.8	61.2	16.2	25	NE			6		0			0	0	Clear	Mouillot, Director.
Lons-Le-Saulnier, N. Schoo	29.86	758.4	30.17	766.2	57.4	14.1	26	E			4		0			0	0	Clear	Poirrier, Director.
Lorient, Naval Observatory	29.00	736.6	29.96	760.9	54.5	12.5	47	NNE			3		0					Clear	M. Cadoret, Director
Lyons Obs'y (Park Station	30.13	765.2	30.24	768.0	60.1	15.6	47	NE			6		2		NE	0	0	¾ covered	Lt. T. Carré, Director.
Mâcon, Normal School	29.24	742.8	29.86	758.5	56.3	13.5	42	N			7		0			0.098	2.5	Clear	Ch. André, Director.
Marseilles, Observatory																			Galzin, Director.
Mirecourt, Normal School	29.37	746.0	29.64	752.8	58.3	14.6	86	N			1		10		E	0.846	21.50	Raining	E. Stephan, Director.
Mont-Louis	29.00	736.6	30.05	763.3	49.5	9.7	40	NE			4		k		NE	0	0		Barbier, Director.
Nice	24.63	625.5	29.86	758.5	46.4	8.0	72	W	20.6	9.2			2			0.209	5.3		M. Cave, for Dr. Fines.
Nismes, Normal School	29.57	751.0	29.30	751.9	64.8	18.2	50	E			7		10	E	E	0	0	Covered	Capt. Boissière, Director
Perpignan	29.52	749.9	29.72	755.0	63.1	17.3	39	N			6		0			0	0	Clear	M. Boyer, Director.
Pic du Midi (Plantade) H. P	29.64	752.9	29.75	755.6	62.8	17.1	30	N	40.9	18.3			4	N	NW	0.083	2.1		Dr. Fines.
Pic du Midi (Summit) H. P	22.35	567.6			31.3	—0.4							10	S	N	0.346	8.8	Snowy	M. Baylac, for Gen'l de Nansouty
Privas, Normal School																			
Puy de Dome (Summit) Ob	28.75	730.2	29.80	757.0	57.2	14	47	N			4		5ks	N	N	0	0	Cloudy	M. Tallieu
Rochefort, Naval Obs'y	24.97	634.3			33.4	0.8	83	ENE			6		2			0	0		Alluard, Director.
Rouen, Normal School	30.05	763.2	30.08	764.0	63.0	17.2	18	NE			4		0			0	0	Clear	Lt. E. Devante, Director
Saint Malo (Port) Obs'y	30.10	764.6	30.19	766.8	59.9	15.5	48	NNE			2		0			0	0	Clear	Platrier, Director.
Saint Maur (near Paris)	30.21	767.2	30.22	767.9	62.2	16.8	70	NW			3		1	NW	NW	0	0	Clear	Lt. Hercouet, Director.
Tarbes, Normal School	30.00	761.9	30.16	766.1	59.0	15.0	18	NNE			3		0?	NNE?		0	0		E. Renou, Director.
Toulouse, Observatory	28.83	732.2	29.89	759.1	62.6	17	61	NW											T. Huguet, Director
Tours	29.21	742.0	29.93	760.2	59.5	15.3	45	NW			2		5			0.512	13.0	Cloudy	B. Bailland, Dir.
Versailles, Observatory	29.91	759.7	30.11	764.7	60.4	15.8	24	NE			4		0			0	0	Clear	M. de Tastes.
Villefranche-sur-Saone, N. S	29.67	753.7	30.17	766.2	58.6	14.8	16	E			4		0			0	0	Clear	Dr. A. Berigny, Director
Sub-Series.																			
Fort de France, Martinique	29.08	738.7	29.78	756.5	59.0	15	52	N			4		0			0	0	Clear	Nicot, Director.
Paris-Montsouris Obs'y																			
Zi-Ka-Wei (near Shanghai	30.16	766.0	30.19	766.7	81.0	27.2										0	0		L'Abbé Marchésí
	29.88	759.0			58.6	14.8	21	ENE			3	2c		NE		0	0		Marié Davy, Director.
	29.89	759.2	29.91	759.8	66.4	19.1	91	ESE	11.0	4.9			10k			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.24	742.7	30.11	764.7	49.1	9.5	33	NE			8		2k	NE		0	0		Prof. Dr. Hoh.
Berlin	30.02	762.4	30.19	766.8	50.7	10.4	32	E			3		8			0	0		Prof. Dr. Arndt.
Breslau	29.60	751.9	30.13	765.4	45.5	7.5	31	NE			2		5			0	0		Royal University Obs'y
Carlsruhe	29.66	753.4	30.10	764.4	52.2	11.2	47	NE			2		0			0	0		Albert Senz.
Cassel	29.55	750.5	30.16	766.0	51.4	10.8	16	ENE			3		2	N		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.93	760.2	30.30	769.5	52.7	11.5	8	NE			3		1			0	0		Physical Society.
Friedrichshafen	28.59	726.1	30.07	763.6	45.0	7.2	51	NE			5		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.12	765.0	30.19	766.8	51.4	10.8	47	SSW			2		3			0	0		Dr. Reinhold Kleeman.
Kiel	30.16	766.0	30.17	766.4	52.2	11.2	38	SSW			1		8			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.09	764.3	30.17	766.4	43.3	6.3	39	NW			4		2	NW		0.004	0.1		Prof. E. Luther.
Köslin			30.19	766.8	46.9	8.3		N			4		1			0	0		H. Müller.
Leipsic Observatory	29.77	756.1	30.20	767.0	49.3	9.6	24	NE			2		6	ENE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.98	761.6	30.21	767.4	52.3	11.3	43	NE			4		5ks	NE		0	0		Dr. Assmann.
Memel	30.09	764.3	30.14	765.5	39.0	3.9	55	NW			4		2ks						Reinbrecht & Issermann
Munich	28.20	716.3	30.07	763.6	40.1	4.5	78	N			4		10	N		0.406	10.3	Light rain	Dr. C. Lang.
Neufahrwasser	30.20	767.0	30.21	767.4	42.3	5.7	39	N			2		3			0	0		A. Lothes.
Neustadt (Palatinate)	29.58	751.2	30.10	764.6	54.0	12.2	24	NE			2					0	0		Realiehrer Dicknether.
Posen	29.87	758.6	30.16	766.1	46.0	7.8	32	SE			6		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.56	750.9	30.12	765.0	51.1	10.6	35	NE			7		1			0	0		Imp. University Observatory.
Stuttgart	29.12	739.6	30.02	762.5	51.4	10.8		NE					4	N		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.56	725.4	30.14	765.5	46.2	7.9	61	NNE	5.1	2.3			6k	W	E	0.110	2.8		Reallehrer J. Hopfner.
Wustrow	30.21	767.2	30.23	767.8	47.8	8.8	48	NNW			2		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.38	746.2	29.76	755.9	75.2	24.0		S			2.5							Misty	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.52	749.7	29.56	750.9	88.1	31.2	74	S					0			0	0	Misty	
Deesa	29.09	738.9	29.54	750.3	103.3	39.6	16	SSW	11.8	5.3			2	WSW		0	0	D. clouds	
Bombay	29.68	754.0	29.72	754.9	87.2	30.7	71	WSW	16	7.2			4	W		0	0	D. clouds	
Poona (Yarrowdia)	27.85	707.4	29.66	753.2	90.3	32.4	42	WSW	23	10.3			1			0	0	D. clouds	
Belgaum	27.21	691.1	29.73	755.0	78.1	25.6	72	W	11	4.9			8	S	NW	0	0	Misty	
Lahore	28.78	731.0	29.48	748.9	101.2	38.4	17	SE	1.9	0.8			3			0	0	D. clouds	
Roorkee	28.62	726.9	29.48	748.7	98.4	36.9	18	NW	2	0.9			2			0	0	Sultry	
Agra	29.00	736.6	29.54	750.2	102.6	39.2	21	SW	4.4	2.0			0			0	0		
Nagpur	28.52	724.4	29.51	749.5	103.7	39.8	21	NW	4.4	2.0			6	SW		0	0	D. clouds	
Jubbulpore	28.22	716.8	29.52	749.9	99.7	37.6	17	N	4.6	2.1			8			0	0	D. clouds	
Lucknow	29.16	740.6	29.52	749.8	93.7	34.3	28	NW	1.4	0.6			10			0	0	Overcast	
Allahabad	29.20	741.7	29.50	749.3	100.7	38.2	26	NW	1.5	0.7			3		NW	0	0	D. clouds	
Patna	29.36	745.6	29.53	750.0	95.6	35.3	35	E	1.5	0.7			4	E	E	0	0	D. clouds	
Hazaribagh	27.57	700.2	29.51	749.5	93.0	33.9	23	N	7.6	3.4			0			0	0	Blue sky	
Cuttack	29.54	750.2	29.62	752.2	90.1	32.3	58	SSE	4.2	1.9			2			0	0	D. clouds	
Calcutta (Alipore)	29.63	752.6	29.65	753.1	83.0	28.3	59	NNW	13.0	5.8			9	NW	NW	0	0	D. clouds	
Goalpara	29.20	741.8	29.61	752.0	84.4	29.1	72	Calm	4.6	2.1			0			0.10	2.5	Blue sky	
Chittagong	29.52	749.9	29.61	752.1	85.9	29.9	79	WSW	4.0	1.8			0			0	0		
Sibsagar	29.27	743.3	29.60	751.7	86.3	30.2	72	NW	1.8	0.8			2			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.41	746.9	29.81	757.2	59.4	15.2	38	E	1.8	0.8			8			0.028	0.7		Prof. Giovanni Clodig.
Milan	29.31	744.4	29.83	757.6	55.2	12.9	66	NNE	4.3	1.9			9	SE		0.067	1.7		Prof. Schiaparelli.
Padua	29.74	755.3	29.84	758.0	54.3	12.4	50	E	24.8	11.1			9	NE		0.898	22.8		Prof. Dott. Lorenzoni.
Moncalieri	28.93	734.7	29.82	757.5	51.8	11.0	75	NNW	2.5	1.1			9	N		0.087	2.2		Prof. P. F. Denza.
Genoa	29.52	749.9	29.71	754.7	62.2	16.8	35	E	3.8	1.7			6	SW		0.118	3.0		Prof. G. M. Garibaldi.
Mondovi	27.91	708.9	29.80	757.0	47.5	8.6	78	NW			4		10			1.032	26.2		Prof. D. C. Bruno.
Pesaro	29.72	754.9	29.77	756.1	50.7	10.4	77	NE	21.7	9.7			10	NE		0.366	9.3		Prof. Luigi Guidi.
Florence	29.47	748.5	29.72	755.0	51.8	11.0	87	N			6		10	N		1.098	27.9		Cav. F. Meucci.
Leghorn	29.55	750.6	29.64	752.8	49.8	9.9	81	ENE	19.9	8.9			10			0.512	13.0		Prof. P. Monte.
Rome	29.46	748.2	29.63	752.6	72.5	22.5	71	S	18.1	8.1			10			0.177	4.5		Prof. P. S. Ferrari
Lecce	29.46	748.2	29.71	754.5	75.2	24.0	51	SSE	6.9	3.1			6	W		0	0		Prof. C. De Giorgi.
Cosenza	28.83	732.3	29.71	754.6	78.4	25.8	73	SW	3.1	1.4			9			0.126	3.2		Prof. D. Conti.
Cagliari	29.44	747.7	29.63	752.5	68.4	20.2	55	NNW			2		9	W		0	0		Prof. A. Pacinotti.
Palermo	29.39	746.5	29.64	752.8	71.4	21.9	51	N	4.9	2.2			3			0	0		Prof. G. Ciacciatore.
Syracuse	29.59	751.5	29.63	752.6	72.0	22.2	68	S	8.7	3.9			10	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.15	740.5	29.66	753.4	66.7	19.3	72	SW	1.3	0.6			10	W		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.9	19.9	54	E	4.1	1.8		ck	2ks			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.83	757.7	30.02	762.5	69.7	20.9	66	ESE	3.8	1.7		ck	2s			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.14	765.5	30.21	767.3	60.8	16.0	94	ESE	3.3	1.5		0	10ks;s			0	0	Foggy	The Staff.
Wakayama	30.08	764.0	30.12	765.3	59.5	15.3	91	S	1.6	0.7			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.1	29.98	761.5	55.8	13.2	62	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.62	599.8			62.1	16.7	65	ESE	Inap.	Inap.		4s	0	SW		0	0	Fair	Vicente Fernandez.
Leon	24.35	618.6	29.93	760.1	66.6	19.2	78	NW			2	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.66	753.3	29.92	759.9	70.8	21.6	95	E			1	2cs	0	SW		0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.02	584.6	29.93	760.2	58.1	14.5	63	Calm	0	0		0	0			0	0		The Staff
Morelia	24.01†	609.8†			69.4	20.8	41	NE			3	3c	6k	S	SW	0.15	3.8	Cloudy	M. Fena, M. D.
Pabellon	23.89	606.7	29.78	756.1	64.4	18.0	62	SW			1	0	0			0	0	Light haze	M. V. de Leon, M. E.
Puebla (Aguascalientes)	23.39	594.2	30.17	766.3	52.0	11.1	73	Calm	0	0		1ck	0	NW		0	0	Clear	Prof. P. Spina.
Puebla (Catholic Institute)	24.11	612.5	29.98	761.6	63.3	17.4	61	E			1	1	0	W		0	0	Clear	G. Barroeta, M. D.
San Luis Potosi	29.84	757.9	29.85	758.2	80.4	26.9	91	W			1	3	4	NE	W	0.60	15.2	Cloudy	Prof. M. M. Chàzaro
Thecuaipam																			Prof. J. Rossell
Yera-Cruz	22.52	572.0	30.03	762.7	62.4	16.9	57	W			1	0	0			0	0	Very clear	J. C. Castrillon.
Zacatecas																			

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.5 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.24	768.0	30.24	768.0	57.2	14.0		WSW			2					0	0		
Groningen	30.13	765.3	30.19	766.7	52.7	11.5		S								0	0		
Helder	30.17	766.4	30.17	766.4	50.4	10.2		SW			2					0.012	0.3		
Hellevoetsluis	30.21	767.2	30.21	767.2	56.8	13.8	48	WNW			2					0	0		
Utrecht	30.15	765.9	30.20	767.1	57.9	14.4	45	SSE			2		5			0	0	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.83	757.7	29.89	759.1	42.4	5.8	88	W	12.8	5.7			10			0.142	3.6	Raining	
Brōno	29.80	756.9	29.84	757.9	43.2	6.2	74	W	9	4			8			0	0		
Christiania	29.74	755.4	29.89	759.2	47.3	8.5	64	SW	18	8			10					Light rain	
Tromsō	29.86	758.4	29.91	759.8	36.7	2.6	55	NE	9	4			3			0	0		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.06	763.4	30.26	768.7	64.4	18.0	76	NW			3		5			0	0		Dr. J. A. Sampaio.
Campo Major	28.83	732.3	29.81	757.1	68.4	20.2	55	ESE	3.1	1.4			8			0.079	2.0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.83	757.7	29.92	759.9	65.1	18.4	69	SW	4.9	2.2			6			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.50	749.4	29.85	758.3	64.6	18.1	69	ENE	8.1	3.6			4			0.094	2.4		The Staff.
Ponta Delgada (Azores)	30.11	764.9	30.19	766.7	64.0	17.8	63	NE	11.2	5.0			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Mossamedes, Benguela			29.94	760.4	73.0	22.8		NNW			2		0			1	NNW		Blue sky	C. J. de Senna Barcellos. Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Com'd't.
Sado. J. A. de Brito Capello Mosamedes, Benguela			29.93	760.2	72.7	22.6		NW			3		0			2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo. J. M. T. Guimaraes, Macao, China			29.84	758.0	82.4	28.0		N			2		10		N	1			Rain storm	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.74	755.3	29.76	755.8	35.2	1.8	82	WNW	9	4			10					Light snow	Capt. Sseliwerstow.
Astrakhan	30.10	764.4	30.01	762.3	79.0	26.1	43	ESE	9	4			4ks			Blank	Blank		Capt. Wisganow.
Barnaul	29.50	749.2	29.97	761.2	76.5	24.7	32	Calm	0	0			10						Meteorological Obs.
Dorpat	29.79	756.7	30.04	763.1	40.3	4.6	70	NNE	7	3			10n					Sleeting	Prof. Dr. Weihrauch.
Ekaterinburg	28.89	733.9	29.84	757.8	59.2	15.1	83	WNW	4	2			10					Light rain	Meteorological Obs.
Irkutsk																			
Kasan	29.69	754.0	29.95	760.7	64.4	18.0	30	WSW	2	1			6k						Physical Cabinet.
Kertch	29.88	758.9	29.90	759.4	61.7	16.5	88	ESE	2	1			0						Lagorio.
Kieff	29.30	744.2	29.97	761.1	34.7	1.5	100	NNE	11	5			10n						Physical Cabinet.
Krotkowo*	29.63	752.7	30.09	764.2	70.3	21.3	40	W	7	3			1						Cand. Fatjanow.
Lugan	29.61	752.0	29.80	757.0	76.1	24.5	41	SSW	18	8			5					Light clouds	Meteorological Obs.
Moscow	29.43	747.5	29.98	761.6	47.7	8.7	58	NW	10.1	4.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.72	754.9	29.79	756.7	66.9	19.4	69	S	31	14			10cs						Kurdakof.
Nikolaievsk, on the Amoor	30.11	764.7	30.19	766.9	38.7	3.7	90	E	7	3			8s						
Nukuss																			
Orenburg																			
Pekin (China)	29.74	755.5	29.89	759.1	63.9	17.7	10	NW	9	4			3k						Physical Observatory.
St. Petersburg	29.98	761.4	29.99	761.8	38.7	3.7	51	WSW	11	5			7ks;n						Central Physical Obs.
Tashkend	28.42	721.9	29.89	759.3	84.0	28.9	49	Calm	0	0			0						Teich, A. M.
Tiflis	28.56	725.5	29.94	760.5	70.0	21.1	59	W	4	2			3cs						Physical Observatory.
Vladivostock																			
Warsaw	29.65	753.2	30.08	764.1	46.0	7.8	35	NNE	9	4			4k						Astronomical Obs.
Wilna	29.66	753.4	30.09	764.2	45.9	7.7	41	WNW	4	2			8					Heavy clouds	Astronomical Obs.
Yeniseisk	29.93	760.2	30.21	767.3	71.2	21.8	34	W	7	3			7					Light clouds	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.69	754.1	29.80	756.8	60.4	15.8	71	SSE	4.2	1.89			9			0.074	1.87	Squally	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.01	762.2	30.07	763.6	64.4	18.0	57	NW	3.5	1.56		2	5	NE		0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	26.99	685.6			51.6	10.9	62	NE	34.3	15.38			1			0.639	1.0	Light clouds	Domingo Martin y Perez.
Madrid, Royal Observatory	27.60	701.0	29.80	756.8	60.8	16.0	72	W	8.3	3.67		0	10			0.063	1.6	Covered	The Staff.
Murcia, Met. Obs'y	29.58	751.4	29.73	755.1	77.0	25.0	55	SW	3.1	1.39		4	4	SE		0.051	1.30	Raining	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.01	736.9	29.89	759.2	63.0	17.2	55	NNE	23.0	10.3			5			0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.1	29.99	761.8	76.7	24.8	80	E	7.2	3.2		4ck;cs	1k	W	ESE	Inap.	Inap.	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.81	757.1	29.86	758.4	85.1	29.5	82	NE	0	0			1c			0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.78	756.4	29.88	758.9	66.4	19.1	78	SW	3.3	1.5		0	9		SW	0.227	5.8		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	79.9	26.6	86	SE	0	0		5sk	4k	SE	SE	0.059	1.50	Cloudy	Enriquetladea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.93	760.1	29.97	761.1	36.7	2.6		S			2		0			0	0		
Umea	29.92	760.0	29.97	761.3	40.6	4.8	59	S			2		10			0	0		
Hernosand	29.85	758.1	29.90	759.4	48.9	9.4	44	SSE			2		3			0	0		
Stockholm	29.86	758.5	30.04	763.0	46.0	7.8	33	SW			6		7			0	0		
Wisby	30.00	762.0	30.06	763.5	42.4	5.8	50	W			4		0			0	0		
Sub-Series.																			
Upsala	29.85	758.1	29.93	760.3	48.6	9.2	38	SSW	11.2	5.0			5		WSW	0.049	1.25	Raining	Nils Ekholm.

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

SWEDISH NAVAL SERIES.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	0–10.	0–10.	From—	From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall. Millim.	Weather.	Observer.
Barque Australia, N. 48° 25′, W. 8° 14′			30.31	769.9	53.2	11.8	78	NE			2		3						Misty	J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	0–10.	0–10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Geneva	28.41	721.6	29.85	758.3	47.8	8.8	51	NNE			9		2			0	0	Clear.	The Observatory.
Zurich	28.39	721.1	30.06	763.4	46.2	7.9	60	E			5		7			0	0	Cloudy	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —3 6 mm.; Thermometer, —8.2 Cent Relative Humidity, —6 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1.339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	0–10.	0–10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Constantinople			29.77	756.1	80.2	26.8	53	SSW	11	5.0			1		SW	0.102	2.6		The Observatory.
Fao, Persian Gulf																			
Valona			29.78	756.3	76.6	24.8		S			2		10			0	0	Covered	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			30.01	762.2	71.8	22.1	66	N			1					0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	0–10.	0–10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.					47.0	8.3		SW	2	0.9		3ck	0			0	0	Fair	Hon. J. Ferguson.
Chatham, N. B.	30.15	765.8	30.21	767.3	44.9	7.2	60	W	3	1.3		3c	0	W		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.24	768.1	30.28	769.1	42.0	5.6	66	S	8	3.6		0	0			0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.64	752.8	29.83	757.7	56.8	13.8	85	SW			1		10s			0.096	0.24	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.01	762.2	30.18	766.6	40.0	4.4		E			1	0	0			0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.07	763.8	30.09	764.3	46.5	8.1	73	NE	25	11.2		5c	0			0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.18	766.6	30.24	768.1	51.3	10.7	63	S	2	0.9		0	0			0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	28.86	733.0	29.69	754.1	46.0	7.8	88	NW	12	5.4		5k	5ks	W		0.830	21.08	Cloudy	James Stewart.
Granton, Ontario	28.78	731.0	29.83	757.7	71.0	21.7	71	S			1	0	0			0	0	Clear.	James Grant.
Halifax, N. S.	30.20	767.0	30.33	770.4	45.0	7.2	61	SE	6	2.7		0	0			0	0	Clear.	A. Allison.
Hamilton, Ontario	29.49	749.0	29.87	758.7	58.7	14.8	86	S			1	0	0			0	0	Hazy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.55	750.6	29.87	758.7	59.1	15.1	83	S	6	2.7		8k	0	W		0.15	3.8	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	30.26	768.6	30.30	769.6	38.8	3.8	68	Calm	0	0		0	0			0	0	Clear.	C. H. Rigby.
Montreal, Quebec	29.74	755.4	29.93	760.2	56.1	13.4	87	S	12	5.4			10s			0	0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.33	745.0	29.37	746.0	55.0	12.8	96	SW			1		10n			0.33	8.4	Cloudy	J. R. Nason.
Norwood, Ontario	29.16	740.7	29.84	757.9	60.2	15.7	88	S	5	2.2			8s			0	0	Hazy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.09	738.9	29.76	755.9	63.0	17.2	78	S	5	2.2		2ck	4ks	W		0.05	1.3	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.25	742.9	29.98	761.5	61.7	16.5	83	Calm			0	0	0			0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.21	741.9	29.89	759.2	59.1	15.1	94	S	5	2.2		0	0			0.02	0.5	Clear	H. Morgan.
Port Stanley, Ontario	29.26	743.2	29.89	759.2	62.8	17.1	81	SW	6	2.7		Haze	0			0	0	Hazy	M. Payne.
Quebec, Quebec	29.72	754.9	30.04	763.0	53.0	11.7	54	E			5	0	2s			0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.36	745.7	29.81	757.2	51.5	10.8	89	E	8	3.6			10s			0.20	5.1	Cloudy	W. H. McIntyre.
St. John, N. B.	30.10	764.5	30.27	768.8	46.0	7.8	80	S	8	3.6		5c	0			0	0	Fair	G. Murdock, C. E.
Saugeen, Ontario	29.06	738.1	29.74	755.4	72.2	22.3	70	SW	11	4.9		7k	0			0.26	6.6	Fair	K. Stewart.
Stratford, Ontario	28.58	725.9	29.81	757.2	68.6	20.3	67	S	12	5.4		2cs	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.27	768.8	30.31	769.9	47.4	8.6	85	W	1	0.4		0	0			0	0	Clear.	T. C. Hill, C. E.
Toronto, Ontario	29.50	749.3	29.88	758.9	53.1	11.7	87	E	2	0.9		Haze	0			0	0	Fair	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.80	731.5	29.81	757.2	73.6	23.1	66	S	18	8.0		1ck	0			0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	30.20	767.1	30.27	768.8	48.6	9.2	57	SE	8	3.6		3cs	0	NW		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.98	761.5	30.24	768.1	39	3.9	73	W				5k	5s			Blank	Blank	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.20	767.1	38.5	3.6		NW			8					0	0		The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.02	762.5	30.10	764.5	63	17.2	72	S	8	3.6		2k	5s	NW	Calm	0.09	2.3	Fair	
Alpena, Michigan	29.09	738.9	29.70	754.4	70	21.1	66	W	15	6.7		0	5s		W	0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.94	735.1	30.04	763.0	75	23.9	56	SW	4	1.8		0	Haze			0	0	Clear	
Atlantic City, New Jersey	30.06	763.5	30.08	764.0	57	13.9	100	NE	15	6.7			10s:fg		Calm	0	0	Cloudy	
Augusta, Georgia	29.97	761.2	30.17	766.3	68	20.0	74	SE	3	1.3		Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	30.05	763.3	30.10	764.5	60	15.6	82	NE	6	2.7			10s		Calm	0	0	Cloudy	
Barnegat, New Jersey	30.06	763.5	30.08	764.0	56	13.3	94	E	14	6.3			10s		Calm	0	0	Cloudy	
Bismarck, Dakota	28.09	713.5	29.95	760.7	49	9.4	77	W	16	7.2		0	0			0.09	2.3	Clear	
Boerne, Texas	28.45	722.6	29.72	754.9	70	21.1	90	SE	6	2.7		5k	0	SE		0	0	Fair	
Boise City, Idaho	27.29	693.2	30.25	768.3	54	12.2	74	Calm	0	0			10s		N	0	0	Cloudy	
Boston, Massachusetts	30.04	763.0	30.20	767.1	48	8.9	85	SE	7	3.1			10n		Calm	0.24	6.1	Light rain	
Brackettville, Texas	28.72	729.5	29.73	755.1	71	21.7	95	E	9	4.0			10ks		E	0.10	2.5	Cloudy	
Breckenridge, Minnesota	28.82	732.0	29.78	756.4	55	12.8	74	W	16	7.2		2k	0	W		0	0	Fair	
Brownsville, Texas	29.84	757.9	29.88	758.9	78	25.6	78	E	1	0.4		0	5s		E	0.01	0.3	Fair	
Buffalo, New York	29.20	741.7	29.88	758.9	65	18.3	68	SW	6	2.7		0	Sm'e		Calm	Inap.	Inap.	Smoky	
Burkes, Arizona					55	12.8	33	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.70	754.4	29.99	761.7	58	14.4	76	S	23	10.3		2ck	8s	W	SW	0.02	0.5	Cloudy	
Cairo, Illinois	29.64	752.8	30.01	762.2	75	23.9	63	S	5	2.2		0	Haze			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	39	3.9	91	SW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.10	764.5	30.11	764.8	71	21.7	100	W	12	5.4		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.02	762.5	30.04	763.0	73	22.8	63	SW	15	6.7		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.11	764.8	30.13	765.3	70	21.1	90	W	10	4.5		Haze	0	Calm		0	0	Clear	
Cape May, New Jersey	30.01	762.2	30.04	763.0	61	16.1	83	NE	9	4.0			10s		E	0	0	Cloudy	
Castroville, Texas	29.10	739.1	29.78	756.4	75	23.9	81	SE	4	1.8			10n		S	0.06	1.5	Light rain	
Cedar Keys, Florida	30.09	764.3	30.12	765.0	73	22.8	76	E	7	3.1		5cs	0	Calm		0	0	Fair	
Charleston, South Carolina	30.09	764.3	30.14	765.5	73	22.8	76	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.25	742.9	30.04	763.0	71	21.7	62	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.30	744.2	30.09	764.3	67	19.4	74	W	1	0.4		0	Sm'e		Calm	0	0	Clear	
Cheyenne, Wyoming	24.12	612.6	30.06	763.5	50	10.0	32	NW	4	1.8			10ks		Calm	0	0	Cloudy	
Chicago, Illinois	29.23	742.4	29.89	759.2	68	20.0	74	NW	3	1.3			10n		Calm	0.07	1.8	Thunder-storm	
Chincoteague, Virginia	30.02	762.5	30.04	763.0	67	19.4	93	SW	13	5.8		Haze	Haze	Calm	Calm	0	0	Hazy	
Cincinnati, Ohio	29.38	746.2	30.01	762.2	69	20.6	70	S	3	1.3		0	0			0	0	Clear	
Cleveland, Ohio	29.22	742.2	29.90	759.4	73.5	23.1	59	S	12	5.4		0	0			0	0	Clear	
Coleman City, Texas	28.14	714.7	29.73	755.1	72	22.2	85	SE	7	3.1			10s		S	0	0	Cloudy	
Columbus, Ohio	29.16	740.7	29.96	761.0	67	19.4	69	S	4	1.8		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	27.99	710.9	29.58	751.3	73	22.8	72	E	8	3.6		5k	0	SE		0	0	Fair	
Corsicana, Texas	29.52	749.8	29.97	761.2	71	21.7	90	Calm	0	0			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.28	743.7	29.90	759.4	66	18.9	64	NW	6	2.7			10s		W	0	0	Cloudy	
Dayton, Washington T'y					47	8.3	85	SW			1	2c	0	W		Inap.	Inap.	Fair	
Deadwood, Dakota	25.42	645.7			43	6.1	67	Calm	0	0		0	0			0.02	0.5	Clear	
Decatur, Texas	28.74	730.0	29.87	758.7	67	19.4	79	N	12	5.4			10s		Calm	0.24	6.1	Cloudy	
Delaware Breakwater, Del.	30.04	763.0	30.06	763.5	61	16.1	94	NE	10	4.5			Fog			0	0	Foggy	
Denison, Texas	29.13	739.9	29.90	759.4	65	18.3	89	SE	4	1.8			10ks		SE	0.56	14.2	Cloudy	
Denver, Colorado	24.85	631.2	30.07	763.8	52	11.1	47	N	9	4.0		5ck	2s	W	W	0	0	Fair	
Des Moines, Iowa	29.07	738.4	29.92	760.0	62	16.7	72	Calm	0	0		10cs	0	Calm		0	0	Cloudy	
Detroit, Michigan	29.18	741.1	29.82	757.4	68	20.0	51	SW	9	4.0		5k	0	SW		0	0	Fair	
Dodge City, Kansas	27.36	694.9	29.59	751.6	58	14.4	70	Calm	0	0		0	0			0.63	16.0	Clear	
Dubuque, Iowa	29.24	742.7	29.91	759.7	63	17.2	62	W	2	0.9			10s		Calm	Inap.	Inap.	Cloudy	
Duluth, Minnesota	29.04	737.6	29.69	754.1	58	14.4	76	SW	10	4.5		1cs	0	Calm		0.02	0.5	Clear	
Eagle Pass, Texas	29.07	738.4	29.76	755.9	75	23.9	86	S	12	5.4			10s		Calm	0.02	0.5	Cloudy	
Eastport, Maine	30.19	766.8	30.25	768.3	48	8.9	63	S	8	3.6		1c	Haze	Calm	Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.21	741.9	29.89	759.2	73	22.8	59	SW	8	3.6		0	Haze		Calm	0	0	Clear	
Escanaba, Michigan	29.12	739.6	29.75	755.6	63	17.2	62	W	9	4.0		5c	0	W		Inap.	Inap.	Fair	
Florence, Arizona	28.35	720.1	29.95	760.7	60	15.6	44	SW	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.01	635.2	30.45	773.4	42	5.6	50	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.89	708.4	29.72	754.9	45	7.2	92	NW	5	2.2		5cs	0	NW		0.01	0.3	Fair	
Fort Custer, Montana	26.90	683.2			48	8.9	63	SW	6	2.7		0	0			0	0	Clear	
Fort Davis, Texas	25.12	638.0	30.08	764.0	60	15.6	71	W	5	2.2		0	0			0	0	Clear	
Fort Elliot, Texas	26.89	683.0	29.05	737.9	60	15.6	82	Calm	0	0		0	0			0.94	23.9	Clear	
Fort Gibson, Indian Ter.	29.33	745.0	29.85	758.2	66	18.9	84	NE	3	1.3			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.18	639.6	29.98	761.5	60	15.6	15	W	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.68	728.5	29.91	759.7	67	19.4	89	Calm	0	0			10s		Calm	1.04	26.4	Cloudy	
Fort Keogh, Montana	27.29	693.2			48	8.9	71	SW	1	0.4		5cs	0	Calm		0	0	Fair	
Fort McKavett, Texas	27.67	702.8	29.50	749.3	70	21.1	80	E	2	0.9			10ks		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.73	729.7	29.81	757.2	62	16.7	94	N	4	1.8		10ck	0	Calm		0	0	Cloudy	
Fort Stevenson, Dakota	28.03	711.9			47	8.3	85	W	10	4.5		0	0			0	0	Clear	
Fort Verde, Arizona					50	10.0	45	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.90	759.4	29.94	760.5	77	25.0	82	SE	14	6.3		0	5ks		SE	Inap.	Inap.	Fair	
Grand Haven, Michigan	29.19	741.4	29.81	757.2	64	17.8	68	W	6	2.7		5k	0	SW		0.01	0.3	Fair	
Helena, Montana					48	8.9	49	N	2	0.9		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.18	741.1	29.92	760.0	72	22.2	67	S	4	1.8		0	0			0	0	Clear	
Indianola, Texas	29.89	759.2	29.92	760.0	77	25.0	86	SE	10	4.5		5c;k	0	Calm		0.04	1.0	Fair	
Jacksboro, Texas	28.80	731.5	29.90	759.4	67	19.4	89	E	8	3.6			10s		N	0.25	6.3	Cloudy	
Jacksonville, Florida	30.11	764.8	30.14	765.5	72	22.2	71	Calm	0	0		2cs	0	Calm		0	0	Fair	
Keokuk, Iowa	29.30	744.2	29.88	758.9	67	19.4	74	S	2	0.9			10s		SW	0.04	1.0	Cloudy	
Key West, Florida	29.99	761.7	30.02	762.5	77	25.0	86	E	14	6.3		2k	2ks	E	E	0.15	3.8	Fair	
Kittyhawk, North Carolina	30.07	763.8	30.09	764.3	71	21.7	58	W	21	9.4		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.11	739.4	30.08	764.0	68	20.0	74	Calm	0	0			Haze			0	0	Dense haze	
La Crosse, Wisconsin	29.15	740.4	29.86	758.4	61	16.1	66	W	1	0.4		0	5s		Calm	0	0	Fair	
La Mesilla, New Mexico	26.01	660.6	30.10	766.1	53	11.7	31	NW	1	0.4		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.06	738.1	29.88	758.9	64	17.8	83	SE	8	3.6			10n		SE	0.30	7.6	Light rain	
Lewiston, Idaho																			
Little Rock, Arkansas	29.66	753.4	29.97	761.2	69	20.6	80	S	2	0.9		2cs	0	S		0	0	Fair	
Los Angeles, California	29.54	750.3	29.88	758.9	50	10.0	86	N	2	0.9		0	0			0	0	Clear	
Louisville, Kentucky	29.44	747.8	29.97	761.2	73	22.8	59	S	4	1.8		5ck	0	Calm		0	0	Fair	
Lynchburg, Virginia	29.38	746.2	30.04	762.7	73	22.8	50	SW	2	0.9		0	Haze			0	0	Dense haze	
Madison, Wisconsin	28.90	734.0	29.84	757.9	63	17.2	72	W	4	1.8		8cs	0	W		Inap.	Inap.	Fair	
Marquette, Michigan	29.05	737.9	29.72	754.9	60	15.6	65	W	16	7.2		2c	0	SW		0.27	6.9	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.26	717.8	29.93	760.2	74	23.3	81	SE	6	2.7			10s		SE	Inap.	Inap.	Cloudy	
Memphis, Tennessee	29.66	753.4	29.98	761.5	74	23.3	63	S	6	2.7		Haze	2s		S	0	0	Clear	
Milwaukee, Wisconsin	29.14	740.1	29.83	757.7	66	18.9	45	NW	16	7.2		Sc;ck	2ks	W	Calm	0	0	Cloudy	
Mobile, Alabama	30.04	763.0	30.08	764.0	70	21.1	83	S	4	1.8		0	0			0	0	Clear	
Montgomery, Alabama	29.89	759.2	30.12	765.0	72	22.2	75	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Morgantown, West Virginia	29.04	737.6	29.99	761.7	69	20.6	65	Calm	0	0		1k	Haze	W		0	0	Clear	
Mt Washington, N H	23.89	606.8	30.25	768.3	36	2.2	90	SW	35	15.6			10n		SW	0.11	2.8	Light rain	
Nashville, Tennessee	29.52	749.8	30.04	763.0	71	21.7	71	W	2	0.9		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.04	763.0	30.16	766.1	57	13.9	75	E	7	3.1		0	Haze		Calm	Inap.	Inap.	Dense haze	
New London, Connecticut	30.12	765.0	30.17	766.3	53	11.7	86	E	8	3.6			10n		Calm	Inap.	Inap.	Light rain	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	75	23.9	72	E	8	3.6		0	0			0	0	Clear	
Newport, Rhode Island	30.10	764.5	30.15	765.8	53	11.7	80	E	6	2.7			10s		Calm	0	0	Cloudy	
New River, North Carolina					71	21.7	75	W			1	0	0					Clear	
New York, New York	29.96	761.0	30.14	765.5	55	12.8	86	E	13	5.8			10s		Calm	Inap.	Inap.	Cloudy	
Norfolk, Virginia	30.01	762.2	30.07	763.8	78	25.6	54	SW	9	4.0		0	Sme;hz		W;Calm	0	0	Clear	
North Platte, Nebraska	27.11	688.6	29.62	752.3	58	14.4	61	W	8	3.6		2k	8s	W	W	0	0	Cloudy	
Olympia, Washington Ter	30.11	764.8	30.15	765.8	53.0	11.7	86	E	2	0.9			10s		Calm	Inap.	Inap.	Cloudy	
Omaha, Nebraska	28.86	731.5	29.87	758.7	61	16.1	61	Calm	0	0			10s		Calm	0	0	Cloudy	
Oswego, New York	29.62	752.3	29.93	760.2	64	17.8	78	SE	11	4.9		5ck	Haze	W		0.04	1.0	Fair	
Pembina, Dakota	28.84	732.5	29.66	753.4	46	7.8	84	NW	8	3.6		0	0			0.34	8.6	Clear	
Pensacola, Florida	30.06	763.5	30.09	764.3	73	22.8	76	NE	6	2.7		1ck	0	SE		0	0	Clear	
Philadelphia, Pennsylvania	30.05	763.3	30.10	764.5	56	13.3	94	E	12	5.4			10s		Calm	0	0	Cloudy	
Phœnix, Arizona	28.73	729.7	30.47	773.9	70	21.1	36	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.79	451.8	30.00	762.0	23	— 5.0	47	S	2	0.9		5cs	0	Calm		0	0	Fair	
Pilot Point, Texas																			
Pioche, Nevada	24.10	612.1	29.87	758.7	50	10.0	26	NW	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.20	741.7	29.99	761.7	64	17.8	89	Calm	0	0			Fog			0	0	Dense fog	
Port Huron, Michigan	29.16	740.7	29.78	756.4	69	20.6	65	S	12	5.4		0	Haze			0	0	Clear	
Portland, Maine	30.16	766.1	30.21	767.3	54	12.2	67	S	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Portland, Oregon	30.10	764.5	30.17	766.3	54	12.2	93	SW	2	0.9			10s		S	0.03	0.8	Cloudy	
Portsmouth, North Carolina					70	21.1	80	SW	14	6.3		0	0			0	0	Clear	
Prescott, Arizona	24.74	628.4	30.10	764.5	42	5.6	42	S	2	0.9		5cs	0	W		0	0	Fair	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	72	22.2	76	E	9	4.0		8c	0	Calm		0	0	Fair	
Red Bluff, California	29.72	754.9	30.08	764.0	60.0	15.6	71	NW	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.68	753.9	29.89	759.2	76	24.4	86	SE	6	2.7		0	8s		SE	0	0	Fair	
Rochester, New York	29.29	744.0	29.87	758.7	70	21.1	61	SW	8	3.6		1ck	Haze	W	Calm	0.03	0.8	Clear	
Roseburg, Oregon	29.60	751.8	30.18	766.6	54.5	12.5	84	Calm	0	0		5k	5s	SW	Calm	Inap.	Inap.	Cloudy	
Sacramento, California	29.99	761.7	30.07	763.8	55	12.8	81	S	3	1.3		0	0			0	0	Clear	
St. Louis, Missouri	29.37	746.0	29.99	760.0	72	22.2	67	W	10	4.5		2k	0	W		0	0	Fair	
St. Paul, Minnesota	29.01	736.8	29.82	757.4	56	13.3	75	SW	8	3.6		5c	0	W		0	0	Fair	
Salt Lake City, Utah	25.72	653.3	30.05	763.3	52	11.1	41	Calm	0	0		5k	0	W		0	0	Fair	
San Antonio, Texas	29.22	742.2	29.89	759.2	74	23.3	86	SE	1	0.4			8ks		SE	Inap.	Inap.	Cloudy	
San Diego, California	29.86	758.4	29.93	760.2	51	10.6	93	N	1	0.4		0	0			0	0	Clear	
Sandusky, Ohio	29.25	742.9	29.88	758.9	72	22.2	62	SW	15	6.7		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.08	764.0	30.12	765.0	54	12.2	93	E	22	9.8			10s		E	0	0	Cloudy	
San Francisco, California	30.06	763.5	30.13	765.3	54	12.2	87	SW	1	0.4		1c	0	W		0	0	Clear	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	51	10.6	34	NE	6	2.7		1cs	0	Calm		0	0	Clear	
Savannah, Georgia	30.08	764.0	30.17	766.3	76	24.4	69	SW	3	1.3		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.76	755.9	29.98	761.5	72	22.2	80	S	4	1.8		5cs	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.12	765.0	30.15	765.8	73	22.8	76	SW	8	3.6			0			0	0	Clear	
Socorro, New Mexico	25.35	643.9	29.42	747.3	56	13.3	29	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.29	744.0	29.92	760.0	69.5	20.8	73	N	12	5.4		2cs	5s	W	S	0	0	Fair	
Springfield, Massachusetts	30.05	763.3	30.18	766.6	58	14.4	76	S	2	0.9		0	8ks		W	0.01	0.3	Cloudy	
Stockton, Texas	26.79	680.4	29.79	756.7	64	17.8	83	SE	8	3.6		0	0			0	0	Clear	
Thatcher's Island, Mass	30.17	766.3	30.23	767.8	50	10.0	93	NE	11	4.9			10s		SE	0.24	6.1	Cloudy	
Toledo, Ohio	29.18	741.1	29.82	757.4	74	23.3	63	SW	14	6.3		0	Haze		Calm	0	0	Clear	
Tucson, Arizona	27.43	696.7	29.98	761.5	66	18.9	51	S	4	1.8		0	0			0	0	Clear	
Unatilla, Oregon	29.84	757.9	30.34	770.6	52	11.1	73	E	3	1.3		5cs	0	NW		0	0	Fair	
Uvalde, Texas	28.96	735.6	29.74	755.4	74	23.3	90	SE	1	0.4			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.81	757.2	30.06	763.5	70	21.1	85	SE	6	2.7		Haze	0			0	0	Clear	
Virginia City, Montana	24.34	618.2	29.82	757.4	39	3.9	64	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.65	753.1	30.02	762.5	54	12.2	87	SW	3	1.3		0	0			0	0	Clear	
Washington, D. C	29.98	761.5	30.09	764.3	60	15.6	82	NE	8	3.6			10s		NE	0	0	Cloudy	
Wickenburg, Arizona					54	12.2	43	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.06	763.5	30.14	765.5	72	22.2	71	W	10	4.5		0	0			0	0	Clear	
Winnemucca, Nevada	25.74	653.8	30.10	764.5	50	10.0	52	Calm	0	0		5ck	0	SW		0	0	Fair	
Wood's Holl, Massachusetts	30.14	765.5	30.18	766.6	52	11.1	86	SE	11	4.9			10s		N	0.04	1.0	Cloudy	
Yankton, Dakota	28.66	728.0	29.90	759.4	65	18.3	63	NW	6	2.7		10k	0	W		0	0	Cloudy	
Yuma, Arizona	29.65	753.1	29.79	756.7	61	16.1	55	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			57.5	14.2	75	Calm	0	0			10ks			0.20	5.1	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.98	761.5	30.03	762.7	77	25.0	82	E	2.4	1.1		8c;ck	0	Calm		Inap.	Inap.	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.96	761.0	29.97	761.2	80	26.7	79	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	79.5	26.4	80	E	5	2.2		8k	5s	NE	E	1.47	37.3	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.93	761.0	29.96	761.0	79	26.1	87	E			2	5ck	5k	E		0.030	0.76	Fair	C. J. Hering.
Puerto Berrio, U.S.Colbia ‖	29.44	747.8	30.00	762.0	77	25.0	94	N			1		10ks			0.40	10.2		Francesco J. Cisneros.
Rivas, Nicaragua					77	25		SSE				8k	k	SSE	SSE	0	0	Covered	Carl Flint.
Santiago de Cuba, W. I	29.96	761.0	29.99	761.7	76	24.4	90	Calm	0	0		8cs		SW		0.187	4.75		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.13	765.3	30.18	766.6	28.0	— 2.2	94	N	14	6.3		1c	0	NW		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,916 m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.13	765.3	72	22.2	85	NE	5	2.2			5d		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.18	766.6	51	10.6	72	S	3	1.3			10							Light rain	
Naval Hospital, Yokohama, Japan	30.20	767.1	64	17.8	94	Calm			0		8ks;sme		W	0	0			Cloudy	
§ Adams, Punta Arenas, Costa Rica	29.92	760.0	78	25.6	91	NNE			1		8		NE					Cloudy	
§ Alaska, Ancon, Peru *	29.97	761.2	62	16.7	94	W			1		10					Smooth		Foggy	
§ Alert, N. 31° 44′, E. 139° 57′	29.99	761.7	65	18.3	89	E			9		10		Calm			Heavy	E	Drizzling	
Alliance, Norfolk, Va.	30.06	763.5	73	22.8	72	SW			1		0			0	0			Clear	
§ Ashuelot, Shanghai, China	29.91	759.7	68	20.0	84	SE			2		10		SE					Cloudy	
Colorado, New York, N. Y.	30.13	765.3	56	13.3	87	NE	4	1.8			10		Calm	0.01	0.3			Overcast	
§ Constitution, New York, N. Y.	30.14	765.5	54	12.2	87	ENE	12	5.4			10		Calm					Threatening	
§ Franklin, Off Navy Yard, Norfolk, Va	30.08	764.0	72	22.2	71	SW	4	1.8			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.11	764.8	56	13.3	??	W	2.4	1.1			2		W	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.74	755.4	50	10.0		S			3		10		SE			Smooth		Misty	
§ Lackawana, N. 20° —′, W. 105° 40′ †	30.05	763.3	77	25.0	82	SSE			1–2		5		SSE			Smooth	SSE	Fair	
§ Marion, S. 38° 16′. W. 56° 31′	29.81	757.2	52	11.1	66	SSW			5		10		SW	Blank	Blank	Mod'ate	SW	Cloudy	
§ Michigan, Erie, Pa.	29.85	758.2	72	22.2	62	S			2		2		S					Hazy	
§ Monocacy, Shanghai, China	29.89	759.2	78	25.6	50	SSE			3		10			0	0			Cloudy	
§ New Hampshire, Port Royal, S. C.	30.19	766.8	74	23.3	72	W	8	3.6			0			0	0			Clear	
Nipsic, Villafranca, France	29.57	751.1	64	17.8	58	SE			4		10		SE			Smooth	SW	Squally	
§ Onward, Ancon Bay, Peru †	29.98	761.5	62	16.7	100	W			1		10					Long	W	Misty	
§ Palos, Shanghai, China	29.92	760.0	65	18.3	100	SE			2		8							Cloudy	
§ Passaic, Washington, D. C.	30.09	764.3	62	16.7	88	NE			2		10		N	0	0			Overcast	
§ Pensacola, Vallejo, Cal.	30.06	763.5	60	15.6	82	SW			1–2		1					Smooth		Blue sky	
§ Portsmouth, N. 36° 59′, W. 76° 00′	30.06	763.5	68	20.0	84	SW			4		0			0	0	Smooth		Clear	
§ Powhatan, Annapolis, Md.	30.06	763.5	60	15.6	94	NNE			2		10							Misty	
§ Quinnebaug, N. 40° 21′, W. 14° 50′	29.94	760.5	58	14.4	82	E			6		10		NE			Heavy	NE	Sleeting	
§ Richmond, Shanghai, China	29.90	759.4	70	21.1	90	SE			3		10		SE					Fair	
§ Rio Bravo, Brownsville, Texas †	30.09	764.3	74	23.3	100	SE	1	0.4			8		S	0	0			Cloudy	
§ Saratoga, Lisbon Portugal	29.87	758.7	67	19.4	84	E			2		2		E	0	0			Hazy	
§ Shenandoah, Montevideo, Uruguay	29.79	756.7	57	13.9	87	WNW			3		5		SW			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.08	764.0	59	15.0	88	ENE	7	3.1			10			0	0			Cloudy	
Swatara, N. 6° 21′, E. 103° 37′ †	29.80	756.9	85	29.4	83	ENE			1		8		ESE			Smooth		Fair	
§ Tennessee, N. 13° 46′, W. 81° 40′	29.90	759.4				SE	3	1.3			8		ENE	0	0	Smooth		Cloudy	
Ticonderoga, Yokohama, Japan	30.21	767.3	67	19.4	100	ENE			1		10		Calm			Smooth		Hazy	
§ Trenton, N. 37° 00′. E. 19° 35′	29.77	756.1	74	23.3	76	NW			2		5			0	0	None		Fair	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.10	764.5	57	13.9	81	ENE			1		10		Calm					Hazy	
§ Wabash, Boston, Mass.	30.24	768.1	53	11.7	86	SE	6	2.7			10			0.11	2.8			Raining	
§ Wachusett, S. 41° 54′, W. 61° 03′	29.71	754.6	49	9.4	85	SSE			4–6		8		S;E	Light Squalls	Light Squalls	Mod'ate	S;W	Fair	
Wyoming, N. 42° 12′, E. 11° 10′	29.60	751.8	63	17.2	78	SW			4		5		SW			Mod'ate	SW	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 47° 38', W. 50° 43'	30.11	764.8	30	— 1.1		NW			4		1		NW			Smooth	NW	Clear	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth,
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 44° 46', W. 33° 21'...*†	30.28	769.1	64	17.8	94	Calm			0		10			1 h'r	1 h'r	Small	SE, SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 28° 20', W. 115° 30'...†	29.98	761.5	57	13.9	94	WNW			4		10		NW	0	0	Short	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains N. 50° 07', W. 22° 39'...*	30.08	764.0	59	15.0	76	S			3		0			0	0	Mod'ate	E	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China...†	29.78	756.4	79	26.1	95	SE			1		10		SE					Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal...†	30.12	765.0	53	11.7	93	SW			1		3k		W	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otorendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 34° 44', W. 120° 43'...†	30.07	763.8	52	11.1		NW			8		0					Heavy	WNW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Dobney, San Francisco, Cal...†	30.13	765.3	48	8.9		NW			3		5		NW					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acapulco, Mexico.....†	29.83	757.7	81	27.2	96	NE			1		2		NE			None		Clear	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury. N 27° 28 W 114 57 ....†	29.85	758.2	56	13.3	75	NW			5		10		NW			Mod'ate	NW	Cloudy	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. N. 17 30' W. 159 35 ...†	30.13	745.3	75	23.9	95	ENE			3		0			0	0	Light	NE	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. B. Berry, N 35° 27. E 165° 16 ....†	29.98	761.5	58	14.4	70	WNW			6		5		WNW			Rough	WNW	Fair	
§ S. S. City of Sidney, H. C. Dearborn Sydney, N. S. W.....*†	29.79	756.7	65	18.3		SW			4		2		SW	0	0	Smooth		Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury N 45° 07'. E 164° 01'.....†	30.04	763.0	47	8.3	76	ENE			3		8		E	0	0	Smooth		Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle,																			
§ S. S. Dakota, D. E. Griffiths Esquimalt, Vancouver's Id...†	30.17	766.3	52	11.1	79	Calm			0		10			0	0			Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavaery N 16° 00' W. 98° 36 .....†	29.94	760.5	79	26.1	91	N			4		8ks		N	0	0	Mod'ate	SSW	Squally	
§ S. S. Idaho, San Francisco, Cal.....†			52	11.1		Calm			0		0							Clear	
§ S. S. Zealandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			
S. S. Britanic, H. Perry																			H. N. Goulden.
S. S. Celtic, B. Glendell, N. 41° 49'. W. 59° 27'.....*†	30.21	767.3	45	7.2		NE			3		2		N	4 h'rs	4 h'rs	Smooth		Clear	J. Jones.
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Mouth of Penobscot river, Me...†	30.25	768.3	60	15.6		SE			1		0			0	0			Clear	Mehaffey.
Schr. Annie Fuller, J. Jorgensen. Satilla river, Georgia....	30.16	766.1	72	22.2	71	Calm	0	0		2c				0	0			Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis N. 22° 25'. W. 60° 58'.....†	30.06	763.5	78	25.6		NE			5		10		E	0	0	Rough	NE	Cloudy	L. L. Lewis.
Bark. Carrie Hoeele, B. F. Woodbury, S. 35° 16'. E. 22° 10'.....*†	30.26	768.6	67	19.4		SE			2		0			0	0	Long	SW	Fair	B. F. Woodbury.
Brigantine George, W. H. Cunnolin. Monabo, Porto Rico ....†	30.15	765.8	81	27.2		E			1		2			Show-ers.	Show-ers.	Smooth		Clear.	
Hippolyta																			
Iron Cross, W. Randall,																			
Barque Syringa, E. Lewis																			W. Randall. E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable compari-ons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 20, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

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

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.13	765.4				SW			4		8			0.177	4.5	Very cloudy	Dr. Ollive.
Nemours			30.04	762.9	72.3	22.4	72	WNW			2		6			0.016	0.4	Cloudy	Metge.
Algiers			30.01	762.3	61.8	16.6	67	NNE			4		10			0.059	1.5	Covered	Nicolas.
La Calle			29.94	760.4	60.8	16.0	89	NW			2		10			0.118	3.0	Covered	Fonfrède.
Tunis			29.88	759.0															Jacques.
Sfax			30.13	765.4															Gau.
Saida			30.02	762.6															Bernard.
Tebessa			29.94	760.4	60.4	15.8	71	NW			9		9			0.953	24.2	Covered	Watrin.
Geriville					66.2	19.0	24	SSE			3		10			0.276	7.0	Covered	Brugniaux.
Laghouat			29.96	760.9	63.3	17.4	55	N			1		10			0	0	Covered	Suart.
Biskra			29.88	758.9	84.9	29.4	36	E			2		5			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters? or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.45	748.1	30.00	762.1	54.9	12.7	47	E			5		6			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.30	744.3	30.08	764.1	47.1	8.4	45	N	5.8	2.6			7			0.068	0.2		Dr. Wierzbicki.
Eperies	29.09	738.9	29.93	761.5	47.1	8.4	52	N			3		7ks			0.112	2.84		Julius Mikolik.
Gratz	28.78	731.0	30.04	762.9	52.2	11.2	47	NE			3		6			0	0		Andreas Rospini.
Hermannstadt	28.45	722.7	29.90	759.5	47.3	8.5	92	NNW			1		10			0.085	2.15	Rainy	Prof. A. Gottschling
Kremsmünster, Observatory	28.72	729.5	30.08	764.0	48.4	9.1	62	N			1		7			0.098	2.5		The Staff.
Lemberg	28.95	735.4	29.97	761.1	41.7	5.4	82	NE			1		9			0.146	3.7		Dr. T. Stanecki.
Pola	29.81	757.2	29.93	760.1	54.5	12.5	41	E			6		8			0	0		I.R.Hydrographic Office.
Szathmar	29.48	748.9	29.96	761.0	45.7	7.6	72	N			3		10			0.130	3.3		Pet. Pancsics, S. J.
Szegedin	29.67	753.7	29.96	760.9	50.0	10.0	62	NW			1		8			0	0		Karl Stancel.
Trieste	29.91	759.6	30.01	762.2	57.2	14.0	30	ENE			3		2			0	0	Almost clear	P. Busin.
Vienna	29.36	745.8	30.09	764.3	49.3	9.6	56	NNW			2		3			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather he Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 19, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.13	765.3	30.23	767.5	58.6	14.8		NW	21	9.4			3			0	0	Blue sky	W. Boswell.
Ardrossan	30.24	768.1	30.25	768.3	58	14.4		WNW			5		3					Blue sky	G. Carrick.
Armagh, (Observatory)	30.14	765.5	30.37	771.4	63.0	17.2		NW	5	2.2			3					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.30	769.6	53.2	11.8		WNW	23	10.3			10					Overcast	John Hartnup.
Bolton (Sharples)	29.70	754.4	30.21	767.3	60.5	15.8		NNW	12	5.4			1					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.81	757.2	30.21	767.3	63.8	17.7	61	NE			1		10			0	0	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.93	760.2	29.96	761.0	83	28.3		NE			2		6					Gloomy	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.09	764.3	30.19	766.8	68.5	20.5		NW			1		10					Overcast	H. Todd.
Cardington			30.19	766.8	69.0	20.6		NW			0-1		4					D. clouds	John McLaren.
Chatham (School M. E.)	30.07	763.8	30.19	766.8	67.5	19.7		NW			0		7k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.31	769.9	30.35	770.9	55	12.8		N			3		5					D. clouds	J. Mac Gowan.
Dover	30.17	766.3	30.20	767.1	54	12.2		E			2		3					¾ clouded	J. Costello.
Falmouth (Observatory)	30.09	764.3	30.32	770.1				NNW			5		1					D. clouds	The Staff.
Fort Napier, Natal	27.86	707.6	30.07	763.8	68.5	20.3		NE			1		3					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.58	751.3	29.81	757.2	85	29.4		NW			1		10					Drizzling	
Galway (Queen's College)			30.35	770.9	63	17.2		SW			2		0					Blue sky	J. O'Donaghadne.
Gibraltar, Mediterranean.‖	29.94	760.5	29.99	761.7	66.4	19.1		SW			5		8					D. clouds	Pvt. O Baldwin.
Glasgow, (Observatory)	30.05	763.3	30.25	768.3	63.0	17.2		W			5		6k					D. clouds	D. G. Maclean.
Great Yarmouth	30.20	767.1	30.20	767.1	57	13.9		N			3		5					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.02	762.5	30.19	766.8	68.0	20.0		N			1		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.01	762.2	30.23	767.8	65	18.3		NNW			2		0					Blue sky	Dr. S. E Hoskins, F.R.S.
Helston	30.47	773.9	30.59	777.0	66	18.9		N			2	ck				0	0		M. P. Moyle.
Holyhead	30.30	769.6	30.34	770.6	55	12.8		NW			3		10					Overcast	John Tilston.
Jersey	29.98	761.5	30.27	768.8	64.9	18.3		NNW			2		0					Misty	J. Fisher.
Kew (Observatory)	30.16	766.1	30.20	767.1	68.0	20.0		N	4	1.8			8					Misty	The Met'g'l Office.
Leicester (Museum)	29.94	760.5	30.19	766.8	68.0	20.0		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.68	753.9	29.76	755.9	67	19.4		NE			2		8					Overcast	A. King.
Nairn	30.13	765.3	30.22	767.6	63	17.2		W			3		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.05	763.3	79.0	26.1		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.05	763.3	30.23	767.8	70.0	21.1		NE			2	c	5k		NE	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.71	754.6	30.23	767.8	61.0	16.1		NW			4		0					Blue sky	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.98	761.5	30.23	767.8	70	21.1		NNW			1		2					Misty	The Staff, for E. J. Stone, Esq
Plymouth	30.18	766.6	30.25	768.3	74.8	23.8		NW			4		0					Blue sky	John Merrifield.
*Roche's Point	30.32	770.1	30.45	773.4	65	18.3		NNW			3		2					¾ clouded	Wm. Kennedy.
St. Ann's Head	30.17	766.3	30.34	770.6	59	15.0		NW			2		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.11	764.8	51.5	10.8		NW	17	7.6			10					Misty	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.66	753.4	29.73	755.1	67.0	19.4		S			1		10					Raining	Serg't W. H. Lyne.
Sheffield	29.96	761.0	30.23	767.8	67.8	19.9		NW			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.21	767.3	30.24	768.1	69.3	20.7	51	W			3		5			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.24	768.1	66.1	18.9		W	14	6.3			5					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.99	761.7	30.26	767.1	69.4	20.8		NE			1		6					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.31	769.9	30.32	770.1	66	18.9		N			6		5					D. clouds	W. Newcombe.
Valencia Observatory)	30.44	773.2	30.46	773.7	61.8	16.6		WNW	14	6.3			3					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.94	760.5	29.98	761.5	74.9	23.8	57	S	3.7	1.7		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.24	742.7	50.0	10.0	80	W			2		10k			0.38	9.7	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.22	767.6	67.8	19.9		W			2		3k			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.85	758.2	30.04	763.0	75.0	23.9	76	ESE	4.5	2.0		4	4	NNW	ENE	0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.62	752.3	29.71	754.6	58.1	14.5	75	N	20	8.9			9			0.02	0.5	Threatening	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.27	768.8	61	16.1		NW			4	8	5	NW		0	0		J. Youngclause.
North Unst, Shetland I's			29.99	761.7				NW			6	4	5	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert,				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma,				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra,				Capt. W. P. Hughes.
S. S. Strathleven,				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	29.90	759.4	68.9	20.5	91	NE			1	9ks				0.47	12.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.89	759.3	29.94	760.5	47.3	8.5	81	SW			2		10						
Fanöe	29.93	760.3	29.95	760.8	51.1	10.6	70	W			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.61	752.0	29.65	753.1	43.5	6.4	94	W			4		8					Raining	
Thorshavn (Faröe)	30.00	762.1	30.04	763.0	50.7	10.4	71	NW			5		7						
Vestervig	29.80	757.0	29.90	759.4	50.9	10.5	88	WNW			4		10						

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

FRENCH SERIES.

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

Alençon, Normal School	29.68	753.9	30.23	767.9	60.8	16	69	NE			1		8n		NE	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	30.08	764.0	30.19	766.8	60.1	15.6	66	N			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.91	759.8	30.17	766.3	58.8	14.9	63	N			4		7k		NE	0.016	0.4		Klein, Commandant.
Avignon, Normal School	29.88	759.0	29.96	761.0	63.3	17.4	32	N			4		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.58	751.2	30.18	765.2	59.9	15.5	43	NE			1		0			0	0	Clear	C. Saillard, Director.
Beauvais, Normal School	29.92	760.0	30.19	766.8	57.7	14.3	69	NNE			2		8			0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.15	740.4	30.02	762.5	63.0	17.2	49	NE			1		8		NE	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.93	760.2	30.18	766.2	63.5	17.5	46	NE			2		2		ENE	0	0	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.18	741.2	30.10	764.5	60.8	16	41	N			4		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.59	751.6	30.14	765.5	59.4	15.2	47	NNE			2		0			0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	30.02	762.6	30.27	768.8	66.6	19.2	61	NE			2		0			0	0		Ch. de Rermaree, Dir
Caen, Normal School	30.10	764.4	30.17	766.4	59.4	15.2	85	NNW			1		10		N	0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.61	752.1	30.02	762.5	65.5	18.6	28	W			2		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.82	757.5	30.14	765.6	63.5	17.5	47	W			2		5		N	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.71	754.7	30.28	769.2	60.1	15.6	93	N			1		9		S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob.	28.73	729.8	30.08	764.0	58.6	14.8	25	N			2		0			0	0		Alluard, Director.
Commercy, Normal School	29.26	743.2	30.12	765.0	56.5	13.6	20	E			3					0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.83	732.2	29.97	761.2	60.6	15.9	52	SW			2		5		SW	0.685	17.4		L. Kina, Director.
Grenoble, Normal School	29.26	743.3	30.02	762.5	61.5	16.4	58	W			1		ck		SW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.99	761.7	30.20	767.0	68.0	20.0	54	N			1		2		N	0	0	Slightly cld'y	Mouillot, Director.
Le Mans, Normal School	29.89	759.3	30.20	767.1	61.7	16.5	61	NE			3		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	739.8	30.01	763.0	58.1	14.5	28	NNE			3		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	30.14	765.5	30.25	768.3	72.7	22.6	50	NNE			3		5		NE	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.43	747.6	30.05	763.2	59.5	15.3	25	N			3		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.65	753.2	29.92	760.0	62.6	17.0	48	WNW			1		4		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.91	736.9	30.06	763.5	55.0	12.8	35	NE			3		k		NE	0	0		Barbier, Director.
Mont-Louis	24.80	630.0	30.04	763.0	44.8	7.1	41	NE	22.4	10.0			6		E	0	0		M. Cave, for Dr. Fines.
Nice	29.89	759.1	29.92	759.9	66.2	19.0	53	E			2		1	E	E	0	0	Clear	Capt. Boissière, Director
Nismes, Normal School	29.74	755.5	29.95	760.6	57.4	14.1	52	N			4		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.89	759.2	30.00	761.9	63.1	17.3	16	NW	29.8	13.3			1	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.50	571.4			30.2	—1.0							5		NNE	0.098	2.5	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.91	734.2	29.98	761.4	59.4	15.2	29	N			4		0			0	0	Clear	M. Taillen
Puy de Dome (Summit) Ob.	26.16	639.2			36.0	2.2	65	NNE			4		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.15	765.7	30.18	766.5	71.2	21.8	44	NE			1		0			0	0	Clear	Lt E. Devante, Director
Rouen, Normal School	30.11	764.9	30.20	767.1	61.0	16.1	74	NNE			1		8		NNE	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.26	768.6	30.29	769.4	63.1	17.3	69	W			3		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.01	762.2	30.17	766.4	59.5	15.3	59	NW			1		10		N	0	0		E. Renou, Director.
Tarbes, Normal School	29.66	738.2	30.13	765.3	64.4	18	44	W											T. Huguet, Director
Toulouse, Observatory	29.41	747.1	30.14	765.5	61.0	16.1	30	NNW			4		0			0	0	Clear	B. Baillard, Dir.
Tours	29.97	761.2	30.17	766.2	66.2	19.0	48	NE			1		2		NNE	0	0	¼ covered	M. de Tastes.
Versailles, Observatory	29.69	754.1	30.18	766.6	57.9	14.4	65	N			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.24	742.6	29.94	760.4	62.6	17	38	NNE			3		0			0	0	Clear	Nicot, Director.
Sun-Sauves,																			
Fort de France, Martinique	30.15	765.7	30.17	766.4	81.0	27.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.90	759.4			57.2	14.0	64	NNW			1		10		N	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.94	760.5	29.97	761.2	63.3	17.4	67	N	11.4	5.1			10k;n		NNW; w	0.031	0.8	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,686.40 m., or 5,264.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.6	30.10	764.6	53.2	11.8	40	W			4		4k	NW		0	0		Prof. Dr. Hoh.
Berlin	29.89	759.2	30.06	763.5	59.5	15.3	29	SE			2		6			0	0		Prof. Dr. Arndt.
Breslau	29.61	752.2	30.15	765.7	48.0	8.9	35	NE			2		8			0	0		Royal University Obs'y
Carlsruhe	29.67	753.7	30.10	764.6	56.1	13.4	48	NE			1		0			0	0		Albert Senz.
Cassel	29.47	748.6	30.08	764.1	58.5	14.7	26	WNW			3		6	NW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.81	757.1	30.17	766.4	58.6	14.8	11	S			0		3			0	0		Physical Society.
Friedrichshafen	28.64	727.4	30.08	764.1	51.1	10.6	41	NE			4		3	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.99	761.7	30.06	763.5	49.3	9.6	87	SW			4		10			0	0		Dr. Reinhold Kleeman.
Kiel	29.98	761.5	30.00	761.9	49.8	9.9	82	SW			4		10			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	30.05	763.2	30.13	765.3	46.9	8.3	44	NW			3		5	E		0	0		Prof. E. Luther.
Köslin			30.05	763.3	55.4	13.0		N			2		4			0	0		H. Müller.
Leipsic Observatory	29.71	754.5	30.13	765.2	55.2	12.9	35	SW			1		6			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.86	758.4	30.09	764.2	57.9	14.4	43	SSW			3		9ks	W		0	0		Dr. Assmann.
Memel	30.07	763.7	30.11	764.9	46.6	8.1	66	W			4		2s						Reinbrecht & Issermann
Munich	28.26	717.8	30.13	765.3	47.3	8.5	52	E			2		9	E		0.012	0.3		Dr. C. Lang.
Neufahrwasser	30.10	764.4	30.11	764.8	48.6	9.2	44	ENE			3		4			0	0		A. Lothes.
Neustadt (Palatinate)	29.57	751.1	30.10	764.5	59.0	15.0	28	NE			1					0	0		Realiehrer Dicknether.
Posen	29.87	758.7	30.16	766.1	50.2	10.1	39	N			4		7			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.58	751.4	30.13	765.4	56.5	13.6	32	NE			3		0			0	0		Imp. University Observatory.
Stuttgart	29.15	740.3	30.04	763.1	54.5	12.5	25	NE					0			0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.59	726.3	30.18	766.5	50.4	10.2	53	NW	1.1	0.5		2ck		N		0	0		Reallehrer J. Hopfner.
Wustrow	30.01	762.2	30.03	762.7	50.5	10.3	47	SW			5		5s			0	0		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.34	745.3	29.72	754.9	82.4	28.0		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.50	749.4	29.55	750.6	87.0	30.6	76	S					4	S		0	0	D. clouds	
Deesa	29.08	738.7	29.53	750.1	102.6	39.2	17	SSW	17.7	7.9			1	W		0	0	Misty	
Bombay	29.70	754.3	29.74	755.3	87.0	30.6	69	WSW	15	6.7			5	SW		0	0	D. clouds	
Poona (Yarrowda)	27.86	707.7	29.66	753.5	90.8	32.7	37	WSW	24	10.7			0			0	0	Blue sky	
Belgaum	27.23	691.7	29.74	755.5	79.4	26.3	66	W	14	6.3			3	E	W	0	0	D. clouds	
Lahore	28.79	731.2	29.50	749.2	98.2	36.8	23	Calm	2.3	1.0			4			0	0	D. clouds	
Roorkee	28.66	728.0	29.53	749.9	93.8	34.3	20	N	2	0.9			0			0	0	Sultry	
Agra	28.99	736.3	29.52	749.9	103.1	39.5	19	W	4.2	1.9			0			0	0		
Nagpur	28.53	724.7	29.52	749.8	103.5	39.7	21	W	4.4	2.0			5	SW		0	0	D. clouds	
Jubbulpore	28.26	717.8	29.58	751.2	96.2	35.7	25	E	3.2	1.4			4			0	0	D. clouds	
Lucknow	29.16	740.6	29.52	749.7	99.8	37.7	17	NE	1.4	0.6			5	ENE		0	0	Blue sky	
Allahabad	29.21	742.0	29.51	749.5	100.0	37.8	30	Calm	1.1	0.5			0			0	0	Blue sky	
Patna	29.35	745.4	29.52	749.9	97.8	36.6	32	NNE	2.2	1.0			2	NE	NE	0	0		
Hazaribagh	27.60	701.0	29.57	751.0	84.8	29.3	66	E	9.1	4.1			1			0	0		
Cuttack	29.54	750.4	29.62	752.5	88.9	31.6	65	S	3.5	1.6			8			0	0	D. clouds	
Calcutta (Alipore)	29.60	751.8	29.62	752.3	89.5	31.9	61	W	14.0	6.3			7	W	W	0	0	D. clouds	
Goalpara	29.22	742.2	29.62	752.4	84.9	29.4	66	Calm	1.8	0.8			0			0.10	2.5	Blue sky	
Chittagong	29.55	750.6	29.64	752.8	85.9	29.9	79	SW	5.0	2.2			0			0	0		
Sibsagar	29.32	744.7	29.65	753.1	85.0	29.4	76	NE	3.5	1.6			8	SW	SW	0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.55	750.6	29.96	760.9	59.5	15.3	24	NE	3.1	1.4			5			0	0		Prof. Giovanni Clodig.
Milan	29.44	747.8	29.96	760.9	61.0	16.1	41	ENE	3.8	1.7			7	E		0	0		Prof. Schiaparelli.
Padua	29.88	758.9	29.98	761.6	56.5	13.6	37	ESE	19.2	8.6			4			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.06	738.1	29.96	760.9	55.6	13.1	59	E	2.5	1.1			6	SE		0	0		Prof. P. F. Denza.
Genoa	29.73	755.2	29.92	760.0	61.7	16.4	26	N	3.8	1.7			4	NE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.05	712.4	29.94	760.5	50.5	10.3	61	NW			4		9			0	0		Prof. D. C. Bruno.
Pesaro	29.87	758.7	29.92	759.9	54.1	12.3	58	NE	18.1	8.1			10	NE		0.272	6.9		Prof. Luigi Guidi.
Florence	29.66	753.4	29.92	759.9	57.2	14.0	53	N			6		10			0.118	3.0		Cav. F. Meucci.
Leghorn	29.80	756.9	29.88	759.0	60.8	16.0	39	ENE	14.3	6.4			3			0	0		Prof. P. Monte.
Rome	29.60	751.9	29.78	756.3	61.0	16.1	61	N	9.4	4.2			10			0	0		Prof. P. S. Ferrari
Lecce	29.53	750.1	29.78	756.4	69.8	21.0	65	E	4.9	2.2			7			0.724	18.4		Prof. C. De Giorgi
Cosenza	28.88	733.6	29.76	755.8	75.9	24.4	73	NW	1.3	0.6			9			0.020	0.5		Prof. D. Conti.
Cagliari	29.57	751.1	29.76	755.9	75.7	24.3	55	S			2		7	NW		0.008	0.2		Prof. A. Pacinotti.
Palermo	29.57	751.1	29.82	757.5	66.7	19.3	70	NW	11.2	5.0			10			0	0		Prof. G. Ciacciatore.
Syracuse	29.69	754.1	29.73	755.2	72.3	22.4	75	SE	11.2	5.0			10	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.27	743.4	29.78	756.4	63.5	17.5	67	NE	4.3	1.9			10	NW		0.071	1.8		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					65.4	18.6	78	WSW	2.8	1.2		ck	4ks;s		S	0.107	2.72	Fair	K. Sasaki.
Nagasaki, I. M. Obs'y					61.6	20.9	58	S	7.5	3.3			10s			0.920	23.37	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.69	754.1	29.89	759.2	62.5	16.9	81	SE	3.5	1.6		0	0			0	0	Clear	The Staff.
Wakayama	30.06	763.5	30.13	765.3	64.3	17.9	64	SW	1.4	0.6			10s			0	0	Cloudy	
	30.01	762.2	30.06	763.5															

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima					54.7	12.5	55	NW			1	0	0						R. Banda, C. E.
Guadalajara	24.98	634.6	30.02	762.4	60.6	15.9	70	Calm	0	0		sk	0	W		0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.61	599.7			66.9	19.4	75	NW			1	0	0			Inap.	Inap.	Clear	Vicente Fernandez.
Leon	24.36	618.8	29.93	760.2	71.0	21.7	90	NE			1	6ck	0	SW		0	0	Clear.	Prof. M. Leal.
Mazatlan	29.67	753.7	29.93	760.3	69.0	15.0	68	Calm	0	0		10pc	0	SW		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.00	584.1	29.89	759.2	71.1	21.7	47	NW			3	2c	0	SE		0	0	Covered.	The Staff
Morelia	23.99†	609.3†			61.3	16.3	62	NE			1	0	0			0	0	Clear	M. Fena, M. D.
Pabellon (Aguascalientes)	23.88	606.5	29.83	757.7	64.4	18.0	47	Calm	0	0		1c	2ck	SW	SW	0.53	13.4	Light haze.	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.34	592.8	29.91	759.8	62.8	17.1	53	SE			1	2	1	W	E	0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.12	612.6	30.00	761.9	79.9	26.6	90	S			1	1	2	S	E	0	0	Hazy	G. Barroeta, M. D.
Tlacotaipam	29.78	756.4	29.79	756.7														Clear.	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.50	571.6	30.01	762.3	59.9	15.5	45	Calm			0	0	0			0	0	Very clear...	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.20	767.1	30.20	767.1	53.6	12.0		NNW			4					0.020	0.5		
Groningen	30.01	762.3	30.07	763.7	50.9	10.5		NW								0.047	1.2		
Helder	30.12	765.2	30.12	765.2	51.6	10.9		NW			4					0	0		
Hellevoetsluis	30.16	766.1	30.16	766.1	54.5	12.5	83	NW			2					0	0		
Utrecht	30.10	764.5	30.15	765.7	54.7	12.6	78	NW			3		10			0.012	0.3	Dull	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.89	759.2	29.94	760.4	51.1	10.6	74	NNW	11.6	5.2	.....	.....	6	.....	.....	0.055	1.4	.....	
Brönö	29.49	749.0	29.53	750.0	43.5	6.4	86	SW	18	8	.....	.....	10	.....	.....	0.433	11.0	Raining	
Christiania	29.58	751.3	29.72	754.9	62.8	17.1	40	WSW	7	3	.....	.....	7	.....	.....	0	0	.....	
Tromsö	29.56	750.7	29.61	752.1	41.4	5.2	51	SE	7	3	.....	.....	0	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.13	765.2	30.34	770.6	63.0	17.2	71	NW	.....	.....	3	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.97	735.8	29.99	761.8	65.1	18.4	39	ENE	6.3	2.8	.....	.....	6	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.01	762.3	30.10	764.5	63.7	17.6	65	SE	6.3	2.8	.....	.....	4	.....	.....	0.016	0.4	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.65	753.2	30.01	762.2	65.5	18.6	50	NE	8.7	3.9	.....	.....	7	ENE	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.20	767.1	30.27	768.9	62.6	17.0	52	ENE	7.4	3.3	.....	.....	10	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd'r.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd'r.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd'r.
Quanza, Carlos Maria da Silva. Mossamedes, Benguela	.....	.....	29.93	760.2	71.6	22.0	.....	NW	.....	.....	1	.....	2	.....	NW	1	NW	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd'r.
Rio Lima, S. C. da Silva Costa,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Com'd'r.
Sado. J. A. de Brito Capello Mossamedes, Benguela	.....	.....	29.91	759.8	72.5	22.5	.....	WNW	.....	.....	3	.....	2	.....	.....	3	W	.....	D. clouds	A. Tito da Silva, Q. M.
Tejo. J. M. T. Guimaraes, Macao, China	.....	.....	29.97	761.1	82.6	28.1	.....	N	.....	.....	1	.....	10	.....	N	0	.....	3	Raining.	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.90	759.5	29.92	760.0	35.4	1.9	84	SW	13	6	.....	.....	10	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.79	756.6	29.71	754.5	70.7	21.5	66	NNW	16	7	.....	.....	3s	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Barnaul	29.32	744.8	29.80	757.0	65.7	18.7	76	S	0	0	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Dorpat	29.80	756.8	30.04	763.1	49.8	9.9	46	SW	9	4	.....	.....	10ks	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	29.09	738.9	30.02	762.4	72.3	22.4	34	Calm	0	0	.....	.....	1c	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.54	750.4	29.80	756.8	75.2	24.0	31	S	22	10	.....	.....	6k	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.76	755.9	29.78	756.4	63.1	17.3	93	Calm	0	0	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.19	741.5	29.84	757.9	43.9	6.6	77	NE	4	2	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.44	747.7	29.88	759.0	77.9	25.5	33	S	9	4	.....	.....	5ks	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.53	750.1	29.73	755.1	75.0	23.9	57	ESE	13	6	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.49	749.0	30.05	763.3	43.0	6.1	56	N	10.1	4.5	.....	.....	6ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.74	755.3	29.81	757.1	61.3	16.3	74	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.83	757.7	29.92	759.9	39.0	3.9	90	E	7	3	.....	10c	.....	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.67	753.7	29.82	757.3	65.1	18.4	22	Calm	0	0	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	30.00	762.0	30.02	762.4	44.2	6.8	57	WSW	11	5	.....	.....	8kn	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.30	718.8	29.78	756.3	82.8	28.2	62	N	4	2	.....	.....	8	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.40	721.4	29.77	756.2	70.2	21.2	55	NW	9	4	.....	.....	9cs	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.67	753.5	30.09	764.3	47.3	8.5	37	N	4	2	.....	ck	8ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.66	753.3	30.08	764.1	50.2	10.1	40	N	4	2	.....	.....	8	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.65	753.1	29.93	760.1	67.3	19.6	38	Calm	0	0	.....	.....	10	.....	.....	.....	.....	Hazy	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.87	758.7	29.97	761.3	63.9	17.7	56	SE	4.5	2.00	.....	.....	6	.....	.....	0.089	2.25	Clouds	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.19	766.7	30.24	768.1	68.0	20.0	47	NW	1.9	0.83	.....	.....	10	.....	.....	0	0	Covered	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.19	690.5	.....	.....	55.0	12.8	54	NE	18.8	8.41	.....	.....	4	.....	.....	0	0	Light clouds	Domingo Martinez Perez.
Madrid, Royal Observatory	27.80	706.2	29.99	761.7	64.9	18.3	26	NE	13.4	6.00	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	29.83	757.6	29.98	761.4	69.8	21.0	60	SE	6.4	2.86	.....	3	5	NW	.....	0.004	0.09	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.24	742.7	30.12	765.1	66.7	19.3	42	NE	29.3	13.1	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.1	76.0	24.4	85	ESE	3.6	1.6	.....	10cs	0	SSW	.....	0.614	15.6	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.80	759.9	29.85	758.2	86.1	30.1	78	SSW	0.7	0.3	.....	3cs	2ks	W	E	0	0	Cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.94	760.5	30.04	763.0	66.4	19.1	77	WSW	6.8	3.0	.....	0	8	.....	W	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.6	30.00	761.9	78.4	25.8	87	SE	0	0	.....	4sk	4k	SE	SE	0.354	9.00	Cloudy	Enriquetadas, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.85	758.3	29.89	759.3	39.6	4.2		S			2		0			0	0		
Umea	29.77	756.2	29.82	757.5	43.2	6.2	62	S			2		9			0.102	2.6		
Hernosand	29.68	753.8	29.73	755.1	40.3	4.6	64	SE			2		10			0	0		
Stockholm	29.64	752.8	29.82	757.3	50.5	10.3	83	W			4		10			0.047	1.2		
Wisby	29.88	759.0	29.94	760.5	44.2	6.8	80	WSW			6		10			0.047	1.2	Light rain	
Sub-Series.																			
Upsala	29.67	753.5	29.75	755.7	54.1	12.3	62	WSW	11.2	5.0			9		W	0.031	0.77		Nils Ekholm.

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

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pahlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.60	726.4	30.03	762.7	52.0	11.6	80	NNE			6		0			0	0	Clear	The Observatory.
Zurich	28.45	722.6	30.09	764.3	58.2	11.8	53	E			4		2			0	0	Clear	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +1.1 mm.; Thermometer, —5.6 Cent. Relative Humidity, —27 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.76	755.8	69.4	20.8	67	S	7	3.0			10		SW	0.118	3.0	Thunder-storm.	The Observatory.
Fao, Persian Gulf																			
Valona			29.87	758.6	72.7	22.6		S			2		5			1.57	40.	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			30.04	763.1	73.8	23.2	69	NW			1	7ck		NW		0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					53.9	11.7		Calm	0	0			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.86	758.4	29.92	760.0	53.3	11.8	93	SW	9	4.0			10n			0.04	1.0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.98	761.5	30.03	762.7	50.9	10.5	85	SW	12	5.4			10s			0.020	0.5	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.95	760.7	67.5	19.7	77	SW			2		10s			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.																			H. A. Johnson.
Father Point, Quebec	29.77	756.1	29.79	756.7	64.6	18.1	92	SW	25	11.2		0	0			Inap.	Inap.	Clear	J. McWilliams.
Fredericton, N. B.	29.96	761.0	30.02	762.5	52.0	11.1	87	SE	2	0.9			10n			0	0	Foggy	Prof. Harrison.
Fort Garry, Manitoba	29.40	746.7	30.25	768.3	36.5	2.5	92	W	1	0.4		0	0			0.300	7.62	Clear	James Stewart.
Granton, Ontario	28.85	732.8	29.92	760.6	61.0	16.1	71	Calm			0	0	0			Inap.	Inap.	Clear	James Grant.
Halifax, N. S.	30.08	762.7	30.16	766.1	50.3	10.2	90	SE	12	5.4			10n			0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.52	749.8	29.90	759.4	66.9	19.4	89	NE			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.59	751.6	29.92	760.0	60.1	15.6	84	S	4	1.8		7ck	0	SW		0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.13	765.3	30.17	766.3	43.1	6.2	82	S	12	5.4			10n			0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.76	755.9	29.95	760.7	68.0	20.0	74	W	8	3.6		8c;ck	2ks	NW		0.04	1.0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	30.18	765.3	30.15	766.8	26.5	— 3.1	82	N			3		10n			0.05	1.3	Cloudy	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.25	742.9	29.93	760.2	53.5	11.9	97	SE	5	2.2		5k	5n	SW		0.18	4.6	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.21	741.9	29.94	760.5	67.2	19.6	48	Calm			0	0	0			0	0	Hazy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.28	743.7	29.95	760.7	63.1	17.3	94	Calm	0	0		5ck	0	W		Inap.	Inap.	Fair	H. Morgan.
Port Stanley, Ontario	29.31	744.5	29.94	760.5	64.0	17.8	90	W	1	0.4			Fog			0.32	8.1	Foggy	M. Payne.
Quebec, Quebec	29.62	752.3	29.93	760.2	63.0	17.2	83	W			5	0	3s			Inap.	Inap.	Fair	Capt. Ashe; R. N.
Rockliffe, Ontario	29.50	749.3	29.95	760.7	52.0	11.1	83	Calm	0	0			Haze			0	0	Hazy	W. H. McIntyre.
St. John, N. B.	29.89	759.2	30.00	763.5	47.0	8.3	96	SW	8	3.6			Fog			0	0	Foggy	G. Murdock, C. E.
Saugeen, Ontario	29.23	742.4	29.94	760.5	55.2	12.9	98	SW	4	1.8			10ks			0.61	15.5	Foggy	K. Stewart.
Stratford, Ontario	28.68	728.5	29.93	760.2	59.4	15.2	79	Calm	0	0		2cs	0			0.089	2.26	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.13	765.3	30.17	766.3	43.5	6.4	78	SW	16	7.2			10n			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.58	751.3	29.96	761.0	59.3	15.2	92	SE	1	0.4		5ck	2ks	W		0	0	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.90	734.0	29.92	760.0	67.1	19.5	82	SE	3	1.3		4c	1s			0.37	9.4	Fair	Professor Wolverton.
Yarmouth, N. S.	30.04	763.0	30.10	764.5	54.4	12.4	95	S	25	11.2			Fog			0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.11	764.8	30.37	771.4	42	5.6	27	W				5k	5s			0	0	Fair	John Delany.
St. Pierre, N. F., Pilopital Maritime			30.20	768.6	42.8	6.0		W			3					0.28	7.1		The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.97	761.2	30.05	763.3	64	17.8	78	S	6	2.7		0	8s		Calm	0	0	Fair	
Alpena, Michigan	29.26	743.2	29.90	759.4	56	13.3	69	SW	4	1.8			8s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.94	735.1	30.04	763.0	73	22.8	63	SE	7	3.1		0	Haze			0	0	Clear	
Atlantic City, New Jersey	30.08	764.0	30.09	764.3	63	17.2	89	NE	2	0.9		5k;Hz	Fog	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.98	761.5	30.18	766.6	70	21.1	75	Calm	0	0		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.03	762.7	30.08	764.0	70	21.1	75	E	2	0.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Barnegat, New Jersey	30.04	763.0	30.06	763.5	56	13.3	100	E	4	1.8		0	Fog		Calm	0	0	Foggy	
Bismarck, Dakota	8.40	721.3	30.25	768.3	41	5.0	82	NE	4	1.8			10s		Calm	0.08	2.0	Cloudy	
Boerne, Texas	28.44	722.4	29.72	754.9	65	18.3	80	N	8	3.6			10ks		NE	0.49	12.4	Cloudy	
Boise City, Idaho	27.12	689.1	30.09	764.3	60	15.6	71	SE	6	2.7		2k	2s	Calm	SW	0	0	Fair	
Boston, Massachusetts	29.89	759.2	30.04	763.0	63	17.2	83	W	4	1.8		Haze	Haze	Calm	Calm	0.02	0.5	Hazy	
Brackettville, Texas	28.74	730.0	29.77	756.1	66	18.9	89	SE	3	1.3			10ks		SE	0	0	Cloudy	
Breckenridge, Minnesota	29.14	740.1	30.16	766.1	40	4.4	82	N	12	5.4		2cs	2s	W	N	0	0	Fair	
Brownsville, Texas	29.78	756.4	29.82	757.4	79	26.1	87	SE	1	0.4		5cs	0	Calm		0	0	Fair	
Buffalo, New York	29.26	743.2	29.93	760.2	65	18.3	73	SW	3	1.3		4c;ck	Haze	SW	Calm	0	0	Fair	
Burkes, Arizona					59	15.0	38	W			1	2c	0	Calm		0	0	Clear	
Burlington, Vermont	29.71	754.6	29.99	761.7	63	17.2	78	S	10	4.5		5ck	Haze	SW		0.04	1.0	Hazy	
Cairo, Illinois	29.55	750.6	29.92	760.0	72	22.2	76	S	6	2.7			10n		S	0.02	0.5	Light rain	
Campo, California	27.29	693.2	29.86	758.4	43	6.1	75	NW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.20	767.1	30.20	767.1	73	22.8	76	SW	11	4.9		0	0			0	0	Clear	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	69	20.6	75	SW	20	8.9		0	Haze		Calm	0	0	Hazy	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	73	22.8	81	SW	8	3.6		0	0			0	0	Clear	
Cape May, New Jersey	30.04	763.0	30.17	763.8	68	20.0	79	S	11	4.9		0	Fog		Calm	0	0	Clear	
Castroville, Texas	29.08	738.6	29.74	755.4	73	22.8	76	N	3	1.3			10s		N	0	0	Threatening	
Cedar Keys, Florida	30.07	763.8	30.09	764.3	75	23.9	77	E	11	4.9		1k	0	Calm		0	0	Clear	
Charleston, South Carolina	30.11	764.8	30.16	766.1	77	25.0	69	S	4	1.8		2k	0	S		0	0	Clear	
Charlotte, North Carolina	29.31	744.5	30.10	764.5	71	21.7	71	S	6	2.7		0	Sm'e		Calm	0	0	Clear	
Chattanooga, Tennessee	29.27	743.4	30.04	763.0	70	21.1	75	Calm	0	0		1cs	Sm'e	Calm	Calm	0	0	Smoky	
Cheyenne, Wyoming	24.18	614.2	30.12	765.0	42	5.6	50	NE	10	4.5			10s		NW	0	0	Cloudy	
Chicago, Illinois	29.22	742.2	29.89	759.2	61	16.1	88	W	3	1.3			10n		Calm	0.45	11.4	Light rain	
Chincoteague, Virginia	30.10	764.5	30.11	764.8	68	20.0	90	SW	16	7.2		0	Haze		Calm	0	0	Hazy	
Cincinnati, Ohio	29.34	745.2	29.96	761.0	69	20.6	70	SE	3	1.3		5k	4ks	S	Calm	0	0	Cloudy	
Cleveland, Ohio	9.25	742.9	29.95	760.7	68	20.0	70	W	4	1.8		10cs	0	SW		0	0	Cloudy	
Coleman City, Texas	28.13	714.5	29.75	755.6	64	17.8	89	SW	10	4.5			10s		Calm	0.96	24.4	Cloudy	
Columbus, Ohio	9.17	740.9	29.98	761.5	66	18.9	69	S	8	3.6			10ks		S	0	0	Cloudy	
Concho, Texas	8.10	713.7	29.75	755.6	61	16.1	88	NE	12	5.4			10n		NE	0.12	3.0	Light rain	
Corsicana, Texas	29.47	748.5	29.92	760.0	64	17.8	94	N	8	3.6			10n		Calm	1.34	34.0	Light rain	
Davenport, Iowa	29.28	743.7	29.89	759.2	64	17.8	63	SW	3	1.3		5c	0	S		0	0	Fair	
Dayton, Washington T'y					56	13.3	80	Calm	0	0			10s		SW	0	0	Cloudy	
Deadwood, Dakota	25.52	648.2			27	2.8	71	Calm	0	0		0	0			0.09	2.3	Clear	
Decatur, Texas																			
Delaware Breakwater, Del.	30.05	763.3	30.08	764.0	72	22.2	71	SW	22	9.8		0	Haze			0	0	Hazy	
Denison, Texas	29.08	738.6	29.85	758.2	65	18.3	89	E	2	0.9			10ks		SE	0.20	5.1	Cloudy	
Denver, Colorado	24.91	632.4	30.12	765.0	47	8.3	66	S	2	0.9		2ck	5s	W	W	0.02	0.5	Fair	
Des Moines, Iowa	29.09	738.9	29.94	760.5	63	17.2	72	Calm	0	0			10s		Calm	0.02	0.5	Cloudy	
Detroit, Michigan	29.26	743.2	29.90	759.4	63	17.2	78	W	1	0.4			10s		W	0.06	1.5	Cloudy	
Dodge City, Kansas	27.44	69 .0	29.71	754.6	52	11.1	93	N	10	4.5		0	0			0	0	Clear	
Dubuque, Iowa	29.21	741.9	29.88	758.9	63	17.2	62	NW	1	0.4			10s		NW	0	0	Cloudy	
Duluth, Minnesota	29.39	746.5	30.07	763.8	45	7.2	84	NW	12	5.4		10k	0	N		0	0	Cloudy	
Eagle Pass, Texas	29.01	737.6	29.75	755.6	70	21.1	85	Calm	0	0		5ck	0	Calm		0	0	Fair	
Eastport, Maine	29.97	761.2	30.03	762.7	52	11.1	86	SW	8	3.6			Fog		Calm	0	0	Dense fog	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.26	743.2	29.95	760.7	65	18.3	73	N	2	0.9		2k	Haze	W	Calm	0	0	Fair	
Escanaba, Michigan	29.30	744.2	29.95	760.7	52	11.1	60	N	14	6.3		5k	0	SW		0	0	Fair	
Florence, Arizona	28.30	718.8	29.90	759.4	62	16.7	72	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.98	634.5	30.43	772.9	42	5.6	50	E	3	1.5		2c	0	Calm		0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	8.14	714.7	30.01	762.2	43	6.1	91	NE	3	1.3		1c	0	NE		0.04	1.0	Clear	
Fort Custer, Montana	26.88	682.7			46	7.8	69	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765.3	62	16.7	61	N	4	1.8		0	1s		N	0	0	Clear	
Fort Elliot, Texas	26.94	684.3	29.13	739.9	55	12.8	81	NE	22	9.8			10s		NE	0.67	17.0	Cloudy	
Fort Gibson, Indian Ter.	29.40	746.7	29.92	760.0	62	16.7	88	S	4	1.8			10s		Calm	0	0	Cloudy	
Fort Grant, Arizona	25.13	628.3	29.93	760.2	63	17.2	19	S	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.72	729.5	29.96	761.0	63	17.2	83	NE	6	2.7			10s		Calm	0.15	3.8	Cloudy	
Fort Keogh, Montana	27.40	696.0			44	6.7	67	NE	3	1.3		0	0			0	0	Clear	
Fort McKavett, Texas	27.68	703.1	29.54	750.3	65	18.3	73	NE	8	3.6		9ck	1s	NE	NE	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.74	730.0	29.83	757.7	61	16.1	88	NW	8	3.6			10s		Calm	0.74	18.8	Cloudy	
Fort Stevenson, Dakota	28.35	720.1			40	4.4	82	Calm	0	0		2c	0	Calm		0.04	1.0	Clear	
Fort Verde, Arizona					56	13.3	35	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.85	757.7	29.87	758.7	78	25.6	82	SE	4	1.8		2cs	5ks	W	Calm	0	0	Cloudy	
Grand Haven, Michigan	29.28	743.7	29.91	759.7	59	15.0	76	S	8	3.6			10s		Calm	0	0	Cloudy	
Helena, Montana					42	5.6	74	S	2	0.9		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.12	739.6	29.86	758.4	70	21.1	70	S	4	1.8			10s		Calm	0	0	Cloudy	
Indianola, Texas	29.84	757.9	29.86	758.4	74	23.3	90	W	7	3.1		0	8ks		Calm	0.53	13.5	Clearing	
Jacksboro, Texas	8.81	731.8	29.92	760.0	61	16.1	94	SE	2	0.9			10s		Calm	0.55	14.0	Cloudy	
Jacksonville, Florida	30.09	764.3	30.17	765.0	77	25.0	65	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.27	743.4	29.87	758.7	63	17.2	78	N	2	0.9		5k	5s	Calm	Calm	0.18	4.6	Cloudy	
Key West, Florida	9.97	761.2	30.00	762.0	75	23.9	95	E	14	6.3			10n		E	0.82	20.8	Light rain	
Kittyhawk, North Carolina	30.18	766.6	30.20	767.1	72	22.	76	SW	18	8.0		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.08	38.6	30.04	763.0	73	22.8	70	Calm	0	0		2cs	Haze	Calm		0	0	Fair	
La Crosse, Wisconsin	29.18	741.1	29.89	759.2	60	15.6	77	NW	3	1.3			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	61	16.1	40	N	7	3.1		2c	0	Calm		0	0	Fair	
Laredo, Texas																			
Leavenworth, Kansas	29.12	739.6	29.94	760.5	62	16.7	67	N	4	1.8		5k	5s	N	N	0.03	0.8	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.61	752.1	29.92	760.0	70	21.1	90	SW	4	1.8		2c	0	SW		0	0	Fair	
Los Angeles, California	29.48	748.8	29.87	757.4	54	12.2	87	E	2	0.9		0	0			0	0	Clear	
Louisville, Kentucky	29.39	746.5	29.93	760.2	72	22.2	62	S	3	1.3		2c	2s	Calm	Calm	0	0	Fair	
Lynchburg, Virginia	29.41	747.0	30.06	763.5	75	23.9	56	SW	4	1.8		0	Haze			0	0	Clear	
Madison, Wisconsin	28.91	734.3	29.86	758.4	62	16.7	72	W	4	1.8			10s		W	0	0	Cloudy	
Marquette, Michigan	29.32	744.7	30.04	763.0	42	5.6	67	NW	16	7.2			10s		NW	0.03	0.8	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.27	718.0	29.97	761.2	68	20.0	79	E	6	2.7			10s		E	1.15	29.2	Cloudy	
Memphis, Tennessee	29.59	751.6	29.92	760.0	76	24.4	69	S	7	3.1			10s		S	0	0	Cloudy	
Milwaukee, Wisconsin	29.17	740.9	29.87	758.7	63	17.2	62	W	8	3.6			10s		SW	Inap.	Inap.	Cloudy	
Mobile, Alabama	29.96	761 0	30.01	762.2	73	22.8	90	E	6	2.7			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.85	758.2	30.08	764.0	75	23.9	76	SE	7	3.1		2c	0	Calm		0	0	Clear	
Morgantown, West Virginia	29.04	737.6	29.99	761.7	69	20.6	75	E	3	1.3			10s		S	Inap.	Inap.	Cloudy.	
Mt Washington, N H	23.86	606.0	30.22	767.6	47	8.3	100	NW	44	19.7			Fog		NW	0.21	5.3	Foggy	
Nashville, Tennessee	29.48	748.8	30.00	762.0	71	21.7	71	S	1	0.4		8cs	Haze	SW	Calm	0	0	Fair	
New Haven, Connecticut	29.96	761.0	30.07	763.8	59	15.0	94	SE	5	2.2			10s;fg		Calm	0.04	1.0	Cloudy	
New London, Connecticut	30.03	762.7	30.08	764.0	57	13.9	94	SE	6	2.7			Fog			0.02	0.5	Foggy	
New Orleans, Louisiana	29.86	758.4	29.92	760.0	74	23.3	85	SE	12	5.4			10s		SE	0	0	Threatening	
Newport, Rhode Island	30.02	762.5	30.07	763.8	56	13.3	94	S	6	2.7			Fog			0	0	Foggy	
New River, North Carolina					76	24.4	69	S			1	0	0					Clear	
New York, New York	29.92	760.0	30.10	764.5	57	13.9	93	Calm	0	0			Fog		Calm	0	0	Foggy	
Norfolk, Virginia	30.09	764.3	30.15	765.8	77	25.0	73	SW	11	4.9		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.20	690.9	29.79	756.7	47	8.3	77	NW	4	1.8		0	0			0.13	3.3	Clear	
Olympia, Washington Ter	29.83	757.7	29.87	758.7	55.0	12.8	90	SW	14	6.3			10n		S	0.19	4.8	Light rain	
Omaha, Nebraska	28.86	733.0	29.93	760.2	61	16.1	71	SW	6	2.7			10s		Calm	0 01	0.3	Cloudy	
Oswego, New York	29.66	753.4	29.96	761.0	69	20.6	75	S	3	1.3		Haze	Sm'e			0	0	Hazy	
Pembina, Dakota	29.32	744.7	30.17	766.3	36	2.2	90	NE	8	3.6		0	0			0	0	Clear	
Pensacola, Florida	30.01	762.2	30.04	763.0	76	24.4	77	E	12	5.4		8cs;k	0	Calm;SE		0	0	Fair	
Philadelphia, Pennsylvania	30.04	763.0	30.09	764.3	60	15.6	88	E	3	1.3			10s		Calm	0	0	Cloudy	
Phœnix, Arizona	28.65	727.7	30.35	770.9	80	26.7	25	E	5	2.2		0	0			0	0	Clear	
Pike's Peak, Colorado	17.83	452.9	30.04	763.0	15	— 9.4	82	N	4	1.8			10ks		Calm	0.43	10.9	Cloudy	
Pilot Point, Texas	29.13	739.9	29.96	761.0	63	17.2	94	W	6	2.7			10s		W	Inap.	Inap.	Cloudy	
Pioche, Nevada	24.08	611.6	29.85	758.2	51	10.6	34	Calm	0	0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.02	762.5	66	18.9	74	S	14	6.3		8k	0	S		0	0	Clearing	
Port Huron, Michigan	29.26	743.2	29.90	759.4	64	17.8	63	W	1	0.4		8c	Haze	W		0.12	3.0	Fair	
Portland, Maine	29.98	761.5	30.03	762.7	59	15.0	82	S	4	1.8			10s;fg		Calm	0	0	Cloudy	
Portland, Oregon	29.90	759.4	29.97	761.2	57	13.9	81	S	9	4.0		Haze	8s	Calm	SW	0.14	3.6	Cloudy	
Portsmouth, North Carolina					74	23.3	72	SW	8	3.6		5k;cs	0	Calm		0	0	Fair	
Prescott, Arizona	24.73	628.1	30.09	764.3	46	7.8	40	SW	2	0.9		10cs	0	W		0	0	Cloudy	
Punta Rassa, Florida	30.00	762.0	30.01	762.2	77	25.0	73	E	14	6.3		8ck	1ks	SW	E	0	0	Cloudy	
Red Bluff, California	29.61	752.1	29.96	761.0	62.0	16.7	72	NW	2	0.9		0	0			0	0	Clear	
Rio Grande City, Texas	29.64	752.8	29.85	758.2	77	25.0	86	E	10	4.5			10s		SE	0	0	Cloudy	
Rochester, New York	29.33	745.0	29.92	760.0	69	20.6	65	SW	4	1.8		5c	Haze	Calm	Calm	0	0	Fair	
Roseburg, Oregon	29.47	748.5	30.03	762.7	56.5	13.6	87	E	1	0.4			10ks		SW	Inap.	Inap.	Cloudy	
Sacramento, California	29.87	758.7	29.95	760.7	57	13.9	87	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.30	744.2	29.85	758.2	66	18.9	89	S	9	4.0			10s		S	0.08	2.0	Cloudy	
St. Paul, Minnesota	29.17	740.9	29.99	761.7	50	10.0	72	NW	14	6.3		2ck	0	NW		0	0	Clear	
Salt Lake City, Utah	25.69	652.5	30.02	762.5	53	11.7	42	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.16	740.7	29.84	757.9	70	21.1	85	S	2	0.9		10cs	0	NE		0	0	Cloudy	
San Diego, California	29.78	756.4	29.85	758.2	58	14.4	94	SE	3	1.3			Fog		SE	0	0	Foggy	
Sandusky, Ohio	29.28	743.7	29.92	760.0	70	21.1	70	E	6	2.7		10k	0	SW		0	0	Cloudy	
Sandy Hook, New Jersey	30.04	763.0	30.07	763.8	55	12.8	100	Calm	0	0			Fog		Calm	0.03	0.8	Dense fog	
San Francisco, California	29.96	761.0	30.03	762 7	53	11.7	86	W	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.34	592.8	29.88	758.9	43	6.1	59	N	4	1.8		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.06	763.5	30.16	766.1	80	26.7	70	SE	5	2.2		2k	Haze	SE	Calm	0	0	Fair	
Shreveport, Louisiana	29.69	754.1	29.96	759.4	68	20.0	84	SE	5	2.2		0	5s		Calm	0.21	5.3	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.16	766.1	30.20	767.1	75	23.9	77	S	8	3.6		5k	0	S		0	0	Fair	
Socorro, New Mexico	25.45	646.4	29.52	749.8	58	14.4	42	NW	9	4.0		0	0			0	0	Clear	
Springfield, Illinois	29.23	742.4	29.88	758.9	61	16.1	88	N	7	3.1			10n		NW	0.86	21.8	Light rain	
Springfield, Massachusetts	29.94	760.5	30.06	763.5	61	16.1	82	S	2	0.9			10s		SW	0.02	0.5	Cloudy	
Stockton, Texas	26.91	683.5	29.91	759.7	66	18.9	79	SE	16	7.2		0	8s		SE	0	0	Fair	
Thatcher's Island, Mass	30.00	762.0	30.06	763.5	60	15.6	88	S	14	6.3			Fog			0	0	Dense fog	
Toledo, Ohio	29.21	741.9	29.86	758.4	68	20.0	65	SE	5	2.2			10s		S	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.40	696.0	29.95	760.7	70	21.1	36	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.57	751.1	30.05	763.3	59	15.0	88	W	8	3.6			10n		SW	0.04	1.0	Light rain	
Uvalde, Texas	28.94	735.1	29 73	755.1	70	21.1	75	Calm	0	0		10cs	0	Calm		0	0	Cloudy	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	69	20.6	95	SE	5	2.2		2k	5s	S	SE	0.13	3.3	Fair	
Virginia City, Montana	24.32	617.7	29.80	756.9	41	5.0	65	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.53	750.0	29.89	759.2	58.5	14.7	85	W	1	0.4		0	0			0	0	Clear	
Washington, D. C	29.96	761.0	30.07	763.8	75	23.9	64	S	6	2.7		0	Haze		Calm	0	0	Clear	
Wickenburg, Arizona					61	16.1	40	NW			1	1c	0	Calm		0	0	Clear	
Wilmington, North Carolina	30.11	764.8	30.19	766.8	73	22.8	76	S	8	3.6		5ck	0	SW		0	0	Fair	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	49	9 4	57	Calm	0	0		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.03	762.7	30.07	763.8	56	13.3	94	SW	12	5.4			Fog		SW	0	0	Foggy	
Yankton, Dakota	28.80	731.5	30.09	764.3	52	11.1	79	N	9	4.0		0	0			0	0	Clear	
Yuma, Arizona	29.57	751.1	29. 1	754.6	66	18.9	50	Calm	0	0		5c	0	Calm		0	0	Fair	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			56.0	13.3	74	Calm	0	0		8cs;k	2ks			0.32	8.1	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.97	761.2	30.02	762.5	77	25.0	82	Calm	0	0		8cs	0	Calm		0.06	1.5	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.97	761.2	29.98	761.5	79	26.1	83	Calm	0	0		8c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	78.5	25.8	86	E	4	1.8		2k	5s	NE	E	1.82	46.2	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.97	761.2	29.96	761.0	78	25.6	91	E			3		8ks	E		0.300	7.62	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Colⁿbia‖	29.96	761.0	30.00	762.0	84	28.9	81	Calm			0		10ks			0.35	8.9		Francesco J. Cisneros
Rivas, Nicaragua	29.45	748.0			75	24		W				1c	2k		W	0	0	Fair	Carl Flint.
Santiago de Cuba, W. I					76	24.4	86	Calm	0	0		8c		Calm		0	0		Robert Mason
St. Thomas, W. I	29.95	760.7	29.98	761.5															G. O. Gellich.
York Factory, B. A	29.91	759.7	29.96	761.0	21.0	— 6.1	93	NW	10	4.5			9s		NW	0	0	Threatening	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 milimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.07	763.8	78	25.6	73	E	18	8.0			5d		SE	0.42	10.7			Fair	
§ Navy Yard, Portsmouth, N. H.	30.04	763.0	58	14.4	94	Calm	0	0			10							Light rain	
Naval Hospital, Yokohama, Japan	30.12	765.0	63.5	17.5	81	S			1		0			0	0			Clear	
§ Adams, Punta Arenas, Costa Rica	29.91	759.7	78	25.6	91	NNW			1		5		NW					Fair	
§ Alaska, Ancon, Peru *	29.96	761 0	63	17.2	83	Calm			0		10					Smooth		Misty	
§ Alert, N. 31° 35′, E. 139° 21′	30.01	762.2	69	20.6	75	ENE			6		2		ENE			Long heavy	ENE	Clear	
Alliance, Norfolk, Va.	30.15	765.8	72	22.2	76	SSW			1		0			0	0			Clear	
§ Ashuelot, Shanghai, China	29.93	760 2	66	18.9	68	N			5		10							Cloudy	
Colorado, New York, N. Y.	30.08	764 0	57	13.9	100	Calm	0	0			10			0	0			Foggy	
§ Constitution, New York, N. Y.	30.06	763.5	59	15.0	88	Calm	0	0			Fog		Calm					Foggy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.16	766.1	71	21.7	80	SW	10.8	4.8			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.02	762.5	56	13.3	??	SW	2.4	1.1			3		SW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.44	747.8	46	7.8		WNW			2		10					Smooth		Cloudy	
Kearsarge, Boca del Toro, Chiriqui	29.92	760.0	80	26.7	82	SW			2		5		NE			Smooth		Cloudy	
§ Lackawana, N. 19° 07′, W. 104° 41′ †	29.99	761.7	79	26.1	78	S			2		10		S			Smooth	S	Cloudy	
§ Marion, S. 37° 46′, W. 56° 03′	30.07	763.8	49	9.4	71	SSE			5		8			0	0	Mod'ate	S	Fair	
§ Michigan, Erie, Pa.	29.87	758.7	67	19.4	79	SW			1		8		SW					Cloudy	
§ Monocacy, Shanghai, China	29.91	759.7	72	22.2	62	N			3		10							Overcast	
§ New Hampshire, Port Royal, S. C.	30.14	765.5	76	24.4	77	SSE	9	4.0			1		S	0	0			Clear	
Nipsic, Villafranca, France	29.87	758.7	64	17.8	48	SE			1		8					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	29.97	761.2	63	17.2	94	Calm			0		10					Long	W	Misty	
§ Palos, Shanghai, China	29.91	759.7	66	18.9	89	NNW			2		10							Overcast	
§ Passaic, Washington, D. C.	30.02	762.5	75	23.9	72	SSW			3		0			0	0			Clear	
§ Pensacola, Vallejo, Cal.	29.97	761.2	57	13.9	87	SW			2		0					Smooth		Hazy	
§ Portsmouth, N. 35° 25′, W. 73° 19′	30.21	767.3	72	22.2	85	SW			5		2		SW	0	0	Mod'ate	SSW	Clear	
§ Powhatan, Annapolis, Md.	30.03	762.7	73	22.8	72	W			2		0							Clear	
§ Quinnebaug, N. 41° 39′, W. 16° 53′	30.23	767.8	58	14.4	76	ENE			6		10		E			Mod'ate	E	Cloudy	
§ Richmond, Shanghai, China	29.91	759.7	68	20.0	90	NNW			4		10		NW					Overcast	
§ Rio Bravo, Brownsville, Texas †	30.06	763.5	75	23.9	95	Calm	0	0			5		Calm	0	0			Fair	
§ Saratoga, Lisbon Portugal	30.01	762.2	64	17.8	62	E			1		8		E	0	0			Cloudy	
§ Shenandoah, Montevideo, Uruguay	30.10	764.5	52	11.1	73	SSW			4		8		SW			Mod'ate	S	Fair	
§ St. Louis, League Island, Pa.	30.06	763.5	60	15.6	88	ENE	4	1.8			10			0	0			Foggy	
Swatara, N. 6° 32′, E. 102° 45′ †	29.83	757.7	84	28.9	91	SE			2		8		SE			Smooth		Fair	
§ Tennessee, N. 16° 48′, W. 82° 07′	29.95	760.7	82	27.8	83	E	4	1.8			10		ENE	0	0	Mod'ate	W;E	Cloudy	
Ticonderoga, Yokohama, Japan	30.13	765.3	68	20.0	90	SSE			2		0					Smooth		Clear	
§ Trenton, Messina Channel	29.78	756.4	66	18.9	79	WSW			3		2			0	0	None		Fair	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.08	764.0	59	15.0	88	Calm			0									Foggy	
§ Wabash, Boston, Mass.	30.02	762.5	65	18.3	78	SW	4	1.8			8			0	0			Cloudy	
§ Wachusett, S. 41° 40′, W. 61° 49′	30.16	766.1	46	7.8	77	ESE			4		2		E	0	0	Long Mod'ate	S;E	Fair	
Wyoming, N. 43° 40′, E. 7° 50′	29.88	758.9	62	16.7	77	NNE			4		2		NE			Mod'ate	NE	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 47° 10', W. 52° 45'	30.34	770.6	38	3.3		SSW			5		8		SW			Smooth	SW	Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth,
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 46° 45', W. 26° 55'...*†	30.47	773.9	61	16.1	94	SSE			2		2		SE	0	0	Small	SE	Fair	
S. S. Pennsylvania, Geo. H. Dodge																			Wm. Shackford. Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
‡S. S. Newbern, W. Metzger, N. 31° 42', W. 117° 02'....†	29.87	758.7	56	13.3	100	NNW			2		10		NNW	0	0	Gentle	WNW	Foggy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 51° 13', W. 14° 13'.....*	30.24	768.1	67	19.4	50	Calm			0		0			0	0	Smooth		Clear.	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
s. s. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
s. s. Strasburg, O. Helmbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
‡S. S. Belgic, L. Meyer, Hong-Kong, China....†	29.83	757.4	79	26.1	91	NW			2		10		NW					Overcast	D. A. Joyce.
‡S. S. Gaelic, W. H. Kidley, San Francisco, Cal.....†	30.02	762.5	55	12.8	87	NW			4		ks		NW	0	0	Smooth		Misty	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
s. s. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
‡S. S. Ancon, E. Alexander, N. 36° 04', W. 121° 38'....†	29.92	760.0	54	12.2		NW			8		0					Heavy	NW	Clear	
‡S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
‡s. s. State of California, G. Debney, San Francisco, Cal.....†	30.01	762.2	46	7.8		NW			3		5		NW					Light fog	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acapulco, Mexico.....†	29.80	756.9	79	26.1	??	SSW			1		5		WNW			Light	SSW	Fair	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury, N. 29° 45' W. 116° 34'....†	29.77	756.1	59	15.0	82	NW			3		10		NW			Mod'ate	NW	Cloudy	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, N. 15° 10'. W. 161° 20'....†	29.97	761.2	76	24.4	91	ENE			4		8		NE	0	0	Large	NE	Squally	W. H. Hawes.
§ S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 34° 50'. E. 161° 08'.....†	30.14	765.5	57	13.9	63	NW			3		8		NW			Mod'ate	NNW	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn, Sydney, N. S. W.....*†	29.76	755.9	64	17.8		W			4		2		W	0	0	Smooth		Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury, N. 45° 44'. E. 168° 20'.....†	29.80	756.9	45	7.2	76	ENE			6		8		ENE	Blank	Blank	Heavy	E	Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 17° 03', W. 100° 45'....†	29.90	759.4	82	27.8	96	WNW			2		5		WNW	0	0	Mod'ate	SW	Fair	
§ S. S. Dakota, D. E. Griffiths, Esquimau t. Vancouver's Pd....†	29.77	756.1	55	12.8	57	Calm			0		5		NW	0	0			Fair	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly, N. 14° 42' W. 94° 36'.....†	29.93	760.2	80	26.7	96	E			2		5ks		E	Very Light	Very Light	Light	SSW	Thunder-storm	
§ S. S. Idaho, San Francisco, Cal.....†			53	11.7		Calm			0		0							Clear	
§ S. S. Zalandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			H. N. Goulden.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Glendell, N. 40° 23'. W. 67° 22'....*†	30.18	766.6	51	10.6		SW			4		5		W	0	0	Smooth		Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.10	764.5	58	14.4		SSW			5		10		SW	0.03	0.8			Clearing	Mehaffey.
Schr. Adonis Fuller, J. Jorgensen, Satilla river, Georgia....	30.14	765.5	75	23.9	77	Calm	0	0			0			0	0			Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis, N. 21° 48'. W. 61° 50'.....†	30.04	763.0	83	28.3		ESE			3		8		SE	Heavy	Heavy	Mod'ate	NE	Cloudy	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 35° 45'. E. 20° 00'.....*†	30.14	765.5	68	20.0		E			2		2		E	0	0	Long	WSW	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin, Monabo, P rto Rico....†	30.15	765.8	76	24.4		SE			1		10			Heavy	Heavy	Smooth		Rainy	
Hippolyta																			
Iron Cross, W. Randall,																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

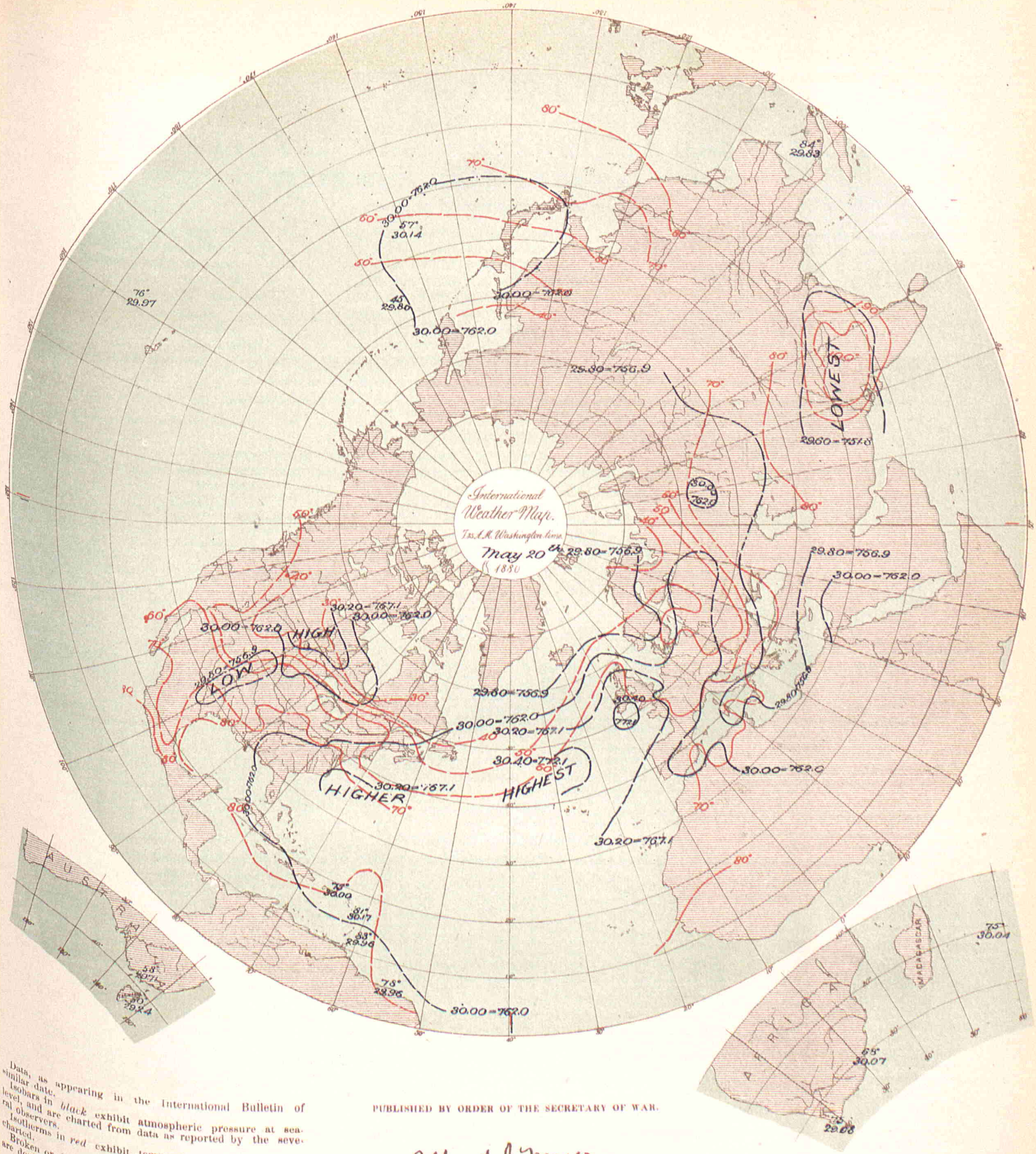
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto. pallio. haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

R. C. Drum
Adjutant General, and
Acting Chief Signal Officer of the Army.



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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

The Heliotype Printing Co. 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 21, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.19	766.9				SW			4		4			0	0	Cloudy	Dr. Ollive.
Nemours			30.20	767.1	71.1	21.7	82	Calm			0		0			0.102	2.6	Clear	Metge.
Algiers			30.19	766.9	66.6	19.2	73	N			4		0			0	0		Nicolas.
La Calle			30.10	764.6	67.1	19.5	81	NNW			4		4			0.043	1.1	Cloudy	Fonfrède.
Tunis			30.03	762.7															Jacques.
Sfax			30.14	765.5															Gau.
Saida			30.20	767.1															Bernard.
Tebessa			30.09	764.2	55.8	13.2	40	N			4		6			0.126	3.2	Cloudy	Watrin.
Geriville					61.7	16.5	91	NNW			2		6			0	0	Cloudy	Brugniaux.
Laghouat			30.15	765.7	69.4	20.8	29	NNW			2		2			0	0	Fair	Suart.
Biskra			30.07	763.8	81.0	27.2	46	WNW			2		4			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.45	748.1	30.00	761.9	59.5	15.3	43	E			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.21	741.8	29.98	761.4	51.8	11.0	41	SW	2.2	1.0			1			0	0		Dr. Wierzbicki.
Eperies	29.08	738.5	29.96	760.9	52.5	11.4	50	NE			2	2c		S		0	0		Julius Mikolik.
Gratz	28.76	730.5	30.01	762.2	55.8	13.2	60	SSE			3		4			0	0		Andreas Rospini.
Hermannstadt	28.50	724.0	29.95	760.7	48.9	9.4	71	WNW			2		10			0.016	0.40	Rainy	Prof. A. Gottschling
Kremsmünster, Observatory	28.68	728.4	30.02	762.5	52.5	11.4	68	W			2		10			0	0		The Staff.
Lemberg	28.95	735.3	29.94	760.5	50.0	10.0	62	NW			2		7			0	0		Dr. T. Stanecki.
Polt	29.87	758.8	29.98	761.6	60.4	15.8	32	ENE			3		0			0	0		I.R.Hydrographic Office.
Szathmar	29.50	749.4	29.97	761.1	58.6	14.8	22	N			2		7			0	0		Pet. Pancsics, S. J.
Szegedin	29.69	754.0	29.97	761.2	54.3	12.4	46	N			1		6			0	0		Karl Stancel.
Trieste	29.90	759.5	30.00	762.1	63.8	17.4	51	NW			1		4			0	0		P. Busin.
Vienna	29.29	744.0	30.04	763.1	55.2	12.9	54	W			4		8			0.012	0.3		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather [illegible] he Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 20, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.94	760.5	30.03	762.7	59.0	15.0		NW	13	5.8			6			0.10	0.25	D. clouds	W. Boswell.
Ardrossan	30.14	765.5	30.16	766.1	52	11.1		WNW			4		7					D. clouds	G.Carrick.
Armagh, (Observatory)	30.03	762.7	30.26	768.6	55.8	13.2		W	5	2.2			10					Overcast	S. Call.
Bidston (Liverpool Obs)			30.22	767.6	54.4	12.4		W	25	11.2			9					Overcast	John Hartnup.
Bolton (Sharples)	29.65	753.1	30.17	766.3	57.5	14.2		WNW	12	5.4			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.76	755.9	30.15	765.8	61.9	16.6	62	SW			3		6			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.95	760.7	29.98	761.5	82	27.8		NE			2		6					Gloomy	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	30.07	763.8	30.16	766.1	73.5	23.1		NW			1		7					Misty	H. Todd.
Cardington			30.16	766.1	74.0	23.3		NW			1		4					D. clouds	John McLaren.
Chatham (School M. E.)	30.04	763.0	30.17	766.3	70.9	21.6		Calm			0	5c						D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.19	766.8	30.23	767.8	56	13.3		NW			2		8					D. clouds	J. Mac Gowan.
Dover	30.15	765.8	30.18	766.6	57	13.9		WSW			2		5					Misty	J. Costello.
Falmouth (Observatory)	30.11	764.8	30.33	770.4	63.5	17.5		NW			2		4					D. clouds	The Staff.
Fort Napier, Natal	27.82	706.6	30.03	762.7	71.4	21.9		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.68	753.9	29.90	759.4	87	30.6		Calm			0		10					Drizzling	
Galway (Queen's College)			30.24	768.1	60	15.6		N			4		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.14	765.5	30.20	767.1	70.8	21.6		NE			3		4					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.93	760.2	30.13	765.3	55.4	13.0		W			4		7k					D. clouds	D. G. Maclean.
Great Yarmouth	30.15	765.8	30.16	766.1	63	17.2		N			3		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	30.09	762.0	30.17	766.3	74.3	23.5		NW			1		6					D. clouds	The Staff, for G.B.Airy.
Guernsey	30.06	763.5	30.28	769.1	64.5	18.1		NW			2		0					Blue sky	Dr.S.E Hoskins, F.R.S.
Helston	30.44	773.2	30.60	777.2	63	17.2		W			6		0			0	0	Very fine	M. P. Moyle.
Holyhead	30.23	767.8	30.27	768.8	56	13.3		NW			3		4					D. clouds	John Tilston.
Jersey	30.03	762.7	30.32	770.1	64.3	17.9		NW			2		2					Misty	J. Fisher.
Kew (Observatory)	30.15	765.8	30.18	766.6	70.7	21.5		WNW	13	5.8			6					Threatening	The Met'g'l Office.
Leicester (Museum)	29.94	760.5	30.19	766.8	65.7	18.7		NW			1		5					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.82	757.4	29.89	759.2	68	20.0		NW			2		2					Blue sky	A. King.
Nairn	29.95	760.7	30.04	763.0	59	15.0		W			4		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.05	763.3	79.5	26.4		SE			2		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.03	762.7	30.22	767.6	70.2	21.2		W			2	5c		W		0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.68	753.9	30.19	766.8	67.1	19.5		NW			3-4		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.96	761.0	30.22	767.6	71	21.7		NW			3		7					D. clouds	The Staff, for E. J. Stone, M.A.
Plymouth	30.20	767.1	30.28	769.1	75.0	23.9		NW			2		7					D. clouds	John Merrifield.
*Roche's Point	30.25	768.3	30.38	771.6	64	17.8		SW			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	30.14	765.5	30.30	769.6	53	11.7		NW			2		4					Misty	John C. Walker.
Sandwick Manse, Orkneys			29.96	761.0	51.1	10.6		W	31	13.9			0					Blue sky	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.75	755.6	29.82	757.4	56.2	13.4		NE			2		10					Raining	Serg't W. H. Lyne.
Sheffield	30.12	765.0	30.40	772.1	59.7	15.4		W			3		9			Blank	Blank	Overcast	W. F. Cooper.
Silloth Rectory	30.12	765.0	30.16	766.1	62.6	17.0	61	SW			4		4			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.19	766.8	56.7	13.7		W	16	7.2			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	30.01	762.2	30.23	767.8	74.3	23.5		W			3		3					Squally	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.32	770.1	30.33	770.4	65	18.3		NW			6		4					D. clouds	W. Newcombe.
Valencia (Observatory)	30.34	770.6	30.36	771.1	60.3	15.7		SW	20	8.9			2					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.99	761.7	30.03	762.7	64.2	17.9	76	NNW	3.5	1.6		0	10			0	0		The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.32	744.7	56.0	13.3	82	N			2		10k			0.03	0.8	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.08	764.0	62.0	16.7		W			6		4k			0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.87	758.7	30.06	763.5	75.5	24.2	70	ENE	7.9	3.1		2	6		SW	0.05	1.3	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.62	752.3	29.71	754.6	60.0	15.6	70	NNW	15	6.7			9			0.06	1.5	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.99	761.7	56	13.3		SW			4		10			0	0		J. Youngclause.
North Unst, Shetland I's			29.73	755.1				W			7		7			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Direction from	Weather.	Observer.
H. M. S. Alert,				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Sommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma,				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Algoa Bay, Cape Colony			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra,				Capt. W. P. Hughes.
S. S. Strathleven,				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
San José	26.18	665.0	29.90	759.4	71.2	21.8	91	SE			1	9ck;cs				0.31	8.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.78	756.5	29.83	757.7	59.2	15.1	50	NW			2		4						
Fanöe	29.94	760.5	29.96	761.0	51.6	10.9	83	W			4		10					Raining	
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.71	754.5	29.75	755.6	44.2	6.8	66	SW			6		8						
Thorshavn (Faröe)	29.74	755.5	29.78	756.4	42.4	5.8	87	NNW			5		8						
Vestervig	29.77	756.1	29.86	758.5	52.2	11.2	81	W			6		8						

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

FRENCH SERIES.

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

Alençon, Normal School	29.58	751.2	30.13	765.2	73.4	23	37	N			1		8n		NE	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	30.12	765.0	30.23	767.7	69.8	21	54	N			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.95	760.8	30.21	767.2	63.7	17.6	59	NW			3		9k		NW	0	0		Klein, Commandant.
Avignon, Normal School	29.97	761.2	30.05	763.2	71.1	21.7	38	N			3		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.65	753.2	30.21	767.2	62.1	16.7	44	NE			1		5n		NE	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.97	761.1	30.23	767.8	65.7	18.7	55	N			2		5		N	0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.22	742.2	30.10	764.4	65.3	18.5	45	ESE			1		5		NE	0	0	Cloudy	A. Carré, Director.
Bordeaux	30.05	763.3	30.25	768.3	70.3	21.3	36	NE			1		2		N	0	0	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.29	743.9	30.21	767.4	64.4	18	50	N			3		5cn	N	N	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.71	754.7	30.26	768.6	60.4	15.8	48	N			1	2c			N	0	0	Slightly cld'y	M. Gence, Director.
Brest, Naval Observatory	30.09	764.2	30.33	770.4	68.4	20.2	58	N			1		1		N	0	0		Ch. de Rermaree, Dir
Caen, Normal School	30.11	764.9	30.19	766.8	65.3	18.5	94	W					2		W	0	0	Slightly cld'y	M. Bietrix, Director.
Carcassonne, N. School	29.72	754.8	30.12	765.0	68.0	20	46	W			2		2		WNW	0	0	Slightly cl'dy	September, Director.
Châlons-sur-Marne, N. Sch	29.91	759.7	30.23	767.8	63.0	17.2	54	NW			1		2			0	0	Slightly cl'dy	Jadot, Director
Chartres, Normal School	29.63	752.7	30.20	767.0	66.2	19	98	N			1		5		S	0	0	Cloudy	E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.84	732.4	30.19	766.7	58.6	14.8	60	N			1		2		N	0	0		Alluard, Director.
Commercy, Normal School	29.32	744.8	30.18	766.5	61.2	16.2	42	NW			3	2ck			NW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.55	735.4	30.10	764.4	63.1	17.3	41	NW			3		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.32	744.7	30.07	763.8	66.2	19.0	60	NW			2		k		SW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch	30.10	764.4	30.30	769.7	71.2	21.8	68	NNW			1		2		NNW	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.97	761.3	30.28	769.0	67.5	19.7	55	N			2		5		N	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. Schoo	29.27	743.4	30.18	766.6	60.6	15.9	68	N			2		2k	N	S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	30.21	767.4	30.32	770.2	72.3	22.4	55	WSW			3		5		NW	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.54	750.2	30.15	765.7	64.6	18.1	46	N			3		1n		NW	0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.76	756.0	30.03	762.8	67.8	19.9	34	W			1		1		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.11	739.5	30.15	765.9	59.9	15.5	55	NE			1		kn		NE	0	0		Barbier, Director.
Mont-Louis	24.94	633.5	30.18	766.5	50.0	10.0	47	N	18.6	8.3			0			0	0		M. Cave, for Dr. Fines.
Nice	30.00	762.1	30.04	763.0	66.6	19.2	61	S			2		1	S	S	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.85	758.2	30.05	763.3	70.0	21.1	28	NW			3		2		W	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	30.01	762.3	30.12	765.0	67.6	19.8	41	NW	26.2	11.7			6		WNW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.67	575.9			37.9	3.3							1	SSW	NNE	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.04	737.6	30.08	764.1	65.3	18.5	41	W			1		2s	W	W	0	0	Slightly cl'dy	M. Tallieu
Puy de Dome (Summit) Ob	25.29	642.3			49.1	4.5	81	N			2		2		N	0	0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.29	769.3	30.34	770.1	73.8	23.2	53	NNW			1		8	N	N	0	0	¾ covered	Lt E. Devante, Director
Rouen, Normal School	30.15	765.9	30.24	768.1	68.0	20.0	57	W			1		8		NNW	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.23	767.8	30.26	768.6	63.0	17.2	62	W			3		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.08	764.0	30.24	768.2	65.5	18.6	43	N			2		1	N	N	0	0	Slightly cld'y	E. Renou, Director.
Tarbes, Normal School	29.17	740.9	30.23	767.9	68.0	20	47	W											T. Huguet, Director
Toulouse, Observatory	29.55	750.5	30.28	769.0	64.9	18.3	42	NW			6		2			0	0	Slightly cld'y	B. Bailland, Dir.
Tours	30.07	763.6	30.26	768.6	68.9	20.0	46	NE			1		2		N	0	0	¼ covered	M. de Tastes.
Versailles, Observatory	29.75	755.6	30.24	768.1	65.5	18.6	46	NE			2		5			0	0	Fair	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.32	744.8	30.02	762.5	64.8	18.2	70	NNW			3		5		NE	0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.17	766.3	30.20	767.0	80.6	27										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.96	761.0			64.2	17.9	48	NW			1		7		N	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.91	759.6	29.93	760.3	60.4	15.8	70	WSW	5.6	2.5		4c				0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.22	742.1	30.08	764.1	58.5	14.7	49	NW			6		6k	W		0	0		Prof. Dr. Hoh.
Berlin	29.78	756.5	29.96	760.9	54.1	12.3	65	NW			2		10			0	0		Prof. Dr. Arndt.
Breslau	29.45	748.1	29.98	761.6	55.8	13.2	38	W			3		9			0	0		Royal University Obs'y
Carlsruhe	29.68	753.8	30.10	764.6	60.4	15.8	63	NE			0		5	NW		0	0		Albert Senz.
Cassel	29.48	748.8	30.09	764.3	57.6	14.2	43	WNW			3		5	NW		0.006	0.16		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.82	757.5	30.19	766.8	61.7	16.5	34	N			1		8			Inap.	Inap.		Physical Society.
Friedrichshafen	28.70	729.0	30.13	765.3	57.9	14.4	52	SW			3		5	WNW		0.020	0.5		Chief Telegrapher Wilhelm.
Hamburg	29.94	760.5	30.01	762.3	54.5	12.5	70	NW			5		8			0	0		Dr. Reinhold Kleeman.
Kiel	29.94	760.5	29.96	760.9	55.8	13.2	56	WNW			6		6			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.83	757.6	29.91	759.7	53.2	11.8	39	W			5		5	N		0	0		Prof. E. Luther.
Köslin			29.87	758.7	55.9	13.3		NW			4		4			0	0		H. Müller.
Leipsic Observatory	29.65	753.0	30.07	763.7	52.7	11.5	58	W			3		10	W		0.067	1.7		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.81	757.2	30.04	763.0	54.3	12.4	74	WNW			4		10ks	WNW		0.008	0.2		Dr. Assmann.
Memel	29.86	758.4	29.91	759.6	50.0	10.0	79	SW			0-1		10cs						Reinbrecht & Issermann
Munich	28.26	717.7	30.12	765.1	56.5	13.6	45	SW			4		8	NE	SW	0	0	Squally	Dr. C. Lang.
Neufahrwasser	29.85	758.1	29.86	758.5	59.9	15.5	43	SSW			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.59	751.5	30.11	764.9	62.4	16.9	29	NW			3		7	W		0	0		Reallehrer Dicknether.
Posen	29.63	752.5	29.91	759.8	59.2	15.1	49	W			4		10			0.002	0.05		Prof. Dr. Magener.
Strassburg (in Alsace)	29.61	752.0	30.15	765.8	63.1	17.2	47	NNW			3		5	W		0	0		Imp. University Observatory.
Stuttgart	29.14	740.2	30.03	762.7	59.0	15.0	53	N					5	W		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.58	725.8	30.16	766.0	57.7	14.3	67	NW	2.2	1.0			8k		NW	0.008	0.2		Reallehrer J. Hopfner.
Wustrow	29.91	759.6	29.93	760.2	53.6	12.0	79	WSW			4		10s			0.091	2.3		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.43	747.6	29.82	757.4	69.1	20.6		SW			6.0		10					Covered	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.59	751.6	29.64	752.8	87.0	30.6	72	SSW					0			0	0	Blue sky	
Deesa	29.14	740.0	29.58	751.4	102.0	38.9	19	W	17.3	7.7			0			0	0	Misty	
Bombay	29.72	754.5	29.75	755.7	87.4	30.8	68	W	11	4.9			3		W	0	0	D. clouds	
Poona (Yarrowda)	27.88	708.2	29.70	754.4	87.3	30.7	39	WNW	27	12.1			2		SSW	0	0	D. clouds	
Belgaum	27.23	691.6	29.74	755.4	79.4	26.3	69	W	11	4.9			8	NE	W	0	0	D clouds	
Lahore	28.80	731.4	29.50	749.2	103.3	39.6	17	Calm	1.0	0.4			0			0	0	Misty	
Roorkee	28.68	728.4	29.54	750.2	97.9	36.6	25	SE	3	1.3			8			0	0	Sultry	
Agra	29.03	737.4	29.58	751.2	97.6	36.4	26	NW	4.7	2.1			0			0	0		
Nagpur	28.54	725.0	29.54	750.2	102.8	39.3	20	NW	5.1	2.3			8		W	0	0	D. clouds	
Jubbulpore	28.23	717.1	29.54	750.3	99.7	37.6	19	N	5.4	2.4			4			0	0	D. clouds	
Lucknow	29.20	741.7	29.56	750.9	94.7	34.8	29	NNW	2.9	1.3			5	E		0	0	D. clouds	
Allahabad	29.22	742.1	29.52	749.7	99.8	37.7	34	NNE	1.8	0.8			0			0	0	Blue sky	
Patna	29.37	746.1	29.55	750.5	96.6	35.9	39	NNE	1.7	0.8			6	NNE	NNE	0	0	D. clouds	
Hazaribagh	27.60	701.0	29.57	751.2	83.8	28.8	45	SE	10.5	4.7			8	S	W	0	0	Thunder	
Cuttack	29.52	749.8	29.60	751.9	91.3	32.9	52	S	2.3	1.0			3			0	0	D. clouds	
Calcutta (Alipore)	29.57	751.1	29.59	751.6	90.8	32.7	57	SSW	8.0	3.6			3			0	0	D. clouds	
Goalpara	29.20	741.8	29.60	752.0	84.1	28.9	72	Calm	4.7	2.1			0			1.35	34.3	Blue sky	
Chittagong	29.59	751.5	29.68	753.7	85.2	29.6	78	S	5.5	2.5			0			0	0		
Sibsagar	29.35	745.5	29.68	754.0	81.7	27.6	77	SSW	1.7	0.8			10	W	W	0.30	7.6	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.59	751.6	30.00	761.9	64.8	18.2	25	S	2.5	1.1			1			0	0		Prof. Giovanni Clodig.
Milan	29.51	749.5	30.02	762.5	62.8	17.1	44	SSE	3.8	1.7			1			0	0		Prof. Schiaparelli.
Padua	29.93	760.1	30.03	762.8	59.0	15.0	36	NW	3.1	1.4			0			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.10	739.1	29.99	761.8	61.9	16.6	86	S	3.1	1.4			1			0	0		Prof. P. F. Denza.
Genoa	29.32	757.4	30.01	762.2	65.8	18.8	31	NW	6.9	3.1			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.13	714.5	30.01	762.2	58.1	14.5	35	NW			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.99	761.7	30.04	762.9	56.3	13.5	42	NNE	18.6	8.3			3	NE		0	0		Prof. Luigi Guidi.
Florence	29.73	755.2	29.98	761.6	59.9	15.5	28	NNE			8		0			0	0		Cav. F. Meucci.
Leghorn	29.95	760.8	30.04	762.9	62.1	16.7	27	ENE	11.9	5.3			0			0	0		Prof. P. Monte.
Rome	29.70	754.4	29.87	758.8	64.6	18.1	48	N	11.2	5.0			10			0.173	4.4		Prof. P. S. Ferrari
Lecce	29.57	751.1	29.82	757.4	56.8	13.8	89	NNE	5.6	2.5			10	N		0.354	9.0		Prof. C. De Giorgi.
Cosenza	28.95	735.2	29.82	757.5	64.4	18.0	71	NW	0.7	0.3			10			0.453	11.5		Prof. D. Ct i.
Cagliari	29.75	755.6	29.94	760.5	62.6	17.0	45	NW			2		7	NNW		0.501	12.7		Prof. A. Pacinotti.
Palermo	29.68	753.8	29.93	760.3	60.1	15.6	54	NW	4.9	2.2			9			0.130	3.3		Prof. G. Ciacciatore.
Syracuse	29.75	755.6	29.79	756.7	70.2	21.2	52	NNE	7.4	3.3			9	WSW		0.020	0.5		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.35	745.4	29.87	758.6	59.9	15.5	58	NE	1.3	0.6			7	N		0.094	2.4		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					57.5	14.2	74	N	4.8	2.2			0			1.250	31.75	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.67	753.6	29.88	758.9	58.4	14.7	79	NW	0.7	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.86	758.4	29.93	760.2	64.5	18.1	78	SSE	8.2	3.7		0	10ks;s			0.320	8.13	Cloudy	The Staff.
Wakayama	29.64	752.8	29.69	754.1	68.7	20.4	66	SSE	9.3	4.2			10cs;ks		S	0.680	17.27	Cloudy	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.4	30.04	763.1	55.4	13.0	67	SW			1	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.65	600.7			61.7	16.5	73	E	2	1.0		k	0	SW		0	0	Fair	Vicente Fernandez.
Leon	24.40	619.7	29.97	761.3	66.9	19.4	72	SW			2	1k	0	SE		0	0	Clear	Prof. M. Leal.
Mazatlan	29.69	754.0	29.95	760.6	72.8	22.7	93	Calm			0	5ck	0	SW		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.07	585.9	30.01	762.2	57.2	14.0	71	Calm	0	0			10k			0	0	Covered	The Staff
Morelia	24.08†	611.7†			71.2	21.8	52	SE			2	1c	7k	S	E	0.06	1.5	Cloudy	M. Fena, M. D.
Pabellon (Aguascalientes)	23.95	608.2	29.85	758.3	64.2	17.9	71	NE			1	0	0			0	0	Light haze	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.39	594.0	30.12	765.0	54.5	12.5	44	Calm	0	0		1c	0	NE		0.11	2.9	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.2	30.06	763.5	64.0	17.8	58	SE			1	1	6	W	E	0	0	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.87	758.6	29.88	758.9	80.6	27.0	87	NE			1	2	1	SW	N	0	0	Clear	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.58	573.4	30.11	764.9	59.9	15.5	74	NE			3	8c	0	SE		0	0	Cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	30.21	767.2	30.21	767.2	60.8	16.0		W			4					0.008	0.2		
Helder	30.04	763.1	30.10	764.5	54.0	12.2		NW								0.012	0.3		
Hellevoetsluis	30.12	765.0	30.12	765.0	52.9	11.6		SW			3					0	0		
Utrecht	30.19	766.7	30.19	766.7	57.0	13.9	73	WSW			3					0	0		
	30.18	765.5	30.18	766.5	61.2	16.2	58	WNW			2		8			0	0	Very cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.71	754.6	29.76	756.0	50.0	10.0	69	NW	19.0	8.5			3			0.236	6.0	Raining	
Brōno	29.45	748.1	29.49	749.1	49.3	9.6	59	SW	18	8			10			0.472	12.0		
Christiania	29.45	748.1	29.60	751.7	61.2	16.2	48	SSW	9	4			7			0	0		
Tromsö	29.53	750.0	29.58	751.4	45.3	7.4	66	SW	9	4			2			0	0		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.23	767.8	30.44	773.2	63.3	17.4	70	NW			3		4			0	0		Dr. J. A. Sampaio.
Campo Major	29.18	741.1	30.15	765.9	72.3	22.4	29	ENE	2.5	1.1			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.11	764.7	30.19	766.9	65.1	18.4	66	SW	3.1	1.4			7			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.86	758.5	30.21	767.4	70.9	21.6	44	NNE	8.7	3.9			0			0	0		The Staff.
Ponta Delgada (Azores)	30.30	769.5	30.37	771.3	63.3	17.4	52	NE	5.6	2.5			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Mossamedes, Benguela			29.93	760.3	72.5	22.5		WNW			1		4		WNW	1	WNW		D. clouds	C. J. de Sousa Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello Mossamedes, Benguela			29.94	760.5	72.9	22.7		W			3		2			3	W		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.93	760.1	82.8	28.2		SW			2		10		SW	1			Overcast	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.82	757.4	29.84	757.9	42.6	5.9	66	WNW	4	2			8ks						Capt. Sseliwerstow.
Astrakhan	29.70	754.3	29.61	752.2	79.3	26.3	40	W	18	8			8ks;n						Capt. Wisganow.
Barnaul	29.21	742.0	29.69	754.0	72.9	22.7	46	Calm	0	0			9						Meteorological Obs.
Dorpat	29.63	752.6	29.87	758.7	57.0	13.9	36	SW	4	2			9k						Prof. Dr. Weihrauch.
Ekaterinburg	28.74	730.1	29.65	753.1	79.5	26.4	28	SSE	7	3			4cks						Meteorological Obs.
Irkutsk																			
Kasan	29.44	747.7	29.70	754.4	59.2	15.1	61	N	15	7			3ck						Physical Cabinet.
Kertch	29.76	755.8	29.78	756.3	60.1	15.6	94	NW	7	3			10						Lagorio.
Kieff	29.18	741.2	29.82	757.3	48.4	9.1	57	NNE	13	6			c;ck						Physical Cabinet.
Krotkowo*																		Light rain	Cand. Fatjanow.
Lugan	29.33	744.9	29.52	749.9	70.3	21.3	50	WSW	34	15			7						Meteorological Obs.
Moscow	29.29	743.9	29.84	757.9	48.7	9.3	52	N	13	6			10s						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.82	757.4	29.89	759.2	53.4	11.9	68	NW	18	8			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.54	750.3	29.63	752.5	42.3	5.7	91	SE	18	8			10n						
Nukuss																			
Orenburg																			
Pekin (China)	29.41	747.1	29.56	750.7	74.3	23.5	33	Calm	0	0			2k						Physical Observatory.
St. Petersburg	29.85	758.1	29.86	758.5	61.6	10.9	50	NW	9	4			10kn						Central Physical Obs.
Tashkend	28.07	712.9	29.54	750.3	81.0	27.2	73	Calm	0	0			9					Light clouds	Teich, A. M.
Tiflis	28.38	720.8	29.73	755.2	73.9	23.3	44	NW	45	20			6ks						Physical Observatory.
Vladivostock																			
Warsaw	29.53	750.0	29.95	760.7	54.9	12.7	33	W	4	2			10ks						Astronomical Obs.
Wilna	29.50	749.4	29.93	760.1	50.9	10.5	55	S	4	2			9					Heavy clouds	Astronomical Obs.
Yeniseisk	29.53	750.1	29.81	757.1	70.7	21.5	29	NW	7	3			0					Hazy	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	66.2	19	52	SW	4.6	2.06			0			0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.30	769.5	30.39	771.9	66.9	19.4	62	NW	2.6	1.15		1	8	E		0	0	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.31	693.7			59.0	15.0	58	N	18.2	8.15			6			0	0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.96	710.3	30.15	765.7	71.2	21.8	46	NE	12.7	5.67		1	1	N		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.99	761.7	30.13	765.4	72.9	22.7	55	SE	1.8	0.81		3	5	E		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.35	745.5	30.22	767.6	74.1	23.4	42	NNE	11.2	5.0		0	0			0	0	Clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.1	77.1	25.1	87	E	1.3	0.6		3ck	8k;s	WSW		1.732	44.0	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.82	757.4	29.87	758.7	87.5	30.8	74	NW	3.3	1.5			4ck		W	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.11	764.7	30.20	767.2	68.0	20.0	77	WNW	9.8	4.4		3	1	W	W	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.94	760.4	30.03	762.7	77.7	25.4	87	E	2.5	1.10		7s	2k	E	E	0.049	1.25	D. clouds	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.72	754.8	29.76	755.8	42.4	5.8		S			2		10			0.	0		
Umea	29.63	752.5	29.68	753.8	46.8	8.2	73	S			2		6			0.177	4.5		
Hernosand	29.62	752.4	29.67	753.7	47.1	8.4	60	S			6		10			0.075	1.9		
Stockholm	29.56	750.8	29.74	755.3	55.2	12.9	46	SSW			4		10			0.051	1.3		
Wisby	29.75	755.7	29.81	757.2	47.1	8.4	84	W			4		5			0.012	0.3		
Sub-Series.																			
Upsala	29.61	752.1	29.70	754.3	56.3	13.5	48	WSW	6.5	2.9			1		W	0.079	2.00		Nils Ekholm.

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

SWEDISH Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia																				J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.69	728.7	30.10	764.4	61.2	16.2	41	NNE			4		1			0	0	Clear.		The Observatory.
Zurich	28.50	723.9	30.11	764.9	61.7	16.5	52	W			2		4			0	0	Lightly cov'd		The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +3.3 mm.; Thermometer, —1.2 Cent. Relative Humidity, —16 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.87	758.7	54.9	12.7	93	ENE	13	6.0			10		NE	0.504	12.8	Raining		The Observatory.
Fao, Persian Gulf																				
Valona			29.85	758.3	64.0	17.8		S			2		10			0.51	13.	Covered		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y			29.95	760.6	81.0	27.2	58	NE			1	8c				0	0			Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					47.0	8.3		NE	2	0.9			10n			0	0	Cloudy		Hon. J. Ferguson.
Chatham, N. B.	30.01	762.2	30.07	763.8	48.7	9.3	93	NE	7	3.1			10n			0.11	2.8	Cloudy		G. A. Blair.
Charlottetown, P. E. Island	30.03	762.7	30.07	763.8	54.6	12.6	91	S	8	3.6		0	3s			0.180	4.7	Fair		H. J. Caudall, C. E.
Cornwall, Ontario	29.65	753.1	29.84	757.9	66.0	18.9	81	SW			1		10s			0	0	Cloudy		James Smith, M. A.
Dalhousie, N. B.	29.91	759.7	30.08	764.0	47.5	8.6		SE			2		10s			0	0	Cloudy		H. A. Johnson.
Father Point, Quebec	30.04	763.0	30.06	763.5	44.6	7.0	88	NE	5	2.2			10n			0.02	0.5	Light rain		J. McWilliams.
Fredericton, N. B.	29.99	761.7	30.05	763.3	56.0	13.3	87	S	5	2.2			10s			0	0	Cloudy		Prof. Harrison.
Fort Garry, Manitoba	29.25	742.9	30.06	763.5	52.0	11.1	66	S	5	2.2		0	0			0	0	Clear.		James Stewart.
Granton, Ontario	28.83	732.3	29.91	759.7	56.0	13.3	94	NE			1		10n			0.34	8.6	Raining		James Grant.
Halifax, N. S.	30.04	763.0	30.17	766.3	53.2	11.8	94	W	2	0.9			Fog			0	0	Foggy		A. Allison.
Hamilton, Ontario	29.58	751.3	29.96	761.0	64.1	17.8	59	NE			1	10cs	0	NE		0.03	0.8	Cloudy		Geo. Dickson, B. A.
Heart's Content, N. F.																				E. Weedon.
Kingston, Ontario	29.59	751.6	29.92	760.0	56.2	13.4	87	SW	2	0.9			10ks			Inap.	Inap.	Cloudy		S. Woods, M. A.
Little Glace Bay, N. S.	30.08	764.0	30.12	765.0	53.1	11.7	94	SW	12	5.4			10n			0.07	1.8	Overcast		C. H. Rigby.
Montreal, Quebec	29.71	754.6	29.91	759.7	60.0	15.6	88	N	4	1.8			10n			0.76	19.3	Cloudy		C. H. McLeod, C. E
Moose Factory, Ontario	30.26	768.6	30.29	769.4	32.0	0.0	74	Calm			0	0	4ks			0	0	Fair		J. R. Nason.
Norwood, Ontario	29.24	742.7	29.91	759.7	62.2	16.8	94	W	6	2.7			10s			0.01	0.3	Cloudy		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.32	744.7	30.01	762.2	51.0	10.6	93	N	10	4.5			10n			0.14	3.6	Cloudy		Rev. R. Mosley.
Peterboro, Ontario	29.21	741.9	29.94	760.5	63.7	17.6	88	S			1		10n			0	0	Overcast		J. F. Jeffers, M. A.
Port Dover, Ontario	29.29	744.0	29.96	761.0	63.1	17.3	100	Calm	0	0			10n			0.12	3.0	Threatening		H. Morgan.
Port Stanley, Ontario	29.33	745.0	29.96	761.0	59.4	15.2	99	NW	1	0.4			Fog			0.16	4.1	Light rain		M. Payne.
Quebec, Quebec	29.60	754.1	30.01	762.2	49.0	9.4	85	E			7		10n			0.04	1.0	Cloudy		Capt. Ashe, R. N.
Rockliffe, Ontario	29.54	750.3	30.00	762.0	49.3	9.6	93	NW	4	1.8			10s			0.48	12.2	Heavy rain		W. H. McIntyre.
St. John, N. B.	29.94	760.5	30.10	764.5	48.0	8.9	92	S	5	2.2			Fog			0.030	0.76	Foggy		G. Murdock, C. E.
Saugeen, Ontario	29.29	744.0	30.00	762.0	53.1	11.7	92	NE	10	4.5			Fog			0.08	2.0	Foggy		K. Stewart.
Stratford, Ontario	28.71	729.2	29.97	761.2	54.0	12.7	93	Calm	0	0			10s			0.134	3.40	Cloudy		C. J. MacGregor, M. A.
Sydney, C. B.	30.10	764.5	30.14	765.5	53.0	11.7	93	SW	6	2.7			10s			0.11	2.8	Clearing		T. C. Hill, C. E.
Toronto, Ontario	29.60	751.8	29.98	761.5	59.6	15.3	86	N	11	4.9			10n			0.09	2.3	Cloudy		Magnetic Observatory
Windsor, N. S.																				Prof. John E. Oram, M. A.
Woodstock, Ontario	28.92	734.6	29.94	760.5	68.6	20.3	91	N	4	1.8			10s			0.19	4.8	Cloudy		Professor Wolverton.
Yarmouth, N. S.	30.08	764.0	30.15	765.8	49.4	9.7	88	SW	6	2.7		0	0			0	0	Clear.		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	30.08	764.0	30.33	770.4	51.5	10.8	96	W				5c	5ks			0	0	Fair		John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.12	765.0	50.0	10.0		SW			2					0.08	2.0			The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.93	760.2	30.01	762.2	75	23.9	68	SW	8	3.6		0	0			0.06	1.5	Clear.	
Alpena, Michigan	29.39	746.5	30.03	762.7	55	12.8	50	NE	7	3.1			10s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.86	733.0	29.98	761.5	66	18.9	84	SE	14	6.3			10s		SE	0	0	Cloudy	
Atlantic City, New Jersey	30.15	765.8	30.16	766.1	64	17.8	89	S	18	8.0		2c;hz	Fog	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.96	761.0	30.15	765.8	73	22.8	76	SE	5	2.2		5cs	0	S		0	0	Fair	
Baltimore, Maryland	30.07	763.8	30.11	764.8	74	23.3	68	SW	13	5.8		0	Haze		Calm	0	0	Clear.	
Barnegat, New Jersey	30.12	765.0	30.14	765.5	67	19.4	79	S	16	7.2		2cs	Haze	Calm		0	0	Clear.	
Bismarck, Dakota	28.10	713.7	29.96	761.0	49	9.4	63	SE	12	5.4		5c	0	N		0	0	Fair	
Boerne, Texas	28.54	724.9	29.83	757.7	62	16.7	94	NW	1	0.4		5k	0	Calm		0.05	1.3	Fair	
Boise City, Idaho	27.22	691.4	30.18	766.6	48	8.9	78	NW	6	2.7		2k	5s	W	W	0.04	1.0	Fair	
Boston, Massachusetts	29.94	760.5	30.09	764.3	67	19.4	74	SW	9	4.0		Haze	Haze	Calm	Calm	0	0	Hazy	
Brackettville, Texas	28.86	733.0	29.88	758.9	70	21.1	85	NE	9	4.0		8ck	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.05	737.9	30.05	763.3	45	7.2	76	SE	2	0.9		0	0			0	0	Clear	
Brownsville, Texas	29.89	759.2	29.94	760.5	77	25.0	83	SE	1	0.4			10s		Calm	0.33	8.4	Cloudy	
Buffalo, New York	29.28	743.7	29.96	761.0	61	16.1	88	SW	4	1.8			8s		SW	0.02	0.5	Cloudy	
Burkes, Arizona					62	16.7	41	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.65	753.1	29.93	760.2	72	22.2	67	S	15	6.7		5ck	2s	W	SW	0.02	0.5	Fair	
Cairo, Illinois	29.45	748.0	29.83	757.7	64	17.8	94	NW	10	4.5			10n		NW	2.37	60.2	Light rain	
Campo, California	27.29	693.2	29.86	758.4	44	6.7	68	NW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.23	767.8	30.24	768.1	75	23.9	77	S	14	6.3		Haze	Haze			0	0	Hazy	
Cape Henry, Virginia	30.18	766.6	30.20	767.1	71	21.7	80	SW	13	5.8		0	Haze		Calm	0	0	Clear.	
Cape Lookout, N. Carolina	30.20	767.1	30.21	767.3	73	22.8	81	SW	12	5.4		Haze	Haze	Calm	Calm	0	0	Light haze	
Cape May, New Jersey	30.11	764.8	30.14	765.5	66	18.9	84	S	16	7.2		1c	0	SW		0	0	Clear.	
Castroville, Texas	29.19	741.4	29.88	758.9	66	18.9	84	N	3	1.3		8c	0	W		0	0	Fair	
Cedar Keys, Florida	30.04	763.0	30.06	763.5	76	24.4	77	SE	17	7.6		1k	0	Calm		0	0	Clear.	
Charleston, South Carolina	30.08	764.0	30.14	765.5	76	24.4	77	S	8	3.6		0	8ks		S	0	0	Cloudy	
Charlotte, North Carolina	29.28	743.7	30.08	764.0	68	20.0	84	S	6	2.7			10s		SW	0	0	Cloudy	
Chattanooga, Tennessee	29.16	740.7	29.93	760.2	68	20.0	90	S	8	3.6			10n		S	0.65	16.5	Light rain	
Cheyenne, Wyoming	23.94	608.1	29.88	758.9	42	5.6	50	SW	3	1.3		5c	0	W		0.01	0.3	Fair	
Chicago, Illinois	29.29	744.0	29.98	761.5	48	8.9	85	NE	11	4.9			10s		Calm	0.16	4.1	Cloudy	
Chincoteague, Virginia	30.18	766.6	30.20	767.1	66	18.9	96	S	24	10.7		2cs	0	Calm		0	0	Fair	
Cincinnati, Ohio	29.28	743.7	29.90	759.4	67	19.4	84	N	2	0.9			10n		S	0.58	14.7	Light rain	
Cleveland, Ohio	29.25	742.9	29.91	760.5	67	19.4	84	S	8	3.6			10s		SW	0.31	7.9	Cloudy	
Coleman City, Texas	28.23	717.0	29.88	758.9	60	15.6	77	N	4	1.8		0	0			0	0	Clear	
Columbus, Ohio	29.[illegible]0	739.1	29.90	759.4	67	19.4	84	S	2	0.9			10n		S	0.20	5.1	Light rain	
Concho, Texas	8.13	714.5	29.79	756.7	62	16.7	83	NW	3	1.3		2c	0	Calm		0.01	0.3	Fair	
Corsicana, Texas	29.52	749.8	29.98	761.5	64	17.8	83	N	8	3.6		0	0			0.17	4.3	Clear	
Davenport, Iowa	29.36	745.7	29.99	761.7	54	12.2	67	N	5	2.2		10cs	0	SW		0	0	Cloudy	
Dayton, Washington T'y					42	5.6	83	SW			4	2k	4s	W	SW	0.11	2.8	Fair	
Deadwood, Dakota	25.14	638.5			55	12.8	39	Calm	0	0		5ck	0	N		0	0	Fair	
Decatur, Texas	28.84	732.5	29.98	761.5	66	18.9	79	NE	8	3.6		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.13	765.3	30.16	766.1	69	20.6	80	SW	28	12.5		0	Haze			0	0	Hazy	
Denison, Texas	29.19	741.4	29.97	761.2	62	16.7	83	NW	4	1.8		0	0			0	0	Clear.	
Denver, Colorado	24.68	626.9	29.90	759.4	50	10.0	52	S	3	1.3		2ck	5s	SW	Calm	0	0	Fair	
Des Moines, Iowa	29.16	740.7	30.04	763.0	50	10.0	65	NE	4	1.8		0	0			0	0	Clear.	
Detroit, Michigan	29.29	744.0	29.94	760.5	55	12.8	93	NE	7	3.1			10s		E	0.52	13.2	Cloudy	
Dodge City, Kansas	27.42	696.5	29.66	753.4	56	13.3	81	Calm	0	0		5ck	0	Calm		0	0	Fair	
Dubuque, Iowa	29.31	744.5	30.01	762.2	50	10.0	65	N	7	3.1		10cs	0	Calm		0.01	0.3	Cloudy	
Duluth, Minnesota	29.48	748.8	30.17	766.3	40	4.4	82	NW	2	0.9		0	0			0.03	0.8	Clear.	
Eagle Pass, Texas	29.18	741.1	29.88	758.9	77	25.0	73	SE	6	2.7		5ck	0	Calm		0	0	Fair	
Eastport, Maine	29.98	761.5	30.06	763.3	54	12.2	74	S	12	5.4		0	Haze		Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.25	742.9	29.94	760.5	68	20.0	74	S	4	1.8			10s		SW	0.03	0.8	Cloudy	
Escanaba, Michigan	29.44	747.8	30.11	764.8	40	4.4	73	N	11	4.9			10s		SW	0.03	0.8	Cloudy	
Florence, Arizona	28.34	719.8	29.94	760.5	63	17.2	72	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.98	634.5	30.43	772.9	44	6.7	52	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.69	703.3	29.47	748.5	52	11.1	60	SE	12	5.4		5cs	0	NW		0	0	Fair	
Fort Custer, Montana	26.53	673.8			56	13.3	75	NW	6	2.7			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.25	641.3	30.21	767.3	56	13.3	81	W	1	0.4		0	0			0	0	Clear.	
Fort Elliot, Texas	27.00	685.8	29.91	741.9	52	11.1	66	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.42	747.3	29.95	760.7	62	16.7	77	SW	3	1.3		0	0			0.24	6.1	Clear	
Fort Grant, Arizona	25.15	638.8	29.95	760.7	70	21.1	13	E	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.75	730.2	30.00	762.0	61	16.1	88	Calm	0	0		0	0			0	0	Clear.	
Fort Keogh, Montana	26.94	684.3			53	11.7	53	SE	6	2.7		10cs	0	SE		0	0	Cloudy	
Fort McKavett, Texas	27.76	705.1	29.63	752.6	63	17.2	72	Calm	0	0		1c	0	N		0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.80	731.5	29.88	758.9	62	16.7	77	N	6	2.7		0	0			2.02	51.3	Clear	
Fort Stevenson, Dakota	28.05	712.5			47	8.3	85	SE	14	6.3		0	0			0	0	Clear.	
Fort Verde, Arizona					55	12.8	33	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.[illegible]8	758.9	29.99	760.0	71	21.7	90	NW	8	3.6		2cs	0	Calm		0.31	7.9	Clear.	
Grand Haven, Michigan	29.34	745.2	29.98	761.5	54	12.2	80	NE	5	2.2		0	0			0.18	4.6	Clear	
Helena, Montana					46	7.8	54	S	5	2.2		10cs	0	SW		0.10	2.5	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.20	739.1	29.85	758.4	62	16.7	88	N	4	1.8			10n		Calm	0.69	17.5	Light rain	
Indianola, Texas	29.95	760.7	29.97	761.2	72	22.2	76	N	16	7.2		2cs	0	Calm		1.35	34.3	Fair	
Jacksboro, Texas	28.89	733.8	29.99	761.7	67	19.4	84	N	1	0.4		0	0			0	0	Clear	
Jacksonville, Florida	30.07	763.8	30.09	764.3	77	25.0	73	SE	1	0.4		2k	0	Calm		0	0	Clear	
Keokuk, Iowa	29.31	744.5	29.91	759.7	57	13.9	75	N	12	5.4		8cs	1s	Calm	Calm	0	0	Cloudy	
Key West, Florida	29.95	760.7	29.98	761.5	76	24.4	95	E	10	4.5		2k	8ks	E	E	1.25	31.7	Cloudy	
Kittyhawk, North Carolina	30.22	767.6	30.25	768.3	77	25.0	65	SW	16	7.2		2k	0	Calm		0	0	Clear.	
Knoxville, Tennessee	29.99	736.3	29.95	760.7	74	23.3	62	SW	4	1.8		1ck	5ks	S	S	0	0	Fair	
La Crosse, Wisconsin	29.30	744.2	30.05	763.3	44	6.7	76	N	8	3.6			10s		N	0	0	Cloudy	
La Mesilla, New Mexico	26.08	662.4	30.23	767.8	60	15.6	71	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas																			
Leavenworth, Kansas	29.13	739.9	29.95	761.0	57	13.9	63	N	6	2.7		1cs	0	W		0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.56	750.8	29.86	758.4	64	17.8	100	NW	7	3.1			10n		Calm	1.54	39.1	Light rain	
Los Angeles, California	29.52	749.8	29.86	758.4	57	13.9	94	Calm	0	0			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.29	744.0	29.82	757.4	66	18.9	95	E	8	3.6			10n		Calm	1.36	34.5	Light rain	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	76	24.4	56	S	11	4.9		0	0			0	0	Clear.	
Madison, Wisconsin	29.03	737.3	30.02	762.5	45	7.2	76	NE	10	4.5		8cs	2s	Calm	NE	0	0	Cloudy	
Marquette, Michigan	29.4[illegible]	747.3	30.[illegible]	76[illegible]	38	3.4	81	NW	12	5.4			10s		NW	0.01	0.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.36	720.3	30.08	764.0	65	18.3	84	NW	4	1.8		2cs	2ks	Calm	NW	0	0	Fair	
Memphis, Tennessee	29.47	748.5	29.80	756.9	65	18.3	100	NW	8	3.6			10n		NW	1.69	42.9	Light rain	
Milwaukee, Wisconsin	29.31	744.5	30.05	763.3	43	6.1	75	N	14	6.3		8cs	1ks	NW	NW	Inap	Inap.	Cloudy	
Mobile, Alabama	29.86	758.4	29.90	759.4	75	23.9	95	S	14	6.3			10n		Calm	0.55	14.0	Light rain	
Montgomery, Alabama	29.75	755.6	29.98	761.5	72	22.2	90	SE	3	1.3		10n	0	S		0.39	9.9	Light rain	
Morgantown, West Virginia	29.00	736.6	29.95	760.7	71	21.7	80	Calm	0	0		5ck	5ks	SW	SW	0.55	14.0	Cloudy	
Mt. Washington, N. H.	23.92	607.6	30.28	769.1	52	11.1	72	W	39	17.4		8c	Sm'e	W	W	0.01	0.3	Fair	
Nashville, Tennessee	29.33	745.0	29.84	757.9	69	20.6	90	SE	8	3.6			10s		Calm	0.25	6.3	Threatening	
New Haven, Connecticut	30.00	762.0	30.12	765.0	66	18.9	79	S	4	1.8			10s		S	0	0	Cloudy	
New London, Connecticut	30.09	764.3	30.14	765.5	64	17.8	89	S	8	3.6		9cs	fg;hz	SW	Calm	0	0	Cloudy	
New Orleans, Louisiana	29.82	757.4	29.88	758.9	75	23.9	90	S	2	0.9		5k	2s	SW	SW	0.98	24.9	Fair	
Newport, Rhode Island	30.10	764.5	30.15	765.8	58.5	14.7	97	S	9	4.0			Fog			0	0	Foggy	
New River, North Carolina																			
New York, New York	29.94	760.5	30.11	764.8	69	20.6	84	SW	6	2.7		1c	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.15	765.8	30.20	767.1	78	25.6	61	S	10	4.5		8k	Haze	S	Calm	0	0	Cloudy	
North Platte, Nebraska	27.07	687.6	29.61	752.1	51	10.6	72	SE	18	8.0		0	Haze		Calm	0	0	Clear	
Olympia, Washington Ter.	30.09	764.3	30.13	765.3	46.0	7.8	92	S	3	1.3			10n		W	0.10	2.5	Light rain	
Omaha, Nebraska	28.89	733.8	29.98	761.5	53	11.7	61	NE	6	2.7		0	0			0	0	Clear	
Oswego, New York	29.66	753.4	29.96	761.0	71	21.7	71	S	4	1.8		0	8ks		SW	0.11	2.8	Fair	
Pembina, Dakota	29.14	740.1	29.98	761.5	42	5.6	91	S	5	2.2		0	0			0	0	Clear	
Pensacola, Florida	29.92	760.0	29.95	760.7	76	24.4	91	SE	14	6.3			10n		SE	0.13	3.3	Light rain	
Philadelphia, Pennsylvania	29.96	761.0	30.01	762.2	73	22.8	67	SW	20	8.9		1c	Haze	Calm	Calm	0	0	Clear	
Phœnix, Arizona	28.68	728.5	30.39	771.9	80	26.7	31	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.86	452.1	30.01	762.2	27	— 2.8	64	NW	24	10.7		8cs	0			0.09	2.3	Fair	
Pilot Point, Texas	29.21	741.9	30.04	763.0	63	17.2	83	SW	3	1.3		0	Haze			0	0	Clear	
Pioche, Nevada	23.95	608.3	29.72	754.9	61	16.1	21	SW	6	2.7		0	2s		Calm	0	0	Fair	
Pittsburg, Pennsylvania	29.18	741.1	29.96	761.0	68	20.0	84	S	8	3.6			10s		S	0	0	Cloudy	
Port Huron, Michigan	29.32	744.7	29.98	761.5	47	8.3	92	N	10	4.5			10s		Calm	0.14	3.6	Cloudy	
Portland, Maine	29.97	761.2	30.02	762.5	64	17.8	78	SW	7	3.1		0	Fog			0.14	3.6	Clear	
Portland, Oregon	30.14	765.5	30.22	767.6	47	8.3	80	S	7	3.1		2k	1ks	W	W	0	0	Fair	
Portsmouth, North Carolina					74	23.3	76	S	12	5.4		0	Haze		Calm	0	0	Light haze	
Prescott, Arizona	24.71	627.6	30.07	763.8	54	12.2	38	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	76	24.4	77	E	14	6.3		8ck	0	SE		0.12	3.0	Fair	
Red Bluff, California	29.66	753.4	30.02	762.5	58.0	14.4	52	NW	10	4.5		0	0			0	0	Clear	
Rio Grande City, Texas	29.80	756.9	30.01	762.2	71	21.7	90	SW	4	1.8		2c	5s	Calm	Calm	0.07	1.8	Fair	
Rochester, New York	29.34	745.2	29.93	760.2	69	20.6	70	SW	5	2.2		9cs	0	W		Inap.	Inap.	Cloudy	
Roseburg, Oregon	29.72	754.9	30.31	769.9	40	4.4	86	Calm	0	0		1ck	0	NW		0	0	Clear	
Sacramento, California	29.84	757.9	29.93	760.0	61.5	16.4	91	N	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.32	744.7	29.88	758.9	62	16.7	77	N	11	4.9			10ks		N	Inap	Inap.	Cloudy	
St. Paul, Minnesota	29.24	742.7	30.08	764.0	44	6.7	67	N	8	3.6		0	0			0	0	Clear	
Salt Lake City, Utah	25.48	647.2	29.82	757.4	62	16.7	56	NW	12	5.4			10ks		W	0	0	Threatening	
San Antonio, Texas	29.29	744.0	29.98	761.5	67	19.4	84	NW	2	0.9		2c	0	Calm		0.07	1.8	Clear	
San Diego, California	29.80	756.9	29.87	758.7	58	14.4	94	S	4	1.8			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	29.28	743.7	29.93	760.2	65	18.3	89	NE	7	3.1			10s		Calm	0.31	7.9	Cloudy	
Sandy Hook, New Jersey	30.08	764.0	30.11	764.8	73	22.8	72	SW	18	8.0		5c	0	W		0	0	Fair	
San Francisco, California	29.91	759.7	29.98	761.5	53	11.7	89	W	1	0.4		0	Fog		W	0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	46	9.4	64	E	5	2.2		0	1s		Calm	0	0	Clear	
Savannah, Georgia	30.04	763.0	30.13	765.3	79	26.1	70	S	8	3.6		8k	Haze	SE	Calm	0	0	Fair	
Shreveport, Louisiana	29.68	753.9	29.89	759.2	69	20.6	90	NW	4	1.8			10s		Calm	0.96	24.4	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	30.16	766.1	30.20	767.1	76	24.4	73	S	16	7.2		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico	25.39	644.9	29.46	748.3	63	17.2	42	S	7	3.1		0	0			0	0	Clear	
Springfield, Illinois	29.28	743.7	29.94	760.5	60	15.6	82	N	6	2.7			10s		N	0.09	2.3	Cloudy	
Springfield, Massachusetts	29.96	761.0	30.09	764.3	70	21.1	75	S	8	3.6		2cs	0	SW		0	0	Fair	
Stockton, Texas	27.00	685.8	30.00	762.0	63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass.	30.04	763.0	30.10	764.5	59	15.0	88	SW	9	4.0		0	Haze			0	0	Clear	
Toledo, Ohio	29.25	742.9	29.91	759.7	59	15.0	94	N	8	3.6			10s		NW	1.17	29.7	Threatening	
Tucson, Arizona	27.42	696.5	29.97	761.2	72	22.2	26	S	5	2.2		0	Sm'e		Calm	0	0	Clear	
Umatilla, Oregon	29.78	756.4	30.28	769.1	48	8.9	67	W	32	14.3		0	0			0.01	0.3	Clear	
Uvalde, Texas	29.05	737.9	29.85	758.2	69	20.6	80	Calm	0	0		10c.k	0	W; NW		0	0	Cloudy	
Vicksburg, Mississippi	29.64	752.8	29.89	759.2	71	21.7	95	SW	6	2.7			10s		SW	0.92	23.4	Cloudy	
Virginia City, Montana	24.10	612.1	29.58	751.3	38	3.3	72	W	8	3.6		2c	5ks	NW	W	0.89	22.6	Fair	
Visalia, California	29.46	748.3	29.82	757.4	61	16.1	77	W	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.00	762.0	30.12	765.0	74	23.3	68	S	14	6.3		2c	0	NW		0	0	Fair	
Wickenburg, Arizona					56	13.3	55	NW			1		0			0	0	Clear	
Wilmington, North Carolina	30.11	764.8	30.19	766.8	76	24.4	68	S	10	4.5		5k	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	47	8.3	70	SW	3	1.3		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.11	764.8	30.15	765.8	59	15.0	88	SW	20	8.9		0	Haze			0	0	Clear	
Yankton, Dakota	28.75	730.2	30.05	763.3	46	7.8	77	N	14	6.3		0	0			0	0	Clear	
Yuma, Arizona	29.58	751.3	29.72	754.9	72	22.2	34	SE	6	2.7		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia																0.72	18.3		Thomas Herran.
Havana, Cuba, W. I.	29.97	761.2	30.02	762.5	77	25.0	86	Calm	0	0		8cs	4ks	Calm	Calm	2.36	59.9	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.96	761.0	29.97	761.2	79	26.1	83	Calm	0	0		2c	2ks	Calm		0	0	Hazy	James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	78.5	25.8	86	E	3	1.3		8k	10s	NE	E	0.1	3.	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	78	25.6	86	E			2	5k	8ks	E		0.520	13.21	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.39	746.5	29.94	760.5	81	27.2	90	N			1		8s			0	0		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		NW				4c	1k	NE	NW	0.08	2.	Fair	Carl Flint.
Santiago de Cuba, W. I.	29.97	761.2	30.00	762.0	77	25.0	82	N	1.2	0.5		8cs		Calm		0.06	1.5		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.68	753.9	29.73	755.1	31.0	— 0.6	100	NE	8	3.6			10n		NE	9.30	7.6	Snowing	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES,

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	29.97	761.2	76	24.4	86	SE	24	10.7	.....	.....	10d	.....	SE	0	0	.....	.....	Cloudy.....	
§ Navy Yard, Portsmouth, N. H.	30.08	764.0	63	17.2	78	SW	6	2.7	.....	.....	2	.....	.....	0	0	.....	.....	Fair.....	
Naval Hospital, Yokohama, Japan	30.00	762.0	65	18.3	78	Calm	.....	.....	0	ck	9k;sms	.....	SW	0	0	.....	.....	Cloudy.....	
§ Adams, Punta Arenas, Costa Rica	29.92	760.0	77	25.0	91	N	.....	.....	1	.....	8	.....	N	.....	.....	.....	.....	Cloudy.....	
§ Alaska, Ancon, Peru *	29.95	760.7	63	17.2	94	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Smooth	.....	Misty.....	
§ Alert, N 33° 13′, E. 139° 36′	29.92	760.0	71	21.7	80	ENE	.....	.....	4	.....	10	.....	E	0	0	Long	E	Cloudy.....	
Alliance, Norfolk, Va.	30.20	767.1	73	22.8	85	SSW	.....	.....	1	.....	1	.....	SW	0	0	.....	.....	Clear.	
§ Ashuelot, Shan hai, China	29.92	760.0	68	20.0	51	SSW	.....	.....	2	.....	2	.....	SW	.....	.....	.....	.....	Fair.....	
Colorado, New York, N. Y.	30.08	764.0	71	21.7	85	SSW	5	2.2	.....	.....	5	.....	SW	0	0	.....	.....	Hazy.....	
§ Constitution, New York, N. Y.	30.08	764.0	66	18.9	89	SSW	3	1.3	.....	.....	8	.....	Calm	.....	.....	.....	.....	Hazy.....	
§ Franklin, Off Navy Yard, Norfolk, Va	30.22	767.6	73	22.8	85	S	8.3	3.8	.....	.....	2	.....	SW	0	0	.....	.....	Fair.....	
§ Independence, Mare I'd. Navy Yard, Cal.	29.97	761.2	55	12.8	??	Calm	0	0	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Jamestown, Sitka, Alaska *	29.66	753.4	41	5.0	.....	ENE	.....	.....	1	.....	8	.....	.....	.....	.....	Mod'ate	.....	Cloudy.....	
Kearsarge, N 11° —′, W. 81° 50′	29.93	760.2	83	28.3	83	NNE	.....	.....	1	.....	5	.....	NE	.....	.....	Smooth	NE	Fair.....	
§ Lackawanna, Manzanilla, Mexico †	29.95	760.7	78	25.6	82	NE	.....	.....	1	.....	5	.....	NE	.....	.....	Smooth	W	Fair.....	
§ Marion, S. 37° 41′, W. 55° 46′	30.20	767.1	47	8.3	77	S	.....	.....	5	.....	5	.....	S	Blank	Blank	Mod'ate	S	Fair.....	
§ Michigan, Erie, Pa.	29.86	758.4	68	20.0	56	SW	.....	.....	3	.....	10	.....	SW	.....	.....	.....	.....	Cloudy.....	
§ Monocacy, Shanghai, China	29.93	760.2	67	19.4	60	SW	.....	.....	0–1	.....	2	.....	.....	0	0	.....	.....	Clear	
§ New Hampshire, Port Royal, S. C.	29.93	760.2	76	24.4	77	S	14	6.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Nipsic, N. 44° 00′ E 8° 42′	30.01	762.2	65	18.3	52	NE	.....	.....	1	.....	2	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
§ Onward, Ancon Bay, Peru †	29.99	761.7	64	17.8	89	SSW	.....	.....	1	.....	10	.....	.....	.....	.....	Long	W	Misty.....	
§ Palos, Shanghai, China	29.93	760.2	68	20.0	51	WSW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	.....	Clear	
§ Passaic, Washington, D. C.	30.11	764.8	74	23.2	76	SW	.....	.....	3	.....	2	.....	.....	0	0	.....	.....	Clear.....	
§ Pensacola, Vallejo, Cal.	29.92	760.0	59	15.0	82	SW	.....	.....	2	.....	0	.....	.....	.....	.....	Smooth	.....	Blue sky.....	
§ Portsmouth, N 36° 54′, W. 71° 41′	30.30	769.6	70	21.1	90	SE	.....	.....	1	.....	8	.....	.....	0	0	Mod'ate	SE	Cloudy.....	
§ Powhatan, N 37° 57′, W. 76° 15′	30.13	765.3	71	21.7	85	SSE	.....	.....	3	.....	2	.....	.....	.....	.....	.....	.....	Fair.....	
§ Quinnebaug, N. 43° 29′, W. 18° 23′	30.41	772.4	58	14.4	88	ENE	.....	.....	4	.....	10	.....	.....	.....	.....	Smooth	.....	Hazy.....	
§ Richmond, Shanghai, China	29.94	760.5	69	20.6	75	W	.....	.....	1	.....	2	.....	W	.....	.....	.....	.....	Hazy.....	
§ Rio Bravo, Brownsville, Texas †	30.16	766.1	71	21.7	100	NW	2	0.9	.....	.....	10	.....	Calm	0.29	7.4	.....	.....	Overcast.....	
§ Saratoga, Lisbon Portugal	30.20	767.1	71	21.7	53	E	.....	.....	2	.....	2	.....	Calm	0	0	.....	.....	Clear.	
§ Shenandoah, Montevideo, Uruguay	30.24	768.1	52	11.1	66	S	.....	.....	4	.....	5.	.....	SSW	.....	.....	Rough	S	Fair.....	
§ St. Louis, League Island, Pa.	30.09	764.3	71	21.7	75	SW	17	7.6	.....	.....	2	.....	.....	0	0	.....	.....	Clear.....	
Swatara, N. 6° 55′, E. 102° 40′ †	29.82	757.4	82	27.8	91	N	.....	.....	2	.....	5	.....	Calm	.....	.....	Smooth	.....	Fair.....	
§ Tennessee, N 16° 38′, W. 83° 18′	29.94	760.5	83	28.3	87	ENE	12	5.4	.....	.....	2	.....	E	1.25	31.7	Long	E	Fair.....	
Ticonderoga, Yokohama, Japan	29.97	761.2	67	19.4	95	SSE	.....	.....	2	.....	8	.....	SSW	.....	.....	Smooth	.....	Fair.....	
§ Trenton, Palermo, Sicily	29.82	757.4	61	16.1	77	W	.....	.....	1	.....	5	.....	.....	8 hours mod'ate	8 hours mod'ate	None	.....	Fair.....	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.10	764.5	71	21.7	75	WSW	.....	.....	1	.....	5?	.....	WNW	.....	.....	.....	.....	Cloudy.....	
§ Wabash, Boston, Mass.	30.07	763.8	67	19.4	74	SW	9	4.0	.....	.....	8	.....	.....	0	0	.....	.....	Cloudy.....	
§ Wachusett, S. 41° 49′, W. 61° 05′	30.23	767.8	47	8.3	77	SSE	.....	.....	1	.....	8	.....	S;E	0	0	Long	S;E	Fair.....	
Wyoming, Villafranca, France	30.03	762.7	63	17.2	57	SSE	.....	.....	1	.....	2	.....	S	.....	.....	Smooth	S	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 45° 24', W. 57° 56'	30.24	768.1	39	3.9		SSW			5		10					Smooth		Dense fog	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 48° 38', W. 19° 30'...*†	30.53	775.4	67	19.4	95	W			2		0			0	0	Small	SW	Very fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger, N. 34° 15', W. 119° 42'....†	29.88	758.9	56	13.3	100	WNW			1		10		NW	0	0	Sharp	WSW	Foggy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
S. S. Belgic, L. Meyer, Hong-Kong, China....†	29.91	759.7	73	22.8	95	N			4		8		N					Overcast	D. A. Joyce.
S. S. Gaelic, W. H. Kidley, San Francisco, Cal....†	29.95	760.7	53	11.7	93	W			2		ks		W	0	0	Smooth		Misty	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, San Francisco, Cal....†	30.00	762.0	51	10.6		SSW			1		0							Clear	
S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
S. S. State of California G. Debney, San Francisco, Cal....†	29.95	760.7	45	7.2		NW			8		5		W					Light fog	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 16° 01′. W. 98° 31′.....†	29.81	757.2	86	30.0	92	SSW			3		8		NW			Light	WSW	Cloudy	F. A. Johnston.
§S. S. Australia,																			Banneman.
§S. S. China, W. B. Seabury, N. 32° 04. W. 118° 19....†	29.77	756.1	56	13.3	81	Baffling			1		10					Long	WNW	Foggy	
§S. S. City of Chester, J. M. Lacklan,																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, N. 8° 10′, W. 162° 57′.....†	29.89	759.2	79	26.1	95	ENE			4		8		NE	0	0	Mod'ate	NE	Squally	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 35° 13′. W. 121° 40′....†	29.94	760.5	57	13.9	87	NW			5		2		NW	0	0	Rough	NW	Hazy	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 34° 33′. E. 155° 08′.....†	30.04	763.0	58	14.4	88	ENE			6		5		ENE			Mod'ate	ENE	Fair	
§S. S. City of Sidney, H. C. Dearborn S. 34° 00′. E 153° 0′....*†	29.88	758.9	66	18.9		NNW			3		2		NW	0	0	Long	SE	Clear	E. LeSack.
§S.S. City of Tokio, J. Maury N. 45° 07′. E 172° 39′.....†	30.24	768.1	44	6.7	68	E			3		8		ENE	Blank	Blank	Heavy	ESE	Cloudy	F. S. Doane.
§S. S. Colima, R. R. Searle, Manzanillo, Mexico.....†	29.91	759.7	78	25.6	100	NE			2		5		Calm	0	0	Small	W	Misty	
§S.S. Dakota, D. E. Griffiths N. 46° 20′. W 124° 45′.....†	30.13	765.3	51	10.6	79	W			2		2		W	0	0	Mod'ate	SW	Clear	D. E. Griffiths.
§S.S. Granada, J M Cavarly San Jose, Guatemala...†	29.93	760.2	80	26.7	91	NE			2		5cs		W	0	0	Light	S	Fair	
§S. S. Idaho, N. 38° 20′. W. 123° 30′....†	30.11	764.8	59	15.0		NW			6		0			0	0	Rough	NW	Clear	
§S.S. Zealandia, R.C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			
S. S. Britanic, H. Perry, Queenstown, Ireland...†	30.44	773.2	60	15.6		NW			4		1		NW					Blue sky	H. N. Goulden.
S. S. Celtic, B. Gleagell																			J. Jones.
S. S. Republic, P. J. Irving N. 40° 43′. W. 68° 52′.....†	30.76	768.6	56	13.3		SW			2		0			0	0	Light	W	Hazy	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.09	764.3	64	17.8		S			1		2		W	0.18	4.6			Fine	Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Satilla river, Georgia....	30.11	764.8	76	24.4	73	ESE	3	1 3			5k		SE	0	0			D. clouds	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis Sombrero Light, Caribbean Id's.†	30.03	762.7	83	28.3		E			3		5		E	Showers.	Showers.	Mod'at	NE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 35° 00′. E. 18° 20′.....*†	30.14	765.5	66	18.9		W			4		5		W	0	0	Long	WSW	Fair	B. F. Woodbury.
Brigantine George, W. H Cannoplin, Monabo, Porto Rico ...†	30.16	766.1	80	26.7		E			1		2			Heavy	Heavy	Smooth		Clearing	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto. pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 22, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.12	765 0				W			3		4			0	0	Cloudy	Dr. Ollive.
Nemours			30.21	767.4	73.0	22.8	68	Calm			0		0			0	0	Clear	Metge.
Algiers			30.21	767.3	72.3	22.4	66	NNE			3		0			0	0	Clear	Nicolas.
La Calle			30.19	766 8	67.5	19.7	79	NNW			3		4			0.098	2.5	Cloudy	Fonfrède.
Tunis			30.14	765.6															Jacques.
Sfax			30.24	768 2															Gau.
Saida			30.24	768.1															Bernard.
Tebessa			30.20	767.1	59.7	15.4	38	NW			5		7			0	0	Very cloudy	Watrin.
Geriville					64.6	18.1	46	NE			1		0			0	0	Clear	Bruguiaux.
Laghouat			30.24	768.1	75.9	24.4	33	NW			1		0			0	0	Clear	Suart.
Biskra			30.19	766 9	78.4	25.8	44	E			1		3			0	0	Pretty fair	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.36	745.7	29.89	759.3	66.2	19.0	47	S			4		5			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.04	737.5	29.80	756.8	57.2	14.0	57	WSW	8.9	4.0			10			0.035	0.9		Dr. Wierzbicki.
Eperies	28.91	734.3	29.77	756.2	61.2	16.2	47	S			1	9c				0	0		Julius Mikolik.
Gratz	28.66	727.9	29.89	759.3	59.4	15.2	66	S			3		3			0	0		Andreas Rospini.
Hermannstadt	28.43	722 1	29.84	757.8	59.0	15.0	76	NW			1		10			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.57	725.7	29.91	759 8	50.5	10.3	86	WSW			4		10			0.031	0.8		The Staff.
Lemberg	28.79	731.3	29.76	756.0	54.9	12.7	67	NW			3		9			0.012	0.3		Dr. T. Stanecki.
Polt	29.87	758.6	29.93	761.4	65.5	18.6	58	WSW			1		3			0	0		I.R.Hydrographic Office.
Szathmar	29.41	747.0	29.87	758.7	60.3	15.7	42	NW			2		7			0	0		Pet. Pancsics, S. J.
Szegedin	29.58	751.3	29.85	758.3	60.8	16.0	50	N			4		6			0	0		Karl Stancel.
Trieste	29.88	759 0	29.98	761 6	64.0	17.8	63	Calm			0		2			0	0	Almost clear	P. Busin.
Vienna	29.17	740.8	29.89	759.2	56.5	13.6	63	W			4		10			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.53	750.0	29.62	752.3	52.0	11.1		N	23	10.3			6			0.040	1.02	D. clouds	W. Boswell.
Ardrossan	29.67	753.6	29.69	754.1	53	11.7		WNW			5		7					D. clouds	G.Carrick.
Armagh, (Observatory)	29.60	751.8	29.84	757.9	53.9	12.2		NW	7	3.1			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.76	755.9	53.1	11.7		W	40	17.9			10					Overcast	John Hartnup.
Bolton (Sharples)	29.19	741.4	29.70	754.4	50.7	10.4		W	24	10.7			10					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.30	744.2	29.70	754.4	57.7	14.3	62	W			5		7			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.92	760.0	29.95	760.7	83	28.3		NE			2		6					Gloomy	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.68	753.9	29.77	756.1	60.0	15.6		NW			1		10					Overcast	H. Todd.
Cardington			29.77	756.1	60.0	15.6		NW			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.69	754.1	29.82	757.4	60.0	15.6		NW			1		9k					Gloomy	Sapper W. Gibson, R. E.
Donaghadee	29.74	755.4	29.78	756.4	57	13.9		WNW			4		8					D. clouds	J. Mac Gowan.
Dover	29.77	756.1	29.80	756.9	59	15.0		W			4		7					¾ clouded	J. Costello.
Falmouth (Observatory)	29.80	756.9	30.03	762.7	58.2	14.6		WNW			5		10					Squally	The Staff.
Fort Napier, Natal	27.81	706.4	30.02	762.5	76.4	24.7		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.96	761.0	86	30.0		NE			1		10					D. clouds	
Galway (Queen's College)			29.90	759.4	57	13.9		NW			4		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.03	764.0	30.13	765.3	71.4	21.9		NE			2		2					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.46	748.3	29.66	753.4	57.9	14.4		W			4		9					Gloomy	D. G. Maclean.
Great Yarmouth	29.72	754.9	29.72	754.9	59	15.0		WNW			3		6					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.64	752.8	29.81	757.2	63.0	17.2		W			4		10					Overcast	The Staff, for G.B.Airy.
Guernsey	29.81	757.2	30.62	762.5	58	14.4		NW			4		7					D. clouds	Dr. S.E Hoskins, F.R.S.
Helston	30.23	767.8	30.35	770.9	60	15.6		W			6		2k			0	0	Gloomy	M. P. Moyle.
Holyhead	29.79	756.7	29.82	757.4	57	13.9		W			5		4					D. clouds	John Tilston.
Jersey	29.76	755.9	30.06	763.5	56.8	13.8		W			5		10					Threatening	J. Fisher.
Kew (Observatory)	29.78	756.4	29.82	757.4	60.0	15.6		W	18	8.0			10					Threatening	The Met'g'l Office.
Leicester (Museum)	29.54	750.3	29.79	756.7	58.6	14.8		SW			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.92	760.0	29.99	761.7	68.2	20.1					3		1					Blue sky	A. King.
Nairn	29.56	750.8	29.65	753.1	55	12.8		WNW			2		10					Overcast	W. D. Penny.
Nassau, Bahamas			30.10	764.5	89.5	26.9		S			2		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.56	750.8	29.75	755.6	60.0	15.6		S			2		10kd		S	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.26	743.2	29.78	756.4	55.2	12.9		W			5-6		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.60	751.8	29.85	758.2	60	15.6		W			2		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.91	759.7	29.98	761.5	62.3	16.8		WNW			4		8					D. clouds	John Merrifield.
*Roche's Point	29.63	763.2	30.04	763.0	57	13.9		NW			6		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.76	755.9	29.92	760.0	54	12.2		W			5		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys			29.64	752.8	48.6	9.2		NW	19	8.5			1					Blue sky	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey.	29.74	755.4	29.80	756.9	57.4	14.1		NNE			2		9			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	29.48	748.8	29.76	755.9	56.8	13.8		W			3		9			Blank	Blank	Overcast	W. F. Cooper.
Silloth Rectory	29.66	753.4	29.69	754.1	56.4	13.6	93	NW			4		10			0.124	3.15	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.75	755.6	55.5	13.1		W	26	11.6			10					Squally	Rev. S. J. Perry.
Stratfield Turgiss	29.65	753.1	29.86	758.4	59.0	15.0		W			3-5		8					Squally	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.04	763.0	30.06	763.5	60	15.6		W			7		8					Gloomy	W. Newcombe.
Valencia Observatory)	30.01	763.0	30.07	763.8	55.9	13.3		WNW	24	10.7			10			Blank	Blank	D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.12	765.0	30.16	766.1	72.0	22.2	57	SSE	5.6	2.5		0	0			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.75	755.6	46.0	7.8	81	NW			2		7k			0.01	0.3		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.65	753.1	58.9	14.9		W			2		10k			0.20	5.1	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.86	758.4	30.05	763.4	72.4	22.4	84	SSE	1.7	0.8		0	2			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.61	752.1	29.70	754.4	52.0	11.1	91	NW	20	8.9			8			0	0	Squally	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.74	755.4	51	10.6		NW			4	5	5	W		0.2	5.		J. Youngclause.
North Unst, Shetland I's			29.60	751.8				NW			4	5	3	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert,																			Capt. J.P Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore. N. 40° 00′, W. 70° 50′			30.31	769.9	58	14.4		S			4					3	S	Misty	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma,																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German. S. 34° 41′, E. 21° 28′			30.16	766.1	62	16.7		Calm			0		0					Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra,																			Capt. W. P. Hughes.
S. S. Strathleven,																			Capt. C. W. Pearson
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
San José	26.19	665.2	29.91	759.7	68.0	20.0	92	SE			2	9cs				1.30	33.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.54	750.2	29.58	751.4	50.5	10.3	88	NW			2		10					Raining	
Fanöe	29.48	748.8	29.50	749.3	51.3	10.7	93	WSW			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.34	745.1	29.38	746.2	45.1	7.3	72	SE			4		10						
Thorshavn (Faröe)	29.50	749.3	29.54	750.2	47.5	8.6	70	W			5		5						
Vestervig	29.38	746.2	29.47	748.6	49.8	9.9	95	SSW			4		10						

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

FRENCH SERIES.

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

Alençon, Normal School	29.50	749.2	30.05	763.2	69.8	21	41	SW			4		2c		SW	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.78	756.4	29.89	759.2	70.2	21.2	69	WNW			2		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.62	752.3	29.87	758.7	58.8	14.9	53	W			5		10n		W	0	0		Klein, Commandant.
Avignon, Normal School	29.97	761.1	30.04	763.1	76.1	24.5	34	NNW			2		0			0	0	Clear	Giraud, Director.
Bar-sur-Seine	29.39	746.5	29.93	760.2	70.9	21.6	18	SW to NW			4		5kn		WNW	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.63	752.7	29.89	759.2	67.8	19.9	38	W			4		5		WNW	0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.13	739.8	30.00	762.0	65.5	18.6	49	S			2		2		SW	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.95	760.8	30.13	765.8	71.8	22.1	28	NW			2		2k		Calm	0	0	Almost clear.	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.21	742.0	30.14	765.6	68.0	20	47	S			2		8c		SW	0	0	Very cloudy	Marlot, Director.
Bourges, Normal School	29.50	749.3	30.04	763.0	68.0	20	54	NW			2		2c		SW	0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	29.89	759.1	30.13	765.3	65.5	18.6	62	WNW			2		9		NW	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.85	758.2	29.93	760.2	61.7	16.5	94	WSW			1		2		WSW	0	0	Slightly cld'y	M. Bietrix, Director.
Carcassonne, N. School	29.69	754.1	30.09	764.3	74.1	23.4	43	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.61	752.1	29.92	759.9	72.1	22.3	58	SW			2		8		NW	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.38	746.2	29.93	760.3	70.3	21.3	79	NW			1		5		SE	0	0	Cloudy	E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.68	728.4	29.98	761.4	74.7	23.7	43	W			2		5			0	0		Alluard, Director.
Commercy, Normal School	29.05	737.8	29.88	759.0	68.7	20.4	25	W			4		ck		W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.97	735.7	30.11	764.7	68.4	20.2	49	NW			1		5		W	0	0		L. Kina, Director.
Grenoble, Normal School	29.34	745.2	30.08	764.1	70.9	21.6	50	NW			1		ck		SE	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.93	760.1	30.14	765.4	69.1	20.6	41	SW			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.74	755.3	30.04	763.0	66.2	19	51	NNW			4		5		WNW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. Schoo	29.09	738.8	29.99	761.8	67.1	19.5	47	SSW			1		5c		S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	30.04	763.0	30.15	765.8	62.6	17.0	70	W			6		0			0	0	Clear	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.44	747.8	30.04	763.1	72.1	22.3	36	SE			1		5			0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.78	756.3	30.04	763.0	73.4	23.0	36	W			1–2		5		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.91	734.3	29.93	760.1	66.0	19.2	63	SW			3		kn		SW	0	0		Barbier, Director.
Mont-Louis	24.98	634.4	30.21	767.4	55.4	13.0	49	WNW	11.2	5.0			0			0	0		M. Cave, for Dr. Fines.
Nice	30.02	762.6	30.06	763.5	67.6	19.8	76	SW			1				W	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.84	758.0	30.04	763.0	77.5	25.3	27	NW			1		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	30.00	761.9	30.10	764.6	73.8	23.2	32	NW	18.6	8.3			2	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.68	576.1			49.1	9.5							1	NE	SW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.02	737.0	30.05	763.2	72.3	22.4	36	S			1		2k	S	S	0	0	Slightly cld'y	M. Tallieu
Puy de Dome (Summit) Ob	25.20	640.0			50.9	10.5	68	W			6		5			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.17	766.3	30.20	767.1	71.1	21.7	42	W			2		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	29.89	759.2	29.98	761.4	67.3	19.6	47	W			4		8		W	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.03	762.8	30.07	763.6	63.0	17.2	63	W			3		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.77	756.1	29.93	760.3	70.3	21.3	37	W			3		8	WNW	WNW	0	0	Very cloudy	E. Renou, Director.
Tarbes, Normal School	29.13	739.9	30.19	766.9	68.0	20	49	W											T. Huguet, Director.
Toulouse, Observatory	29.48	748.8	30.21	767.3	70.3	21.3	49	WNW			3		5			0	0	Cloudy	B. Bailland, Dir.
Tours	29.84	757.8	30.03	762.8	72.0	22.2	36	W			2		3		WNW	0	0	½ covered	M. de Tastes.
Versailles, Observatory	29.44	747.8	29.94	760.4	69.1	20.6	36	NW			4					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.26	743.3	29.95	760.6	75.6	24.2	38	SW			1		8		N	0	0	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.15	765.7	30.17	766.4	81.0	27.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.65	753.2			69.8	21.0	28	W			2		7		W	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.84	757.9	29.87	758.6	66.6	19.2	73	SE	5.4	2.4		10ck		W		0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1.00 instead of 0.53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.84	735.1	29.80	756.9	66.9	19.4	52	SW			6		8cks	SW		0.028	0.7	Raining	Prof. Dr. Hoh.
Berlin	29.55	750.6	29.72	754.9	60.8	16.0	27	NW			2		10			0	0		Prof. Dr. Arndt.
Breslau	29.27	743.5	29.80	756.9	57.6	14.2	57	W			3		8			0.011	0.27		Royal University Obs'y
Carlsruhe	29.42	747.3	29.84	757.9	65.5	18.6	66	SW			7		10	NW		0	0		Albert Senz.
Cassel	29.10	739.2	29.71	754.5	64.4	18.0	57	SW			3		10	SW		0.020	0.50	Thunder-storm	Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.49	749.1	29.85	758.3	68.5	20.3	37	SW			2		10			0	0		Physical Society.
Friedrichshafen	28.57	725.7	30.00	762.0	56.3	13.5	71	SW			3		10	SW		0.453	11.5		Chief Telegrapher Wilhelm.
Hamburg	29.57	751.1	29.64	752.9	58.1	14.5	71	SSW			5		10			0.106	2.7		Dr. Reinhold Kleeman.
Kiel	29.60	751.9	29.62	752.3	52.9	11.6	87	W			1		10			0.020	0.52		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.56	750.7	29.64	752.8	53.6	12.0	57	W			5		4	W		0.008	0.2		Prof. E. Luther.
Köslin			29.66	753.4	56.3	13.5		W			2		4			0	0		H. Müller.
Leipsic Observatory	29.35	745.6	29.77	756.1	60.4	15.8	75	WSW			3		10			0.016	0.4		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.53	750.1	29.76	755.8	59.5	15.3	57	SSW			3		10ks	WSW				Raining	Dr. Assmann.
Memel	29.55	750.5	29.60	751.7	50.2	10.1	86	WSW			4-5		8cs						Reinbrecht & Issermann
Munich	28.12	714.2	29.98	761.4	59.0	15.0	55	SW			6		9			0.031	0.8	Squally	Dr. C. Lang.
Neufahrwasser	29.65	753.0	29.66	753.4	57.2	14.0	41	WSW			4		8			0	0		A. Lothes.
Neustadt (Palatinate)	29.30	744.1	29.82	757.4	69.1	20.6	42	WSW			4		10	W		0	0		Realiehrer Dicknether.
Posen	29.45	747.9	29.73	755.1	58.5	14.7	49	W			6		10			0.016	0.4		Prof. Dr. Magener.
Strassburg (in Alsace)	29.38	746.2	29.91	759.8	66.6	19.2	59	SSW			6		10			0	0		Imp. University Observatory.
Stuttgart	28.99	736.3	29.85	758.3	66.2	19.0	48	W					10			0.016	0.4	Light rain	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.39	721.0	29.96	760.9	63.7	17.6	63	W	5.1	2.3			10		W	0.071	1.8	Raining	Reallehrer J. Hopfner.
Wustrow	29.64	752.8	29.66	753.4	53.4	11.9	76	SSW			3		8s			0.177	4.5		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.41	747.0	29.79	756.7	73.6	23.1		SW			3.0		5k					½ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.59	751.6	29.64	752.8	86.1	30.1	75	SW					1	W		0	0	D. clouds	
Deesa	29.13	739.9	29.58	751.3	101.7	38.7	24	W	12.8	5.7			4	WNW		0	0	D. clouds	
Bombay	29.72	754.8	29.75	755.7	87.1	30.6	69	WNW	10	4.5			3		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.85	708.3	29.70	754.5	87.5	30.8	35	WNW	24	10.7			4			0	0	D. clouds	
Belgaum	27.23	691.6	29.73	755.1	81.7	27.6	62	WSW	11	4.9			8	NW		0	0	D. clouds	
Lahore	28.74	730.0	29.44	747.7	107.3	41.8	20	Calm	0.8	0.4			0			0	0	Misty	
Roorkee	28.55	725.0	29.40	746.7	99.9	37.7	24	Calm	2	0.9			0			0	0	Sultry	
Agra	28.96	735.5	29.49	749.1	104.1	40.1	30	W	4.1	1.8			0			0	0		
Nagpur	28.55	725.3	29.55	750.5	100.9	38.3	22	N	3.9	1.7			8		W	0	0	D. clouds	
Jubbulpore	28.24	717.4	29.56	750.7	96.7	35.9	23	Calm	5.3	2.4			8			0	0	Overcast	
Lucknow	29.18	741.3	29.54	750.4	99.2	37.3	24	WNW	0.9	0.4			5	SSE		0	0	D. clouds	
Allahabad	29.24	742.8	29.54	750.4	98.7	37.1	31	NW	1.4	0.6			9		NW	0	0	D. clouds	
Patna	29.35	745.4	29.52	749.8	99.0	37.2	36	NNE	1.2	0.5			2	NE	NE	0	0		
Hazaribagh	27.58	700.5	29.54	750.2	88.6	31.4	42	E	11.0	4.9			4		SW	0.34	8.6	Thunder-showers	
Cuttack	29.53	750.0	29.61	752.0	90.1	32.3	55	S	0.6	0.3			2			0	0	D. clouds	
Calcutta (Alipore)	29.56	750.8	29.58	751.4	88.7	31.5	63	SSW	7.0	3.1			2		SSW	0	0	D. clouds	
Goalpara	29.20	741.8	29.61	752.2	75.8	24.3	93	NNE	2.8	1.2			9		SW	1.13	28.7	Thunder-showers	
Chittagong	29.59	751.6	29.68	753.8	85.1	29.5	82	S	5.5	2.5			0			0	0		
Sibsagar	29.37	746.1	29.71	754.6	78.7	25.9	89	NE	3.5	1.6			10	SW	SW	1.27	32.3	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.55	750.6	29.95	760.8	68.5	20.3	48	SE	3.1	1.4			5			0	0		Prof. Giovanni Clodig.
Milan	29.43	747.4	29.93	760.3	69.8	21.0	47	SSW	10.5	4.7			6	W		0	0		Prof. Schiaparelli.
Padua	29.84	757.9	29.95	760.6	67.5	19.7	45	W	9.8	4.4			10	NE		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.05	737.9	29.95	760.6	67.3	19.6	51	ESE	0.7	0.3			5	N		0	0		Prof. P. F. Denza.
Genoa	29.85	758.3	30.04	763.1	63.5	17.5	63	SW	5.6	2.5			4	SW		0	0		Prof. G. M. Garibaldi.
Mondovi	28.04	712.3	29.92	760.0	68.0	20.0	42	N			4		1	N		0	0		Prof. D. C. Bruno.
Pesaro	29.92	759.9	29.97	761.1	65.8	18.8	50	E	11.2	5.0			1			0	0		Prof. Luigi Guidi.
Florence	29.74	755.5	30.00	762.0	67.1	19.5	37	W			4		4			0	0		Cav. F. Meucci.
Leghorn	29.98	761.5	30.06	763.6	66.0	18.9	57	SW	3.1	1.4			9			0	0		Prof. P. Monte.
Rome	29.84	757.9	30.01	762.3	69.1	20.6	38	NNW	3.8	1.7			1			0	0		Prof. P. S. Ferrari
Lecce	29.70	754.3	29.95	760.7	58.6	14.8	52	NNW	12.5	5.6			7	NW		0.067	1.7		Prof. C. De Giorgi
Cosenza	29.07	738.4	29.95	760.7	66.6	19.2	67	SW	0	0			6			0.165	4.2		Prof. D. Ct i.
Cagliari	29.87	758.7	30.06	763.5	70.0	21.1	35	NW			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.81	757.1	30.07	763.6	60.6	15.9	52	NW	8.1	3.6			9	NW		0.283	7.2		Prof. G. Ciacciatore.
Syracuse	29.92	759.9	29.96	761.0	66.4	19.1	56	E	3.8	1.7			6	SW		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.48	748.8	29.99	761.8	64.4	18.0	44	WSW	4.9	2.2			6	SW		0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					61.4	16.3	84	NE	2.6	1.1			10cs			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.71	754.6	29.91	759.7	62.8	17.1	84	SSW	1.0	0.5			10s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.72	754.9	29.79	756.6	59.9	15.5	95	NNE	4.4	2.0		0	10ck;s		NE	0.445	11.56	Cloudy	The Staff.
Wakayama	29.79	756.6	29.84	757.9	58.1	14.5	72	NW	1.9	0.8		2ck				0	0	Fair	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.04	763.1	57.6	14.2	58	Calm			0	3cs	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	23.68	601.5			61.7	16.5	68	Calm	0	0		1s	0	ENE;SW		0	0	Clear	Vicente Fernandez.
Leon	24.43	620.6	30.01	762.3	67.3	19.6	73	S			2	7c	0	SW		0	0	Cloudy	Prof. M. Leal.
Mazatlan	29.71	754.6	29.97	761.1	73.5	23.1	78	E			1	7ck	0			0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.69	586.5	30.01	762.3	58.8	14.9	70	Calm	0	0		0	0			0.02	0.5	Hazy	The Staff
Morelia	23.97†	608.7†			70.9	21.6	50	SE			3	2c	2k	SE	SE	0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.95	608.3	29.92	760.0	62.8	17.1	68	Calm			0	0	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.44	595.3	30.26	768.5	50.0	10.0	37	Calm	0	0		0	0			Inap.	Inap.	Very clear	Prof. P. Spina.
San Luis Potosi	24.24	615.6	30.12	765.1	64.2	17.9	60	SE			1	6	2	W	SE	0	0	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.91	759.4	29.91	759.7	79.9	26.6	93	W			1	1	4	NW	N	0.05	1.2	Threatening	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.61	574.2	30.16	765.0	60.1	15.6	62	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,368 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	29.79	756.7	29.79	756.7	59.9	15.5		WSW			5					0	0		
Helder	29.62	752.2	29.67	753.6	57.6	14.2		W								0	0		
Hellevoetsluis	29.69	754.0	29.69	754.0	55.4	13.0		SW			4					0	0		
Utrecht	29.76	755.9	29.76	755.9	59.5	15.3	63	WSW			5					0	0		
	29.69	754.1	29.74	755.3	65.3	18.5	56	WSW			4		5			0.031	0.8	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.45	747.9	29.50	749.3	48.9	9.4	54	SW	5.4	2.4			2			0.260	6.6		
Brönö	29.22	742.3	29.26	743.3	44.2	6.8	80	SW	18	8			10			0.268	6.8	Raining	
Christiania	29.24	742.7	29.38	746.3	57.7	14.3	30	SSE	9	4			10			0	0		
Tromsö	29.32	744.7	29.37	746.1	47.5	8.6	60	SSE	11	5			2			0	0		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.19	766.8	30.40	772.1	65.1	18.4	72	ENE			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.18	741.2	30.15	765.9	75.2	24.0	39	N	2.5	1.1			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.13	765.3	30.22	767.5	66.0	18.9	70	SW	3.8	1.7			6			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.89	759.3	30.24	768.2	76.3	24.6	41	ENE	4.9	2.2			0			0	0		The Staff.
Ponta Delgada (Azores)	30.26	768.5	30.33	770.3	65.1	18.4	64	ESE	11.2	5.0			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Costa																				
Benguela, Benguela			29.97	761.2	73.4	23.0		Calm			0		2		NW	1			D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello																				
Mossamedes, Benguela			30.01	762.3	65.3	18.5		WNW			3		1						Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes,																				
Macao, China			29.93	760.2	82.6	28.1		SW			2		10		SW	1			Overcast	J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.74	755.5	29.76	756.0	46.9	8.3	49	NE	9	4			10						Capt. Sseliwerstow.
Astrakhan	29.69	754.2	29.61	752.1	76.8	24.9	36	W	20	9			4ks						Capt. Wisganow.
Barnaul	29.11	739.4	29.58	751.4	73.6	23.1	38	N	0	0			4					Light clouds	Meteorological Obs.
Dorpat	29.25	742.9	29.48	748.9	59.7	15.4	35	S	4	2			8k						Prof. Dr. Weihrauch.
Ekaterinburg	28.59	726.1	29.50	749.4	68.7	20.4	46	NE	7	3		4c						Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.12	739.6	29.37	746.0	74.3	23.5	48	ENE	4	2			10						Physical Cabinet.
Kertch	29.80	757.0	29.82	757.5	55.4	13.0	73	N	2	1			5						Lagorio.
Kieff	29.11	739.3	29.74	755.3	56.5	13.6	41	W	2	1			9cks						Physical Cabinet.
Krotkowo*	28.96	735.6	29.41	746.9	71.6	22.0	69	NNW	2	1			9ks						Cand. Fatjanow.
Lugan	29.47	748.6	29.67	753.7	59.5	15.3	37	NNW	22	10			6						Meteorological Obs.
Moscow	29.06	738.1	29.61	752.0	47.3	8.5	66	WSW	7.8	3.5			1ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.78	756.4	29.85	758.2	57.9	14.4	50	N	9	4			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.47	748.4	29.55	750.6	46.9	8.3	89	SE	20	9			10ns						
Nukuss																			
Orenburg																			
Pekin (China)	29.48	748.7	29.62	752.3	73.6	23.1	41	SW	7	3			0					Thunder	Physical Observatory.
St. Petersburg	29.50	749.2	29.51	749.6	46.9	8.3	66	ENE	9	4			9ks;n						Central Physical Obs.
Tashkend	28.23	717.0	29.72	754.9	76.6	24.8	46	Calm	0	0			10					Heavy clouds	Teich, A. M.
Tiflis	28.39	721.1	29.76	755.9	70.0	21.1	59	Calm	0	0			6ks						Physical Observatory.
Vladivostock																			
Warsaw	29.26	743.2	29.68	753.9	55.6	13.1	65	WNW	16	7			10ks						Astronomical Obs.
Wilna	29.20	741.6	29.61	752.2	51.3	10.7	92	WSW	4	2			5					Heavy clouds	Astronomical Obs.
Yeniseisk	29.34	745.3	29.62	752.3	60.3	15.7	56	Calm	0	0			0						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.04	763.0	30.14	765.6	66.2	19	58	SSE	2.6	1.17			0			0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.23	767.9	30.29	769.3	70.5	21.4	51	NW	2.7	1.22		0	0			0	0	Clear.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.27	692.7			66.2	19.0	46	NE	8.3	3.70			0			0	0	Clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.8	30.17	766.2	70.5	21.4	44	SE	2.6	1.67		1	0	N		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	30.02	762.6	30.17	766.3	82.4	28.0	46	NW	3.8	1.72		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.34	745.2	30.21	767.4	72.9	22.7	45	NE	10.5	4.7			0			0	0	Clear.	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.2	30.00	761.9	78.1	25.6	79	SE	4.0	1.8		6ck	1s	N		2.476	62.9	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.86	758.4	29.91	759.7	84.2	29.0	81	S	6.6	3.0			7ck		W	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.13	765.3	30.23	767.8	76.8	24.9	55	ESE	8.2	3.7		0	1		SE	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.92	759.9	30.01	762.2	76.3	24.6	92	SE	0	0		4s	2k	SE	SE	0.128	3.25	Clear.	Enriquetiadea, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.43	747.5	29.47	748.5	46.8	8.2		SE			4		9			0	0		
Umea	29.26	743.1	29.31	744.4	38.8	3.8	57	S			2		10			0.307	7.8		
Hernosand	29.30	744.3	29.35	745.6	56.1	13.4	34	W			2		5			0.394	10.0		
Stockholm	29.31	744.4	29.48	748.9	54.3	12.4	33	W			2		8			0.008	0.2		
Wisby	29.44	747.7	29.50	749.2	52.5	11.4	50	W			4		0			0	0		
Sub-Series.																			
Upsala	29.32	744.6	29.40	746.8	53.6	12.0	40	NNW	4.0	1.8			8			0.004	0.10		Nils Ekholm.

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

Swedish Naval Series.	Sea or swell. Height scale 0–9	Direction from—	Rain-fall.		
Barque Australia					J. P. Pâhlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.63	727.2	30.02	762.4	68.0	20.0	38	W			2		10			0	0	Covered	The Observatory.
Zurich	28.39	721.2	30.02	762.6	55.9	13.3	69	SW			1		9			0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.8 mm.; Thermometer, +2.5 Cent. Relative Humidity, —18 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.84	758.0	54.0	12.2	80	N	17	7.5			10		NE	0.291	7.4		The Observatory.
Fao, Persian Gulf																			
Valona			29.99	761.7	67.6	19.8		NW			1		5			0.28	7.	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.86	758.5	92.1	33.4		SW			2	7c				0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					43.8	6.6		NE	1	0.4			10n			Inap.	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	30.30	769.6	30.36	771.1	42.0	5.6	96	NE	6	2.7			10n			0.86	21.8	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.26	768.6	30.30	769.6	42.0	5.6	97	NE	4	1.8			10n					Sprinkling	H. J. Cundall, C. E.
Cornwall, Ontario	29.79	756.7	29.99	761.7	50.0	10.0	96	E			2		10s			0.650	16.51	Cloudy	James Smith, M. A.
Dalhousie, N. B.																1.17	29.7		H. A. Johnson.
Father Point, Quebec	30.29	769.4	30.31	769.9	40.4	4.7	100	NE	15	6.7			10n			0.53	13.5	Light rain	J. McWilliams.
Fredericton, N. B.	30.25	768.3	30.32	770.1	44.1	6.7	91	NE	7	3.1			10n			0.570	14.48	Foggy	Prof. Harrison.
Fort Garry, Manitoba	28.82	732.0	29.63	752.6	54.7	12.6	78	SE	5	2.2		5k	5ks	S		0	0	Cloudy	James Stewart.
Granton, Ontario	28.55	725.2	29.62	752.3	55.0	12.8	93	S			3		10n			0.36	9.1	Cloudy	James Grant.
Halifax, N. S.	30.20	767.1	30.32	770.1	57.2	14.0	87	SW	3	1.3		2k	7ks			0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.36	745.7	29.74	755.4	62.5	16.9	80	S			3	10cs	0	S		0.38	9.7	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.54	750.3	29.87	758.7	58.1	14.5	93	E	4	1.8			10n			0.56	14.2	Light rain	S. Woods, M. A.
Little Glace Bay, N. S.	30.28	769.1	30.32	770.1	40.2	4.6	89	E	2	0.9			10n			0	0	Cloudy	C. H. Rigby.
Montreal, Quebec	29.85	758.2	30.05	763.3	49.0	9.4	95	NE	11	4.9			10n			0.42	10.7	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	30.07	763.8	30.10	764.5	47.0	8.3	66	NE			2		10n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.12	739.6	29.80	756.9	61.6	16.4	98	SE	9	4.0			10s			Inap.	Inap.	Raining	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.02	737.1	29.69	754.1	61.3	16.3	91	E	26	11.6		5k	5ks	SE		0.60	15.2	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.08	738.6	29.81	757.2	64.7	18.2	94	SE			1		10n			0.55	14.0	Raining	J. F. Jeffers, M. A.
Port Dover, Ontario	29.10	739.1	29.77	756.1	59.1	15.1	100	S	14	6.3		5k	5n	S		0.29	7.4	Threatening	H. Morgan.
Port Stanley, Ontario	29.11	739.4	29.74	755.4	56.1	13.4	87	SW	20	8.9			10n			0.41	10.4	Cloudy	M. Payne.
Quebec, Quebec	29.86	758.4	30.19	766.8	46.0	7.8	100	NE			7		10n			0.95	24.1	Heavy rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.38	746.2	29.84	757.9	55.5	13.1	75	W	8	3.6			9ks			0.60	15.2	Cloudy	W. H. McIntyre.
St. John, N. B.	30.14	765.5	30.31	769.9	48.0	8.9	100	S	2	0.9			Fog			0	0	Foggy	G. Murdock, C. E.
Saugeen, Ontario	28.93	734.8	29.61	752.1	61.1	16.2	76	S	37	16.5			10n			0.63	16.0	Cloudy	K. Stewart.
Stratford, Ontario	28.41	721.6	29.66	753.4	55.0	12.8	90	SW	20	8.9			10n			0.446	11.33	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.29	769.4	30.33	770.4	43.0	6.1	92	NW	1	0.4			10n			0.01	0.3	Foggy	T. C. Hill, C. E.
Toronto, Ontario	29.40	746.7	29.77	756.1	55.0	12.8	95	S	8	3.6			10n			0.32	8.1	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.66	728.0	29.70	754.4	57.5	14.2	81	SE	41	18.3			10s			0.27	6.9	Light rain	Professor Wolverton.
Yarmouth, N. S.	30.23	767.8	30.30	769.6	51.4	10.8	99	SW	9	4.0			Fog			0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.11	764.8	30.37	771.4	38	3.3	100	NW				10	10			0.08	2.0	Fine	John Delany.
St. Pierre, N. F., l'Hopital Maritime.			30.16	766.1	42.8	6.0		E			1					0	0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.03	762.7	30.11	764.8	73	22.8	50	S	12	5.4		5k	Haze	S	Calm	0	0	Fair	
Alpena, Michigan	28.96	735.6	29.58	751.3	49	9.4	93	N	18	8.0			10n		Calm	1.70	43.2	Light rain	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.86	733.0	29.98	761.5	67	19.4	90	S	1	0.4			10n		Calm	2.64	67.1	Light rain	
Atlantic City, New Jersey	30.18	766.6	30.19	766.8	64	17.8	89	SE	9	4.0		Haze	Fog	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.87	758.7	30.06	763.5	71	21.7	90	Calm	0	0			10s		Calm	0.88	22.4	Cloudy	
Baltimore, Maryland	30.06	763.5	30.11	764.8	73	22.8	72	S	13	5.8			10ks		SW	0	0	Cloudy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	66	18.9	84	S	16	7.2		0	Haze		Calm	0	0	Clear	
Bismarck, Dakota	27.91	708.9	29.77	756.1	50	10.0	71	W	24	10.7		2c	0	SW		0.24	6.1	Fair	
Boerne, Texas	28.52	724.4	29.80	756.9	63	17.2	100	SE			1	2c	0	Calm		0	0	Clear	
Boise City, Idaho	27.06	687.3	30.02	762.5	48	8.9	63	E	1	0.4			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.09	764.3	30.24	768.1	68	20.0	84	S	11	4.9		Haze	8ks	Calm	SW	0	0	Fair	
Brackettville, Texas	28.78	731.0	29.80	756.9	73	22.8	81	SE	6	2.7		0	8s		SE	0	0	Fair	
Breckenridge, Minnesota	28.74	730.0	29.71	754.6	52	11.1	86	S	18	8.0			10n		S	Inap.	Inap.	Light rain	
Brownsville, Texas	29.92	760.0	29.97	761.2	77	25.0	78	E	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.12	739.6	29.78	756.4	67	19.4	74	S	10	4.5			10s		S	0.35	8.9	Cloudy	
Burkes, Arizona					67	19.4	37	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.76	755.9	30.04	763.0	65	18.3	84	S	9	4.0		5ck	2ks	W	SW	0.26	6.6	Fair	
Cairo, Illinois	29.71	754.6	30.10	764.5	66	18.9	84	S	5	2.2		1ck	Fog	W		0.06	1.5	Clear	
Campo, California	27.34	694.4	29.91	759.7	40	4.4	82	W	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.19	766.8	30.20	767.1	73	22.8	81	SE	18	8.0			10s		SE	0	0	Cloudy	
Cape Henry, Virginia	30.14	765.5	30.16	766.1	69	20.6	80	S	12	5.4		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	74	23.3	81	S	13	5.8		5c	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	30.14	765.5	30.17	766.3	65	18.3	84	S	21	9.4		0	Haze		Calm	0	0	Clear	
Castroville, Texas	29.19	741.4	29.88	758.9	67	19.4	79	SW	1	0.4		2c	0	Calm		0	0	Fair	
Cedar Keys, Florida	30.00	762.0	30.02	762.5	75	23.9	90	S	18	8.0			10n		S	0.57	14.5	Light rain	
Charleston, South Carolina	30.04	763.0	30.09	764.3	77	25.0	86	SW	4	1.8			10n		Calm	0.05	1.3	Light rain	
Charlotte, North Carolina	29.20	741.7	29.99	761.7	70	21.1	85	S	6	2.7			10s		S	0.25	6.3	Cloudy	
Chattanooga, Tennessee	29.25	742.9	30.03	762.7	65	18.3	84	NW	2	0.9		1k	0	NW		0.88	22.4	Clear	
Cheyenne, Wyoming	24.04	610.6	29.98	761.5	40	4.4	48	SE	4	1.8		1c	0	NW		0	0	Clear	
Chicago, Illinois	29.26	743.2	29.94	760.5	53	11.7	73	SW	3	1.3		0	0			0	0	Clear	
Chincoteague, Virginia	30.16	766.1	30.17	766.3	66	18.9	93	SE	20	8.9		8k	0	S		Inap.	Inap.	Cloudy	
Cincinnati, Ohio	29.39	746.5	30.03	762.7	61	16.1	71	SW	6	2.7		4k	0	W		0.45	11.4	Fair	
Cleveland, Ohio	29.16	740.7	29.86	758.4	60	15.6	68	SW	23	10.3			10ks		SW	0.21	5.3	Cloudy	
Coleman City, Texas	28.15	715.0	29.74	755.4	73	22.8	90	SW	5	2.2		0	0			0	0	Clear	
Columbus, Ohio	29.14	740.1	29.96	761.0	61	16.1	66	SW	15	6.7		5k	0	W		0.09	2.3	Fair	
Concho, Texas	28.01	711.4	29.62	752.3	71	21.7	75	S	12	5.4		5c	0	SW		0	0	Fair	
Corsicana, Texas	29.54	750.3	29.99	761.7	65	18.3	89	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.29	744.0	29.92	760.0	55	12.8	74	E	2	0.9		0	0			0	0	Clear	
Dayton, Washington T'y					46	7.8	92	W			1		10n		Calm	0.01	0.3	Light rain	
Deadwood, Dakota	25.34	643.6			41	5.0	74	Calm	0	0		0	0			0.10	2.5	Clear	
Decatur, Texas	28.77	730.7	29.90	759.4	66	18.9	79	SE	11	4.9		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.13	765.3	30.15	765.8	68	20.0	84	S	27	12.1		0	Haze			0	0	Hazy	
Denison, Texas	29.21	741.9	29.98	761.5	66	18.9	84	SE	3	1.3		0	0			0	0	Clear	
Denver, Colorado	24.81	630.2	30.03	762.7	46	7.8	47	S	3	1.3		2c	0	S		0	0	Fair	
Des Moines, Iowa	29.00	736.6	29.87	758.7	54	12.2	61	NE	2	0.9		2cs	5s	W	W	0	0	Fair	
Detroit, Michigan	29.94	737.6	29.69	754.1	54	12.2	93	W	16	7.2			10n		W	1.46	37.1	Light rain	
Dodge City, Kansas	27.35	694.7	29.47	748.5	60	15.6	82	Calm	0	0		0	0			0.32	8.1	Clear	
Dubuque, Iowa	29.25	742.9	29.94	760.5	54	12.2	55	NE	1	0.4		5k	2s	W	Calm	0	0	Fair	
Duluth, Minnesota	29.24	742.7	29.93	760.2	40	4.4	65	NE	8	3.6		0	0			0	0	Clear	
Eagle Pass, Texas	29.14	740.1	29.84	757.9	75	23.9	77	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	30.18	766.6	30.25	768.3	46	7.8	100	S	2	0.9			Fog		Calm	0.10	2.5	Dense fog	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.12	739.6	29.81	757.2	65	18.3	58	SW	18	8.0			10s		SW	0.07	1.8	Cloudy	
Escanaba, Michigan	29.23	742.4	29.88	758.9	46	7.8	69	N	9	4.0			10s		N	0	0	Cloudy	
Florence, Arizona	28.37	720.6	29.97	761.2	62	16.7	46	SW	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	44	6.7	52	E	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.74	704.6	29.54	750.3	47	8.3	70	NW	19	8.5		5cs	0	NW		0.08	2.0	Fair	
Fort Custer, Montana	26.73	678.9			46	7.8	47	SW	6	2.7		0	0			0.20	5.1	Clear	
Fort Davis, Texas	25.20	640.1	30.16	766.1	64	17.8	39	S	4	1.8		0	0			0	0	Clear	
Fort Elliot, Texas	26.87	682.5	29.06	738.1	59	15.0	59	S	8	3.6		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.55	750.6	30.08	764.0	59	15.0	94	N	2	0.9			10n		Calm	0.12	3.0	Light rain	
Fort Grant, Arizona	25.19	639.8	29.99	761.7	64	17.8	12	NE	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.64	727.4	29.87	758.7	67	19.4	84	SE	6	2.7		0	0			0	0	Clear	
Fort Keogh, Montana	27.21	691.1			42	5.6	60	SW	10	4.5		5c	0	Calm		Inap.	Inap.	Fair	
Fort McKavett, Texas	27.69	703.3	29.53	750.0	69	20.6	75	SW	8	3.6		9cs	0	S		0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.77	730.7	29.85	758.2	63	17.2	94	N	8	3.6			10n		Calm	Inap.	Inap.	Light rain	
Fort Stevenson, Dakota	27.84	707.1			48	8.9	85	W	20	8.9		2cs	0	Calm		0.34	8.6	Clear	
Fort Verde, Arizona					56	13.3	40	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.92	760.0	29.96	761.0	75	23.9	81	NE	6	2.7		1c	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.23	742.4	29.87	758.7	52	11.1	86	W	16	7.2		2k	0	W		0.57	14.5	Clear	
Helena, Montana					38	3.3	63	NW	3	1.3		10cs	0	NW		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.22	742.2	29.98	761.5	60	15.6	82	W	3	1.3		0	5s		S	2.57	65.3	Fair	
Indianola, Texas	29.95	760.7	29.98	761.5	77	25.0	73	NE	6	2.7		5c	0	Calm		0	0	Fair	
Jacksboro, Texas	28.81	731.8	29.90	759.4	69	20.6	80	SE	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	30.03	762.7	30.06	763.5	76	24.4	82	SE	1	0.4		5cs	0	W		0.02	0.5	Fair	
Keokuk, Iowa	29.29	744.0	29.88	758.9	63	17.2	57	SW	3	1.3		2c	0	Calm		0	0	Clear	
Key West, Florida	29.98	761.5	30.02	762.5	78	25.6	91	SE	11	4.9			10ks		SE	0.07	1.8	Threatening	
Kittyhawk, North Carolina	30.17	766.3	30.19	766.8	68	20.0	84	SE	15	6.7		8k	0	SW		0	0	Fair	
Knoxville, Tennessee	29.06	738.1	30.04	763.0	65.5	18.6	76	NE	2	0.9		0	5ks		SW	0.67	17.0	Fair	
La Crosse, Wisconsin	29.16	740.7	29.89	759.2	49	9.4	85	NE	3	1.3			Fog		Calm	0	0	Foggy	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	62	16.7	51	Calm	0	0		0	5s		Calm	0	0	Fair	
Laredo, Texas																			
Leavenworth, Kansas	29.02	737.1	29.84	757.9	61	16.1	66	S	4	1.8			10s		NW	0	0	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.72	754.9	30.03	762.7	65	18.3	94	Calm	0	0		0	0			0.03	0.8	Clear	
Los Angeles, California	29.61	752.1	29.94	760.5	57	13.9	94	SE	2	0.9			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.48	748.8	30.03	762.7	62	16.7	77	SW	4	1.8		0	Sm'e		Calm	0.59	15.0	Clear	
Lynchburg, Virginia	29.37	746.0	30.03	762.7	70	21.1	80	S	8	3.6			10s		S	0.01	0.3	Cloudy	
Madison, Wisconsin	28.94	735.1	29.91	759.7	53	11.7	80	N	1	0.4		0	0			0	0	Clear	
Marquette, Michigan	29.22	742.2	29.93	760.2	44	6.7	76	NW	6	2.7			10s		NW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.29	718.6	30.00	762.0	68	20.0	84	SW	2	0.9		8cs	0	W		0	0	Fair	
Memphis, Tennessee	29.71	754.6	30.04	763.0	66	18.9	84	NE	4	1.8		0	Sm'e			0.35	8.9	Clear	
Milwaukee, Wisconsin	29.18	741.1	29.91	759.7	51	10.6	72	W	6	2.7		10k	0	W		Inap	Inap.	Cloudy	
Mobile, Alabama	29.96	761.0	30.00	762.0	75	23.9	90	N	4	1.8			10s		Calm	0.90	22.9	Cloudy	
Montgomery, Alabama	29.80	756.9	30.03	762.7	69	20.6	100	NE	6	2.7			Fog		Calm	2.94	74.7	Foggy	
Morgantown, West Virginia	29.03	737.3	29.99	761.7	66	18.9	79	S	12	5.4			10ks		SW	0.47	11.9	Threatening	
Mt Washington, N H	24.02	610.1	30.38	771.6	48	8.9	92	SW	40	17.9		8c	Sm'e	SW	SW	0.14	3.6	Fair	
Nashville, Tennessee	29.52	749.8	30.05	763.3	65	18.3	78	NW	3	1.3		0	Haze		Calm	0.93	23.6	Clear	
New Haven, Connecticut	30.10	764.5	30.21	767.3	67	19.4	84	SE	7	3.1			10s		SE	0	0	Cloudy	
New London, Connecticut	30.21	767.3	30.26	766.6	62	16.7	88	SE	8	3.6			10s		Calm	0	0	Cloudy	
New Orleans, Louisiana	29.91	759.7	29.97	761.2	77	25.0	86	S	6	2.7		Haze	8s	Calm	NE	0.06	1.5	Fair	
Newport, Rhode Island	30.21	767.3	30.26	768.6	61	16.1	88	S	8	3.6			10s		SW	0	0	Cloudy	
New River, North Carolina																			
New York, New York	30.00	762.0	30.18	766.6	64	17.8	89	SE	12	5.4		1c;hz'	Haze	SE;Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.09	764.3	30.14	765.5	78	25.6	61	S	9	4.0		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.07	687.6	29.62	752.3	50	10.0	86	NW	12	5.4		0	0			0.33	8.4	Clear	
Olympia, Washington Ter.	29.79	756.7	29.83	757.7	45.0	7.2	96	N	1	0.4			10m		S	0.13	3.3	Light rain	
Omaha, Nebraska	28.71	729.2	29.76	755.9	66	18.9	64	SW	12	5.4		0	8s		SW	0	0	Fair	
Oswego, New York	29.58	751.3	29.89	759.2	72	22.2	71	SE	12	5.4		2c	5ks	SW	SW	0.30	7.6	Fair	
Pembina, Dakota	28.75	730.2	29.56	750.8	48	8.9	70	S	17	7.6			10s		S	0	0	Cloudy	
Pensacola, Florida	29.37	761.2	30.00	762.0	74	23.3	95	S	4	1.8		Haze	9s	Calm	SW	0.09	2.3	Cloudy	
Philadelphia, Pennsylvania	30.10	764.5	30.14	765.5	70	21.1	80	S	20	8.9		10k	0	SW		0	0	Cloudy	
Phœnix, Arizona	28.73	729.7	30.44	773.2	80	26.7	31	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.84	453.1	30.05	763.3	23	— 5.0	60	SW	28	12.5		2cs	0	Calm		Inap.	Inap.	Clear	
Pilot Point, Texas	29.22	742.2	30.04	763.0	69	20.6	75	S	7	3.1		0	0			0	0	Clear	
Pioche, Nevada	24.00	609.6	29.78	756.4	52	11.1	18	NW	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.16	740.7	29.94	760.5	64	17.8	78	S	8	3.6			10s		S	0.08	2.0	Cloudy	
Port Huron, Michigan	28.92	734.6	29.96	750.8	53	11.7	100	SW	32	14.3			10n		Calm	1.56	39.6	Light rain	
Portland, Maine	30.14	765.5	30.19	766.8	62	16.7	83	S	8	3.6		0	Fog			0	0	Clear	
Portland, Oregon	29.84	757.9	29.91	759.7	48	8.9	82	S	3	1.3			10n		SW	0.10	2.5	Light rain	
Portsmouth, North Carolina					75	23.9	77	SE	10	4.5		2cs	Haze	Calm	Calm	0	0	Light haze	
Prescott, Arizona	24.76	628.9	30.12	765.0	51	10.6	40	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	30.01	762.2	30.02	762.5	78	25.6	78	E	15	6.7		8c	1ks	W	SE	0.42	10.7	Fair	
Red Bluff, California	29.56	750.8	29.91	759.7	64.5	18.1	51	NW	4	1.8		4cs	0	W		0	0	Fair	
Rio Grande City, Texas	29.74	755.4	29.95	760.7	71	21.7	90	SE	4	1.8		0	0			0	0	Clear	
Rochester, New York	29.20	741.7	29.78	756.4	70	21.1	85	S	8	3.6			10n		Calm	1.05	26.7	Light rain	
Roseburg, Oregon	29.44	747.8	30.00	762.0	50	10.0	80	W	1	0.4			10n		Calm	Inap.	Inap.	Light rain	
Sacramento, California	29.82	757.4	29.90	759.4	57	13.9	81	SE	3	1.3		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.99	761.7	65	18.3	78	S	9	4.0		1cs	0	Calm		Inap	Inap.	Clear	
St. Paul, Minnesota	29.01	736.8	29.82	757.4	51	10.6	79	SE	7	3.1			10s		SE	Inap	Inap	Cloudy	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	47	8.3	41	SE	4	1.8		2k	0	W		0.02	0.5	Clear	
San Antonio, Texas	29.28	743.7	29.97	761.2	67	19.4	84	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.88	758.9	29.95	760.7	59	15.0	88	SW	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.17	740.9	29.82	757.4	59	15.0	76	SW	28	12.5			10ks		SW	1.07	27.2	Cloudy	
Sandy Hook, New Jersey	30.14	765.5	30.17	766.3	68	20.0	79	S	10	4.5		Haze	Fog	Calm	Calm	0	0	Fair	
San Francisco, California	29.91	759.7	29.98	761.5	53	11.7	80	SW	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	52	11.1	35	Calm	0	0		0	0			0	0	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	73	22.8	90	S	12	5.4			10n		S	1.30	33.0	Light rain	
Shreveport, Louisiana	29.80	756.9	30.02	762.5	70	21.1	80	Calm	0	0		0	0			Inap.	Inap.	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.12	765.0	30.15	765.8	75	23.9	77	SW	17	7.6		8k	Haze	SE	Calm	0	0	Cloudy	
Socorro, New Mexico	25.38	644.6	29.44	747.8	68	20.0	18	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.32	744.7	29.97	761.2	64	17.8	76	SW	6	2.7		0	0			0	0	Clear	
Springfield, Massachusetts	30.08	764.0	30.21	767.3	67	19.4	84	S	7	3.1			10ks		S	0	0	Cloudy	
Stockton, Texas	26.87	682.5	29.87	758.7	67	19.4	74	SE	7	3.1		0	0			0	0	Clear	
Thatcher's Island, Mass	30.19	766.8	30.24	768.1	57	13.9	100	S	14	6.3			Fog			0	0	Dense fog	
Toledo, Ohio	29.14	740.1	29.80	756.9	60	15.6	82	SW	28	12.5		5k	0	SW		0.74	18.8	Fair	
Tucson, Arizona	27.47	697.7	30.02	762.5	70	21.1	32	E	1	0.4		0	0			0	0	Clear	
Umatilla, Oregon	29.58	751.3	30.07	763.8	51	10.6	72	NW	3	1.8			10s		W	Inap.	Inap.	Cloudy	
Uvalde, Texas	29.01	736.8	29.81	757.2	71	21.7	85	Calm	0	0		2c	0	W		0	0	Fair	
Vicksburg, Mississippi	29.80	756.9	30.06	763.5	73	22.8	76	NE	3	1.3		0	0			0	0	Clear	
Virginia City, Montana	24.17	613.9	29.65	753.1	31	— 0.6	69	Calm	0	0		5ck	0	NW		0.09	2.3	Fair	
Visalia, California	29.48	748.8	29.85	758.2	59.5	15.3	73	SW	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.99	761.7	30.10	764.5	71	21.7	80	S	18	8.0			10ks		S	0	0	Cloudy	
Wickenburg, Arizona					57	13.9	41	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.06	763.5	30.14	765.5	75	23.9	72	SE	12	5.4		10ck	0	S		0	0	Cloudy	
Winnemucca, Nevada	25.55	649.0	29.91	759.7	39	3.9	46	SW	12	5.4		2cs	0	SW		0	0	Clear	
Wood's Holl, Massachusetts	30.22	767.6	30.26	768.6	62	16.7	88	SW	14	6.3		10k	0	SW		0	0	Cloudy	
Yankton, Dakota	28.53	724.6	29.77	756.1	62	16.7	51	NW	20	8.9		10k	0	NW		0	0	Cloudy	
Yuma, Arizona	29.63	752.6	29.78	756.4	66	18.9	59	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			65.0	18.3	72	Calm	0	0			10n			0.12	3.0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	77	25.0	86	Calm	0	0		8ck	0	Calm		2.60	66.0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.96	761.0	29.97	761.2	80	26.7	79	Calm	0	0		2c	2s	Calm		0.10	2.5	Fair	James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	78	25.6	86	E	7	3.1		5k	5s	NE	E	0.10	2.5	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	78	25.6	91	E			1		8ks			0.360	9.14	Cloudy	C. J. Hering.
Puerto Ferrio, U.S.Col'bia ‖	29.36	745.7	29.91	759.7	78	25.6	89	Calm			0		8k			0.46	11.7		Francesco J. Cisneros.
Rivas, Nicaragua					77	25		SE					8k		SE	0	0	Covered	Carl Flint.
Santiago de Cuba, W. I.	29.97	761.2	30.00	762.0	78	25.6	82	NNE	3.6	1.6		8ck	2k	SE	Calm	0.24	6.1		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.80	756.9	29.85	758.2	29.0	— 1.7	95	E	13	5.8		6k	2s	NE	E	0.50	12.7	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Bracketville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,263 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.02	762.5	75	23.9	90	NE	5	2.2	.....	.....	8d	.....	SE	0	0	.....	.....	Fair	
§ Navy Yard, Portsmouth, N. H.	30.20	767.1	62	16.7	83	SE	6	2.7	.....	.....	5?	.....	.....	0	0	.....	.....	Cloudy?	
Naval Hospital, Yokohama, Japan	29.80	756.9	62	16.7	94	NE	.....	.....	1	.....	10n	.....	NE	0.61	15.5	.....	.....	Gloomy	
§ Adams, Punta Arenas, Costa Rica	29.92	760.0	80	26.7	87	NNW	.....	.....	1	.....	2	.....	NW	.....	.....	.....	.....	Fair	
§ Alaska, Ancon, Peru *	30.01	762.2	63	17.2	83	S	.....	.....	1	.....	10	.....	.....	.....	.....	Smooth	.....	Cloudy	
§ Alert, Yokohama, Japan	29.77	756.1	66	18.9	89	NNE	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy	
Alliance, Norfolk, Va.	30.16	766.1	73	22.8	90	S	.....	.....	1	.....	2	.....	Calm	0	0	.....	.....	Clear.	
§ Ashuelot, Shanghai, China	29.87	758.7	68	20.0	79	SSW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	30.16	766.1	62	16.7	100	SSW	6	2.7	.....	.....	10	.....	.....	0	0	.....	.....	Hazy.	
§ Constitution, New York, N. Y.	30.17	766.3	63	17.2	94	S	4	1.8	.....	.....	Fog	.....	Calm	.....	.....	.....	.....	Foggy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.19	766.8	71	21.7	85	SSE	10	4.5	.....	.....	2	.....	SE	0	0	.....	.....	Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.94	760.5	60	15.6	100	SW	2.4	1.1	.....	.....	8	.....	SW	0	0	.....	.....	Cloudy	
§ Jamestown, Sitka, Alaska *	29.72	754.9	42	5.6	91	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Smooth	.....	Cloudy	
Kearsarge, N. 14° 20′, W. 81° 50′	29.93	760.2	81	27.2	79	NNE	.....	.....	3	.....	5	.....	NE	.....	.....	Smooth	ENE	Fair	
§ Lackawana, N. 17° 51′ W. 103° 34′ †	29.95	760.7	79	26.1	78	NW	.....	.....	2	.....	5	.....	NW	.....	.....	Smooth	NW	Fair	
§ Marion, S. 38° 25′. W. 56° 10′	30.12	765.0	48	8.9	63	WNW	.....	.....	6	.....	10	.....	WNW	0	0	Rough	WNW	Cloudy	
§ Michigan, Erie, Pa.	29.77	756.1	64	17.8	100	SW	.....	.....	5	.....	10	.....	SW	.....	.....	.....	.....	Cloudy	
§ Monocacy, Shanghai, China	29.87	758.7	69	20.6	90	S	.....	.....	1	.....	10	.....	SW	.....	.....	.....	.....	Cloudy	
§ New Hampshire, Port Royal, S. C.	30.03	762.7	75	23.9	90	SSE	16	7.2	.....	.....	10	.....	S	0.05	1.3	.....	.....	Drizzling	
Nipsic, Genoa, Italy	30.05	763.3	68	20.0	65	SW	.....	.....	1	.....	5	.....	.....	.....	.....	Smooth	.....	D. clouds	
§ Onward, Ancon Bay, Peru †	30.00	762.0	64	17.8	83	S	.....	.....	2	.....	5	.....	S	.....	.....	Long	W	Fair	
§ Palos, Shanghai, China	29.86	758.4	72	22.2	90	S	.....	.....	2	.....	5?	.....	.....	.....	.....	.....	.....	Cloudy	
§ Passaic, Washington, D. C.	30.11	764.8	74	23.3	76	S	.....	.....	3	.....	5	.....	S	0	0	.....	.....	Fair	
§ Pensacola, Vallejo, Cal.	29.93	760.2	58	14.4	82	SW	.....	.....	2	.....	2	.....	.....	.....	.....	Smooth	.....	D. clouds	
§ Portsmouth, N. 32° 43′, W. 71° 43′	30.25	768.3	67	19.4	95	ESE	.....	.....	3	.....	5	.....	.....	0	0	Mod'ate	SE	Fair	
§ Powhatan, N. 37° 35′, W. 76° 13′	30.14	765.5	70	21.1	90	SSW	.....	.....	4	.....	2	.....	.....	.....	.....	.....	.....	Fair	
§ Quinnebaug, N. 41° 18′, W. 19° 11′	30.41	772.4	60	15.6	82	ENE	.....	.....	1	.....	0	.....	.....	.....	.....	Smooth	.....	Clear.	
§ Richmond, Shanghai, China	29.78	756.4	71	21.7	90	SSE	.....	.....	1	.....	10	.....	SSE	.....	.....	.....	.....	Overcast	
§ Rio Bravo, Brownsville, Texas †	30.21	767.3	70	21.1	100	SW	1	0.4	.....	.....	2	.....	W	0	0	.....	.....	Misty	
§ Saratoga, Lisbon Portugal	30.26	768.6	71	21.7	71	E	.....	.....	3	.....	0	.....	.....	0	0	.....	.....	.....	
§ Shenandoah, Montevideo, Uruguay	30.27	768.8	43	6.1	75	NW	.....	.....	3	.....	2	.....	.....	.....	.....	Smooth	.....	Fair	
§ St. Louis, League Island, Pa.	30.15	765.8	69	20.6	85	S	17	7.6	.....	.....	8	.....	S	0	0	.....	.....	Cloudy	
Swatara, N. 7° 15′, E. 102° 20′ †	29.84	757.9	84	28.9	87	NE	.....	.....	1	.....	8	.....	Calm	.....	.....	Smooth	.....	Fair	
§ Tennessee, N. 21° 06′, W. 84° 17′	29.93	760.2	82	27.8	83	ENE	15	6.7	.....	.....	8	.....	ENE	0	0	Smooth	.....	Cloudy	
Ticonderoga, Yokohama, Japan	29.78	756.4	63	17.2	100	NNE	.....	.....	3	.....	10	.....	N	.....	.....	Smooth	NNE	Drizzling	
§ Trenton, Palermo, Sicily	29.96	761.0	59	15.0	76	WSW	.....	.....	2	.....	10	.....	.....	19 h'rs Mod'ate	19 h'rs Mod'ate	Mod'ate	NE	Cloudy	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.18	766.6	63	17.2	94	S	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Misty	
§ Wabash, Boston, Mass.	30.24	768.1	67	19.4	84	SSW	12	5.4	.....	.....	2	.....	.....	0	0	.....	.....	Hazy	
§ Wachusett, S. 43° 48′, W. 63° 11′	29.75	755.6	55	12.8	87	W	.....	.....	2–4	.....	8	.....	S; W	Light	Light	Mod'ate	W	Cloudy	
Wyoming, Villafranca, France	30.04	763.0	66	18.9	68	S	.....	.....	1	.....	5	.....	S	.....	.....	Smooth	S	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 44° 39′, W. 62° 50′	30.31	769.9	42	5.6		SW			4		10					Smooth	SW	Foggy	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 56° 45′, W. 12° 07′ *†	30.22	767.6	66	18.9	94	NW			4		5		NW	0	0	Small	NW	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 36° 23′, W. 122° 03′ †	30.02	762.5	52	11.1	93	WNW			6		0			0	0	Heavy	WNW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Hong-Kong, China †	29.92	760.0	74	23.3	95	NE			0		10		NE					Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, San Francisco, Cal †	29.98	761.5	55	12.8	93	NW			2		k		NW	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal †	30.02	762.5	52	11.1		SE			1		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, N. 40° 20′, W. 124° 30′ †	30.03	762.7	48	8.9		NW			3		8		W			Rough	WNW	Hazy	
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.																			

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 15° 22′, W. 95° 48′.....†	29.81	757.2	84	28.9	83	NW			2		8		NNW			Light	NW	Cloudy	F. A. Johnston.
§S. S. Australia,																			Banneman.
§S. S. China, W. B. Seabury. N. 34° 04′, W. 120° 42′....†	29.91	759.7	51	10.6	79	WNW			6		0					Heavy	WNW	Clear	
§S. S. City of Chester. J. M. Lucklan.																			J. M. Lucklan.
§S. S. City of New York, W. B. Cobb. N. 3′ 35′, W. 164° 10′.....†	29.81	757.2	78	25.6	91	E			4		8		NE	Light	Light	Mod'ate	NE	Raining	W. H. Hawes.
§S. S. City of Panama, M. Connolly. N. 31° 15′, W. 119° 30′....†	29.95	760.7	57	13.9	94	SE			1		0			0	0	Mod'ate	NW	Foggy	R. Thompson & J. Andersen.
§S. S. City of Peking, G. G. Berry, N. 34° 35′, E. 149° 48′.....†	29.94	761.7	61	16.1	94	ESE			4		10		SE			Mod'ate	ESE	Misty	
§S. S. City of Sidney, H. C. Dearborn S. 34° 06′, E 159° 15′....*†	29.94	760.5	69	20.6		NW			5		2		NW	0	0	Long	SE	Clear	E. LeSack.
§S.S. City of Tokio, J. Maury N. 44° 20′, E 178° 07′.....†	30.29	769.4	47	8.3	62	SSW			2		8		SW	0	0	Smooth		Cloudy	F. S. Doane.
§S. S. Colima, R. R. Searle, San Blas, Mexico.....†	29.90	759.4	78	25.6	95	NNE			2		2		Calm	0	0	Small	NW	Misty	
§S.S. Dakota, D. E. Griffiths N 43° 06′, W. 124° 45′.....†	29.97	761.2	51	10.6	??	S			4		10		W	Mod'ate	Mod'ate	Mod'ate	SW	Overcast	D. E. Griffiths.
§S.S. Granada, J. M Cavarly N. 12° 08′, W. 88° 02′.....†	29.97	761.2	79	26.1	92	S			3		10n		SSE	Slight	Slight	Mod'ate	S	Raining	
§S. S. Idaho, N. 41° 03′, W. 125° 36′....†	30.01	762.2	60	15.6		NW			1		0			0	0	Rough	NW	Clear	
§S.S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes,																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			
S. S. Britanic, H. Perry, N. 51° 19′, W. 15° 14′.....†	30.32	770.1	52	11.1		W			6		2		WNW			Mod'ate	WNW	Showery	H. N. Goulden.
S. S. Celtic, B. Glendell,																			J. Jones.
S. S. Republic, P. J. Irving N. 40° 51′, W. 69° 14′....*†	30.51	774.9	61	16.1		SW			2		0			0	0	Light	E	Clear.	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.21	767.3	66	18.9		SSW			1		10			0	0			Gloomy	Mehaffey.
Schr Adelie Fuller, J. Jorgensen, Satilla river, Georgia,	30.08	764.0	78.	25.6	78	Calm	0	0			8k		SW	0.22	5.6			Cloudy	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis Cape Mala Pascua, Porto Rico..†	30.00	762.0	81	27.2		E			3		10		E	0	0	Mod'ate	SE	Cloudy	L. L. Lewis.
Bark. Carrie Hessie, B. F. Woodbury, S. 34° 10′, E. 17° 00′.....*†	30.26	768.6	64	17.8		WSW			2		0			0	0	Smooth	WSW	Fair	B. F. Woodbury.
Brigantine George, W. H Champlin. N. 18° 00′, W. 66° 00′.....†	30.16	766.1	79	26.1		E			1		8		E	Showers.		Smooth		Threatening	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 23, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.12	765.0				W			3		4			0	0	Cloudy	Dr. Ollive.
Nemours			30.17	766.3	74.1	23.4	59	Calm			0		0			0	0	Clear	Metge.
Aiglera			30.21	767.2	76.6	24.8	59	W			2		0			0	0	Clear	Nicolas.
La Calle			30.21	767.3	70.3	21.3	68	NNW			1		2			0.028	0.7	Fair	Fonfrède.
Tenis			30.20	767.1															Jacques.
Sax			30.28	769.0															Gan.
Saida			30.20	767.1															Bernard.
Tebessa			30.25	768.4	71.2	21.8	16	NNE			2		1			0	0	Very fair	Watrin.
Geriville					77.4	25.2	35	SW			1		0			0	0	Clear	Brugniaux.
Laghouat			30.24	768.2	78.4	25.8	16	S			3		0			0	0	Clear	Suart.
Biskra			30.21	767.4	80.2	26.8	46	E			1		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.32	744.6	29.84	758.0	70.9	21.6	44	S			5		3			0.087	2.2	Thunder-storm	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.02	737.1	29.78	756.4	56.1	13.4	77	WSW	9.6	4.3			10			0.028	0.7		Dr. Wierzbicki.
Eperies	28.84	732.6	29.69	754.1	65.8	18.8	64	S			1	10c.haze				0	0		Julius Mikolik.
Gratz	28.65	727.7	29.88	759.0	61.5	16.4	72	NNE			2		10			0	0		Andreas Rospini.
Hermannstadt	28.46	722.8	29.88	759.0	54.5	12.5	93	NW			1		10			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.63	727.2	29.97	761.2	53.2	11.8	80	W			2		9			0.236	6.0		The Staff.
Lemberg	28.73	729.8	29.71	754.5	55.8	13.2	78	NW			3		10			0.150	3.8		Dr. T. Stanecki.
Pola	29.86	758.4	29.97	761.2	69.1	20.6	50	SSE			1		7			0	0		I.R. Hydrographic Office.
Szathmar	29.39	746.4	29.84	758.0	61.7	16.5	93	S			4		8			0.110	2.8		Pet. Pancsics, S. J.
Szegedin	29.57	751.1	29.84	758.0	64.4	18.0	64	W			3		8			0	0		Karl Stancel.
Trieste	29.85	758.1	29.95	760.7	66.2	19.0	69	Calm			0		3			0	0		P. Busin.
Vienna	29.19	741.4	29.93	760.1	59.0	15.0	63	W			6		6			0.083	2.1		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

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

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

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BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Aberdeen	29.33	745.0	29.42	747.3	59.7	15.4		SW	23	10.3			5			Blank	Blank	Blue sky	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	29.42	747.3	29.66	753.4	53.0	11.7		SW	15	16.7									S. Call.
Bidston (Liverpool Obs)			29.76	755.9	53.9	12.2		SW	25	11.2			10					Raining	John Hartnup.
Bolton (Sharples)	29.21	741.9	29.72	754.9	51.9	11.1		SW	39	17.4			10					Raining	Thomas Mackereth.
Bradford, Yorkshire																0.24	6.1		J. McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	77	25.0		NE			2		8					Overcast	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.77	756.1	29.87	758.7	59.0	15.0		WSW			1		10					Overcast	H. Todd.
Cardington			29.85	758.2	61.4	16.3		NW			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.81	757.2	29.94	760.5	59.0	15.0		SW			3		7k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.60	751.8	29.64	752.8	54	12.2		WSW			4		10					Overcast	J. Mac Gowan.
Dover	29.91	759.7	29.93	760.2	58	14.4		W			5		7					¾ clouded	J. Costello.
Falmouth (Observatory)	29.81	757.2	30.04	763.0	59.5	15.3		WSW			5		6					Squally	The Staff.
Fort Napier, Natal	27.95	709.4	30.13	765.3	75.0	24.2		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.81	757.2	30.04	763.0	89	31.7		W			1		8					D. clouds	
Galway (Queen's College)			29.67	753.6	53	11.7		WSW			5		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.09	764.3	30.14	765.5	72.8	22.7		NE			2		1					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.32	744.7	29.53	750.0	52.1	11.2		SW			5		9k					Gloomy	D. G. Maclean.
Great Yarmouth	29.85	758.2	29.85	758.2	58	14.4		W			3		7					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.74	755.4	29.92	760.0	58.7	14.8		WSW			5		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.88	758.9	30.09	764.3	57.5	14.2		WSW			3		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.21	767.3	30.34	770.6	61	16.1		WSW			6		2c			0	0	Fine	M. P. Moyle.
Holyhead	29.73	755.1	29.78	756.4	52	11.1		SW			5		10					Misty	John Tilston.
Jersey	29.85	758.2	30.14	765.5	56.9	13.8		W			4		5					D. clouds	J. Fisher.
Kew (Observatory)	29.89	759.2	29.93	760.2	59.0	15.0		WSW	22	9.8			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.57	751.1	29.82	757.4	58.9	14.9		SW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.04	763.0	30.12	765.0	71	21.7		NE			2		0					Blue sky	A. King.
Nairn	29.27	743.4	29.36	745.7	59	15.0		WSW			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.06	763.5	60.5	15.8		E			2		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.61	752.1	29.80	756.9	62.1	16.7		WSW			3		10kd		W	0.007	0.18	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.30	744.2	29.82	757.4	55.9	13.3		SW			5		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.68	753.9	29.94	760.5	58	14.4		WSW			3		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.95	760.7	30.02	762.5	58.5	14.7		SW			5		10					Overcast	John Merrifield.
*Roche's Point	29.80	756.9	29.93	760.2	57	13.9		WSW			6		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.75	755.6	29.91	759.7	53	11.7		SW			5		10					Squally	John C. Walker.
Sandwick Manse, Orkneys			29.56	745.7	52.2	11.2		SW	11	4.9			10					Showery	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.92	760.0	29.99	761.7	62.0	16.7		SW			1		6					D. clouds	Serg't W. H. Lyne.
Sheffield	29.52	749.8	29.80	756.9	57.8	14.3		SW			1		10			Blank	Blank	Overcast	W. F. Cooper.
Silloth Rectory	29.60	751.8	29.63	752.6	51.8	11.0	95	W			6		10			0.465	11.81	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.75	755.6	51.3	10.7		SW	23	10.3			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.74	755.4	29.96	761.0	55.4	13.0		W			2-4		10					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.05	763.3	30.06	763.5	61	16.1		SW			6		6					D. clouds	W. Newcombe.
Valencia Observatory)	29.87	758.7	29.90	759.4	54.6	12.6		SW	35	15.6			10			Blank	Blank	Gloomy	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.18	766.6	30.22	767.6	71.8	22.1	61	SSE	23.3	10.4		2	6			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.33	750.0	56.0	13.3	76	NW			1		7k			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.54	750.3	56.0	13.3		W			6		10k			0.11	2.8	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.90	759.4	30.09	764.3	73.0	22.8	76	SSE	29.9	13.0		0	7			0.19	4.8	Showery	C. Meldrum.
Melbourne (Observatory)	29.93	760.2	30.02	762.5	50.8	10.4	82	N	10	4.5			7			0.19	4.8	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.36	745.7	54	12.2		SW			4	5	8	W		0.2	5.		J. Youngclause.
North Unst, Shetland I's			29.23	742.4				W			4		7			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Direction from	Weather	Observer.
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 40° 10′, W. 68° 00′	2	S	Misty	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Cape Town, C. Good Hope			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
San José	26.18	665.0	29.90	759.4	66.6	19.2	92	NE			2	7cs				0.16	4.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.60	751.9	29.65	753.1	55.2	12.9	44	NW			4		3						
Faröe	29.71	754.6	29.73	755.1	53.1	11.7	73	W			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.16	740.7	29.21	741.8	41.4	5.2	81	SW			2		2					Snowing	
Thorshavn (Faröe)	29.21	741.8	29.24	742.7	48.2	9.0	52	WNW			2		8						
Vestervig	29.57	751.1	29.67	753.5	51.4	10.8	79	SW			6		7						

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

FRENCH SERIES.

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

Alençon, Normal School	29.61	752.0	30.16	766.0	60.8	16	69	SW			1		8n		SW	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	29.92	760.0	30.03	762.7	64.4	18	55	WSW			1		8		E	0	0	Very cloudy	Vaillant, Director.
Arras, Engineer School	29.74	755.5	30.00	762.0	60.4	15.8	46	WNW			3	c	6k		W	0	0		Klein, Commandant.
Avignon, Normal School	30.00	761.9	30.08	763.9	69.8	21	44	N			4		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.54	750.3	30.09	764.2	62.1	16.7	53	WNW			1		10		WNW	0	0	Covered	C. Saillard, Director.
Beauvais, Normal School	29.80	756.8	30.06	763.5	64.9	18.3	50	WSW			3		8		WNW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.25	742.9	30.13	765.4	60.8	16	64	S			1		10		S	0.295	7.5	Covered	A. Carré, Director.
Bordeaux	30.00	761.9	30.19	766.9	64.4	18.0	48	WNW			1		8		NNW	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.29	744.0	30.21	767.4	59.7	15.4	66	W			1		10n	N	N	0.213	5.4	Covered	Marlot, Director.
Bourges, Normal School	29.60	751.9	30.15	765.7	63.9	17.7	72	W			1		5k		NW	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.91	759.6	30.15	765.8	64.4	18.0	67	SW			2		9		SW	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.95	760.8	30.03	762.7	62.6	17	80	SW			1		8		SW	0	0	Very cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.74	755.4	30.14	765.6	68.0	20	45	W			2		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'l	29.75	755.7	30.07	763.7	63.3	17.4	46	SW			2		8		NW	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.69	754.0	30.25	768.4	60.8	16	89	NW			4		10		SE	0	0	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.78	731.0	30.11	764.9	63.7	17.6	53	NW			1		10			0	0		Alluard, Director.
Commercy, Normal School	29.21	741.8	30.05	763.3	60.4	15.8	52	W			4		ckn	W	W	0.024	0.6		Dr. Coullet, Director.
Commune de Gréasque*	28.91	734.4	30.06	763.4	66.6	19.2	49	NW			3		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.41	747.0	30.17	766.2	61.9	16.6	80	ENE			1		kn			0.126	3.2		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	30.00	762.0	30.22	767.5	59.4	15.2	66	W			1		2		W	0	0	Slightly cl'dy	Mouillot, Director.
Le Mans, Normal School	29.84	757.8	30.14	765.6	59.4	15.2	66	W			2		10		W	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.25	742.9	30.16	766.0	58.1	14.5	78	W			1		5n		E			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	30.10	764.5	30.21	767.3	61.5	16.4	69	WSW			4		8		NW	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.54	750.4	30.16	766.0	61.9	16.6	55	NNW			1		10		NW	0.126	3.2	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.71	754.6	29.98	761.4	68.2	20.1	64	NW			7		1		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.02	737.2	30.06	763.5	59.5	15.3	78	SW			1		kn		SW	0.08	2.		Barbier, Director.
Mont-Louis	24.94	633.5	30.18	766.5	57.6	14.2	38	E	9.4	4.2			0			0	0		M. Cave, for Dr. Fines.
Nice	29.91	759.8	29.95	760.7	68.9	20.0	71	SE			4			SE	SE	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.87	758.7	30.07	763.7	71.1	21.7	20	N			3		0			0	0	Clear.	M. Boyer, Director.
Perpignan	29.99	761.8	30.10	764.5	68.9	20.5	35	NW	33.6	15.0			1	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.67	575.7			40.5	4.7							1		SW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.09	738.9	30.15	765.9	59.4	15.2	75	S			1		5s	S	S	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.24	641.2			40.5	4.7	87	WNW			3		10			0.024	0.6		Alluard, Director.
Rochefort, Naval Obs'y	30.21	767.3	30.24	768.1	68.2	20.1	54	W			3		10	NW	W	0	0	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.98	761.5	30.07	763.7	60.8	16.0	58	W			1		8		W	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.10	764.4	30.13	765.2	59.0	15.0	68	NW			2		5	NW	NW	0	0	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.92	759.9	30.08	764.1	61.9	16.6	51	W			2		10		W	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	29.13	739.9	30.19	766.9	66.2	19	56	W											T. Huguet, Director.
Toulouse, Observatory	29.53	750.1	30.26	768.6	62.6	17.0	50	NW			2		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.95	760.8	30.15	765.8	63.0	17.2	53	W			2		10		W	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.60	751.9	30.10	764.4	61.2	16.2	52	W			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.40	746.7	30.10	764.6	63.0	17.2	66	NW			1		5		SE	0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.14	765.5	30.17	766.2	81.3	27.4										0.08	2.		L'Abbé Marchésl
Paris, Montsouris Obs'y	29.80	757.0			62.1	16.7	52	W			2		10		W	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.85	758.1	29.87	758.8	67.1	19.5	84	SE	5.6	2.5		7c		W		0	0	Very cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 8, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.08	738.5	29.94	760.4	60.8	16.0	59	W			6		7n	W		0 047	1.2	Raining	Prof. Dr. Hoh.
Berlin	29.61	752.2	29.78	756.5	55.9	13.3	70	NW			4		7			0	0		Prof. Dr. Arndt.
Breslau	29.28	743.7	29.81	757.1	58.6	14.8	58	W			5		5			0.074	1.89	Rainy	Royal University Obs'y
Carlsruhe	29.58	751.3	30.00	762.1	57.9	14.4	91	N			0		10	W		0.193	4.9	Heavy rain	Albert Senz.
Cassel	29.28	743.8	29.89	759.2	62.1	16.7	45	NW			3		6	SW		0.028	0.72	Light rain	Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.66	753.3	30.02	762.6	64.6	18.1	58	W			1		10			0	0		Physical Society.
Friedrichshafen	28.64	727.5	30.07	763.8	57.2	14.0	72	SW			6		10	WSW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.74	755.5	29.82	757.3	55.0	12.8	68	WNW			6		5			0	0		Dr. Reinhold Kleeman.
Kiel	29.77	756.1	29.78	756.5	53.8	12.1	53	W			5		9			0.310	7.88		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.48	748.9	29.57	751.0	51.8	11.0	82	SW			4		10	W		0.031	0.8		Prof. E. Luther.
Köslin			29.67	753.5	55.6	13.1		W			6		1			0.213	5.4		H. Müller.
Leipsic Observatory	29.46	748.2	29.87	758.8	58.3	14.6	65	W			3		9	W		0.189	4.8		Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29.64	752.8	29.86	758.5	56.7	13.7	66	WSW			4		8ks	W		0.094	2.4	Raining	Dr. Assmann.
Memel	29.50	749.4	29.55	750.6	50.7	10.4	89	SW			2-3		10n						Reinbrecht & Issermann
Munich	28.20	716.2	30.06	763.5	57.6	14.2	64	W			6		8	W		0.409	10.4	Squally	Dr. C. Lang.
Neufahrwasser	29.60	751.9	29.62	752.3	59.0	15.0	58	NW			3		8			0.067	1.7		A. Lothes.
Neustadt (Palatinate)	29.46	748.3	29.99	761.7	61.2	16.2	61	W			1		10	W		0.087	2.2		Reallehrer Dicknether.
Posen	29.45	747.9	29.73	755.1	58.1	14.5	54	W			8		2			0.004	0.1		Prof. Dr. Magener.
Strassburg (in Alsace)	29.52	749.9	30.07	763.7	61.9	16.6	64	W			4		10	W		0.109	2.76		Imp. University Observatory.
Stuttgart	29.06	738.0	29.94	760.4	61.3	16.3	41	NW					10			0.008	0 2	Light rain	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.44	722.3	30.01	762.3	53.1	11.7	85	WNW	4.3	1.9			10		W	0.030	1.0	Light rain	Realleherer J. Hopfner.
Wustrow	29.74	755.3	29.76	755.9	53.1	11.7	69	W			5		10s			0.079	2.0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.8 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.65	753.0	30.04	762.9	65.3	18.5		SE			1.0		5k					½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.64	752.9	29.69	754.1	85.9	29.9	79	SW	38	17.0			1	W		0	0	Misty	
Deesa	29.17	740.9	29.62	752.4	102.6	39.2	16	WSW	14.1	6.3			0			0	0	Misty	
Bombay	29.74	755.4	29.78	756.3	87.1	30.6	69	WNW	13	5.8			2	WNW		0	0	D. clouds	
Poona (Yarrowda)	27.91	708.9	29.72	755.0	88.8	31.6	57	W	23	10.3			2			0	0	D. clouds	
Belgaum	27.26	692.5	29.77	756.2	81.0	27.2	65	SW	11	4.9			7	NW		0	0	D. clouds	
Lahore	28.76	730.5	29.46	748.2	107.8	42.1	13	W	1.8	0.8			0			0	0	Misty	
Roorkee	28.65	727.8	29.50	749 4	103.9	39.9	19	W	3	1.3			0			0	0	Sultry	
Agra	28.99	736.3	29.52	749 8	106.6	41.4	20	NW	6.2	2.8			0			0	0		
Nagpur	28.57	725.7	29.56	750.8	103.5	39.7	19	W	4.3	1.9			7		W	0	0	D. clouds	
Jubbulpore	28.27	718.1	29.58	751.2	100.5	38.1	19	NW	4.6	2.1			6			0	0	D. clouds	
Lucknow	29.20	741.8	29.56	750.9	98.3	36.8	30	NW	2.1	0.9			0			0	0	Blue sky	
Allahabad	29.22	742.0	29.51	749.6	102.7	39.3	30	Calm	1.3	0.6			0			0	0	Blue sky	
Patna	29.42	747.4	29.60	751 8	95.8	35.4	45	NE	1.5	0 7			0			0	0	Blue sky	
Hazaribagh	27.63	701.9	29.61	752.1	84.0	28.9	52	SE	8.2	3.7			9		NW	0 01	0.3	Thunder-storm	
Cuttack	29.54	750.3	29.62	752.4	90.5	32.5	37	S	0.4	0.2			2			0	0	D. clouds	
Calcutta (Alipore)	29.65	753.2	29.68	753.7	88.3	31.3	59	SW	8.0	3.6			8	W	W	0	0	D. clouds	
Goalpara	29.29	744.0	29.70	754.3	79.4	26.3	81	Calm	4.0	1.8			0			0.55	14.0	Blue sky	
Chittagong	29.61	752.1	29.70	754 4	79.9	26.6	84	ESE	4.6	2.1			10			0.31	7.9	D. clouds	
Sibsagar	29.44	747.8	29.78	756.3	79.1	26.2	91	SW	3.4	1.5			10	SW	SW	1.22	31.0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.53	750.1	29.93	760.3	70.7	21.5	43	SE	3.8	1.7			2			0	0		Prof. Giovanni Clodig.
Milan	29.39	746.6	29.90	759.4	71.1	21.7	37	WSW	6.9	3.1			5	SW		0	0		Prof. Schiaparelli.
Padua	29.32	757.4	29.93	760.1	68.7	20.4	51	WSW	3.1	1.4			1	WSW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.00	736.7	29.89	759.3	69.1	20.6	55	ESE	2.5	1.1			2	NE		0	0		Prof. P. F. Denza.
Genoa	29.81	757.1	30.00	761.9	63.1	17.3	66	SE	6.9	3.1			10	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.03	712.0	29.91	759.7	65.1	18.4	58	SSE			4		0			0	0		Prof. D. C. Bruno.
Pesaro	29.92	759.9	29.97	761.1	71.1	21.7	47	SW	11.9	5.3			7	SW		0	0		Prof. Luigi Guidi.
Florence	29.72	755.0	29.98	761.5	69.8	21.0	53	SE			2		10	SW		0	0		Cav. F. Meucci.
Leghorn	29.93	760.2	30.01	762.3	65.3	18.5	68	S	4.9	2.2			10			0	0		Prof. P. Monte.
Rome	29.90	759.5	30.08	763.9	61.9	16.6	81	SSW	8.7	3.9			10			0.146	3.7		Prof. P. S. Ferrari
Lecce	29.82	757.5	30.07	763.8	69.8	21.0	34	WSW	1.8	0.8			1			0	0		Prof. C. De Giorgi
Cosenza	29.1[illegible]	741.5	30.07	763.8	73.2	22.9	69	NW	4.9	2.2			2			0	0		Prof. D. Ci[illegible]i.
Cagliari	29.85	758.2	30.04	763.0	70.2	21.2	60	Calm			0		0			0	0		Prof. A. Pacinotti.
Palermo	29.88	758.9	30.13	765.4	65.5	18.6	60	E	6.3	2.8			3	NNW		0	0		Prof. G. Ciacciatore.
Syracuse	30.07	763.8	30.11	764.9	70.7	21.5	66	S	6.3	2.8			2	W		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.56	750.8	30.07	763.8	65.8	18.8	66	SW	3.1	1.4			4	S		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					64.3	17.9	77	WSW	2.4	1.1			0			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.75	755.6	29.95	760.7	61.3	16.3	76	SSW	0.8	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.74	755.4	29.81	757.2	62.9	17.2	93	ESE	4.0	1.8		0	8ks:s		SW	0	0	Cloudy	The Staff.
Wakayama	29.80	756.9	29.85	758.2	65.0	18.3	71	SW	2.0	0.9			6ck		SW	0	0	Fair	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.5	30.02	762.5	58.1	14.5	50	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.66	601.0			63.1	17.3	56	Calm	0	0		1s	0			0.057	1.46	Clear	Vicente Fernandez.
Leon	24.39	619.5	29.95	760.8	68.4	20.2	65	NW			2	1cs	0			0	0	Clear	Prof. M. Leal.
Mazatlan	29.68	753.9	29.94	760.5	72.0	22.2	92	SE			1		10m		SW	0	0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	23.05	585.5	29.98	761.4	57.8	14.4	52	Calm	0	0		2c	0			0	0	Clear	The Staff
Morelia	23.96†	608.6†			70.3	21.3	45	SE			2	2c	0	S		0	0	Clear.	M. Fena, M. D.
Pabellon (Aguascalientes)	23.96	608.5	29.87	758.7	65.1	18.4	67	NE			1	0	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.43	595.2	30.24	768.2	50.5	10.3	44	Calm	0	0		0	0			Inap.	Inap.	Very clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.09	764.3	64.8	18.2	57	SE			1	4	0	W		0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.87	758.7	29.88	759.0	78.3	25.7	92	W			1	1	5	W	N	0.05	1.3	Rainy	Prof. M. M. Châzaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.58	573.6	30.10	764.6	62.4	16.9	56	Calm			0	2c	0	SW		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.4 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	29.95	760.8	29.95	760.8	61.7	16.5		W			4					0.016	0.4		
Helder	29.81	757.1	29.86	758.5	57.4	14.1		W								0	0		
Hellevoetsluis	29.87	758.7	29.87	758.7	54.0	12.2		SW			4					0.067	1.7		
Utrecht	29.93	760.1	29.93	760.1	56.5	13.6	68	WSW			5					0	0		
	29.87	758.7	29.92	759.9	60.6	15.9	67	WSW			3		8			0.008	0.2	Very cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.36	745.7	29.41	747.1	47.5	8.6	92	SW	22.1	9.9	.....	.....	10	.....	.....	1.315	33.4	Raining	
Brönö	29.12	739.7	29.16	740.7	45.5	7.5	79	SW	18	8	.....	.....	10	.....	.....	0.098	2.5	Raining	
Christiania	29.22	742.1	29.36	745.7	63.5	17.5	33	SSW	13	6	.....	.....	5	.....	.....	0	0	.....	
Tromsö	29.15	740.4	29.21	741.8	47.7	8.7	58	SSW	9	4	.....	.....	5	.....	.....	0	0	.....	

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.07	763.8	30.28	769.1	64.4	18.0	78	ENE	.....	.....	2	.....	3	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.13	740.0	30.11	764.8	81.0	27.2	31	ESE	2.5	1.1	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.00	762.1	30.09	764.3	66.4	19.1	68	SW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.81	757.2	30.16	766.1	76.5	24.7	22	WSW	7.4	3.3	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.17	766.4	30.24	768.2	67.3	19.6	57	SE	3.1	1.4	.....	.....	4	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0–9	Direction form—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva																				
Benguela, Benguela	.....	.....	29.96	760.9	72.7	22.6	.....	Calm	.....	.....	0	.....	5	.....	W	1	.....	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sà da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado. J. A. de Brito Capello																				
Mossamedes, Benguela	.....	.....	29.98	761.5	75.2	24.0	.....	WSW	.....	.....	3	.....	2	.....	.....	1	.....	.....	Blue sky	A. Tito da Silva, Q. M.
Tejo. J. M. T. Guimaraes,																				
Hong Kong, China	.....	.....	29.99	761.8	79.2	26.2	.....	E	.....	.....	1	.....	10	.....	E	0	.....	3	Raining.	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.34	745.2	29.36	745.7	42.6	5.9	75	E	13	6	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sseliwerstow.
Astrakhan	29.85	758.1	29.76	756.0	63.9	17.7	74	W	7	3	.....	.....	10n	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Barnaul	28.98	736.0	29.45	747.9	73.8	23.2	47	S	0	0	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.30	744.1	29.53	750.1	56.5	13.6	46	WSW	7	3	.....	.....	4k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.70	728.9	29.62	752.4	64.4	18.0	31	ENE	13	6	.....	9c	.....	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.20	744.0	29.55	750.6	57.0	13.9	60	NNW	13	6	.....	.....	9n	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.81	757.2	29.83	757.7	54.0	12.2	95	NW	9	4	.....	.....	10	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.08	738.6	29.69	754.1	65.1	18.4	44	SSW	16	7	.....	ck	6ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.22	742.1	29.67	753.7	63.0	17.2	48	NNW	2	1	.....	.....	1	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.56	750.8	29.76	755.9	58.1	14.5	47	NE	9	4	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.14	740.2	29.68	753.8	62.2	16.8	54	SSW	7.8	3.5	.....	.....	5ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.82	757.5	29.89	759.3	59.7	15.4	64	SSW	9	4	.....	.....	9cs;n	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.70	754.3	29.78	756.5	46.6	8.1	89	SE	7	3	.....	.....	10s	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.58	751.3	29.72	754.9	76.5	24.7	38	SW	4	2	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.47	748.5	29.48	748.9	53.2	11.8	72	W	4	2	.....	.....	9kn	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.24	717.3	29.74	755.3	74.5	23.6	68	Calm	0	0	.....	.....	9	.....	.....	.....	.....	Heavy clouds	Teich, A. M.
Tiflis	28.36	720.4	29.72	754.9	71.6	22.0	62	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.24	742.7	29.65	753.2	57.9	14.4	57	WNW	18	8	.....	.....	4ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.16	740.7	29.58	751.3	53.2	11.8	94	SSE	2	1	.....	.....	10	.....	.....	.....	.....	Heavy clouds	Astronomical Obs.
Yeniseisk	29.34	745.3	29.63	752.5	46.4	8.0	88	WNW	9	4	.....	.....	10	.....	.....	.....	.....	Thunder-storm	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.03	762.8	30.13	765.4	66.9	19.4	58	ESE	3.5	1.58	.....	.....	2	.....	.....	0	0	Hazy	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.22	767.5	30.27	768.9	70.3	21.3	53	NW	2.4	1.09	.....	2	0	SW	.....	0	0	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.24	692.0	.....	.....	68.9	20.5	45	NE	1.8	0.80	.....	.....	0	.....	.....	0	0	Clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	27.93	709.5	30.06	763.5	81.0	27.2	43	SW	5.2	2.33	.....	0	0	.....	.....	0	0	Clear.	The Staff.
Murcia, Met. Obs'y	29.96	761.0	30.10	764.6	86.0	30.0	52	NE	3.3	1.47	.....	0	0	.....	.....	0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.28	743.6	30.16	766.0	66.9	19.4	57	N	13.7	6.1	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.92	760.0	29.99	761.7	76.7	24.8	86	E	4.0	1.8	.....	8ck	1k	W	.....	0.984	25.0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.84	758.0	29.89	759.3	85.9	30.0	77	NE	1.1	0.5	.....	.....	7ck	.....	W	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.05	763.4	30.15	765.8	78.6	25.9	56	W	4.5	2.0	.....	0	0	.....	.....	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.94	760.4	30.03	762.7	80.2	26.8	80	E	10.2	4.54	.....	4s	2k	E	E	0.266	6.75	Clear.	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.38	746.2	29.42	747.2	45.3	7.4		S			2		0			0.118	3.0		
Umea	29.31	744.4	29.36	745.7	46.4	8.0	72	S			4		3			0	0		
Hernosand	29.28	743.8	29.34	745.1	53.2	11.8	84	SSW			2		8			0	0		
Stockholm	29.24	742.8	29.42	747.3	51.4	10.8	83	SSE			2		9			0	0		
Wisby	29.43	747.4	29.48	748.9	48.9	9.0	87	W			4		5			0.063	1.6		
Sub-Series.																			
Upsala	29.28	743.8	29.37	746.0	53.2	11.8	74	SSE	9.6	4.3			6	W	W	0.027	0.68		Nils Ekholm.

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

Swedish Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Ft. L. R. m.	Observer.
Barque Australia				J. P. Påhlson.
H. M. Corvette Balder				Capt. A. C. Schonmeyr.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.72	729.4	30.13	765.3	57.7	14.3	60	ESE			1		9			0.063	1.6	Covered	The Observatory.
Zurich	28.46	722.8	30.08	764.0	58.5	14.7	68	W			4		9			0.268	6.8	Covered	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.0 mm.; Thermometer, +6.6 Cent. Relative Humidity, +4 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.03	762.8	60.1	15.6	68	WSW	4	2.0			8		N	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.11	764.8	64.9	18.3		NW			1		0			0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.87	758.7	77.9	25.5	49	NNE			5	6c				0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.																			Hon. J. Ferguson.
Chatham, N. B.	30.09	764.3	30.16	766.1	45.4	7.4	96	SW	3	1.3			Fog			0.07	1.8	Light rain	G. A. Blair.
Charlottetown, P. E. Island	30.18	766.6	30.22	767.6	55.3	12.9	87	SE	11	4.9		3cs	4s			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.83	757.7	30.01	762.2	67.0	19.4	85	W			3	2cs	0	W		0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.97	761.2	30.14	765.5	40.0	4.4		E			2		10n			0.30	7.6	Misty	H. A. Johnson.
Father Point, Quebec	30.04	763.0	30.06	763.5	43.6	6.4	79	SW	4	1.8			10n			0.63	16.0	Threatening	J. McWilliams.
Fredericton, N. B.	30.11	764.8	30.18	766.6	57.5	14.2	86	SE	3	1.3			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.85	732.8	29.66	753.4	53.0	11.7	73	SW	1	0.4		0	0			0.300	7.62	Clear.	James Stewart.
Granton, Ontario	28.95	735.3	30.03	762.7	61.0	16.1	88	S			1	0	0			0	0	Clear.	James Grant.
Halifax, N. S.	30.18	766.6	30.31	769.9	63.0	17.2	78	SW	6	2.7		0	5ks			0	0	Fair	A. Allison.
Hamilton, Ontario	29.66	753.4	30.04	763.0	65.1	18.4	78	N			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.74	755.4	30.08	764.0	56.5	13.6	82	SW	5	2.2		0	0			0.08	2.0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	30.21	767.3	30.25	768.3	67.0	19.4	69	W	8	3.6		5c	0	W		0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.87	758.7	30.06	763.5	61.0	16.1	66	SW	16	7.2		9cs	0	SW		0.34	8.6	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.65	753.1	29.68	753.9	42.5	5.8	98	NE			1		10n			Inap.	Inap.	Drizzling.	J. R. Nason.
Norwood, Ontario	29.35	745.5	30.03	762.7	61.9	16.6	69	SW	5	2.2		0	0			0.66	16.8	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.27	743.4	29.96	761.0	54.0	12.2	83	SE	18	8.0		2k	7ks	SW		0.03	0.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario																			J. F. Jeffers, M. A.
Port Dover, Ontario	29.39	746.5	30.08	764.0	58.1	14.5	94	S	4	1.8		0	0			0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.44	747.8	30.07	763.8	59.3	15.2	84	SW	4	1.8		0	0			0.02	0.5	Clear.	M. Payne.
Quebec, Quebec	29.79	756.7	30.11	764.8	50.0	10.0	93	Calm			0		Fog			0.54	13.7	Foggy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.52	749.8	29.97	761.2	51.0	10.6	76	E	2	0.9		0	0			0.16	4.1	Clear	W. H. McIntyre.
St. John, N. B.	30.06	763.5	30.23	767.8	50.0	10.0	93	S	8	3.6			10ks			0	0	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.24	742.7	29.93	760.2	63.2	17.3	70	S	21	9.4			10n			0.07	1.8	Cloudy	K. Stewart.
Stratford, Ontario	28.75	730.2	30.01	762.2	58.1	14.5	87	SW	12	5.4		0	0			0.064	1.63	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.22	767.6	30.26	768.6	68.4	20.2	64	SW	11	4.9		5c	5ks	W		0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.70	754.4	30.08	764.0	57.5	14.2	80	S	5	2.2		1cs	0	SW		0	0	Clear	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.98	736.1	30.01	762.2	66.0	18.9	77	S	14	6.3		0	0			0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	30.21	767.3	30.28	769.1	53.8	12.1	89	SW	12	5.4		7k	0	W		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.26	768.6	30.52	775.2	40	4.4	100	SE	0	0			Fog			0.02	0.5	Foggy	John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.28	769.1	39.2	4.0		SW			1					0.28	7.1		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.10	764.5	30.18	766.6	71	21.7	75	S	4	1.8		0	0			0.78	19.8	Clear	
Alpena, Michigan	29.23	742.4	29.85	758.2	61	16.1	71	SW	12	5.4		0	0			0.15	3.8	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.93	734.8	30.03	762.7	72	22.2	85	E	2	0.9		10k	0	SW		Inap.	Inap.	Cloudy	
Atlantic City, New Jersey	30.18	766.6	30.19	766.8	64	17.8	94	S	7	3.1			10s;fg		Calm	0	0	Cloudy	
Augusta, Georgia	29.95	760.7	30.14	765.5	72	22.2	90	SE	2	0.9			10n		Calm	1.51	38.4	Light rain	
Baltimore, Maryland	30.16	766.1	30.20	767.1	65	18.3	84	N	2	0.9			10s:fg		SW; alm	0.59	15.0	Cloudy	
Barnegat, New Jersey	30.17	766.3	30.19	766.8	63	17.2	100	SW	11	4.9			10s		Calm	0.07	1.8	Cloudy	
Bismarck, Dakota	27.80	706.1	29.66	753.4	52	11.1	60	E	12	5.4		5c	0	SW		Inap.	Inap.	Fair	
Boerne, Texas	28.51	724.1	29.79	756.7	67	19.4	95	SW	3	1.3		5k	0	S		0	0	Fair	
Boise City, Idaho	27.12	688.8	30.08	764.0	44	6.7	78	NW	4	1.8		0	5s		W	0.12	3.0	Fair	
Boston, Massachusetts	30.03	762.7	30.18	766.6	63	17.2	83	SW	14	6.3			10ks		SW	Inap.	Inap.	Threatening	
Brackettville, Texas	28.74	730.0	29.76	755.9	69	20.6	80	E	8	3.6		8cs	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.76	730.5	29.73	755.1	54	12.2	87	SE	14	6.3			10s		SE	0.04	1.0	Cloudy	
Brownsville, Texas	29.89	759.2	29.94	760.5	80	26.7	82	SE	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.39	746.5	30.08	764.0	62	16.7	67	SW	7	3.1		2c	0	SW		0.04	1.0	Clear	
Burkes, Arizona					64	17.8	43	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.83	757.7	30.11	764.8	67	19.4	74	S	13	5.8		8cs	Fog	W	S	0.26	6.6	Fair	
Cairo, Illinois	29.74	755.4	30.12	765.0	71	21.7	66	Calm	0	0		0	0			0	0	Clear	
Campo, California	27.34	694.4	29.91	759.7	39	3.9	52	W	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.22	767.6	72	22.2	85	SE	13	5.8			10s		SE	0.03	0.8	Cloudy	
Cape Henry, Virginia	30.17	766.3	30.19	766.8	70	21.1	85	S	10	4.5		5ck	5s	SW	S	0.02	0.5	Cloudy	
Cape Lookout, N. Carolina	30.19	766.8	30.20	767.1	73	22.8	81	SW	10	4.5		10k	0	W		0	0	Cloudy	
Cape May, New Jersey	30.14	765.5	30.17	766.3	65	18.3	89	S	14	6.3			10s		S	0.02	0.5	Cloudy	
Castroville, Texas	29.16	740.7	29.84	757.9	70	21.1	80	SE	2	0.9		2c	2s	W	S	0	0	Fair	
Cedar Keys, Florida	30.03	762.7	30.06	763.5	75	23.9	86	E	13	5.8		2cs	2ks	Calm	E	0.54	13.7	Fair	
Charleston, South Carolina	30.08	764.0	30.12	765.3	75	23.9	86	S	4	1.8		0	8s		S	0.41	10.4	Cloudy	
Charlotte, North Carolina	9.28	743.7	30.07	763.8	68	20.0	95	S	6	2.7			10s		SE	0.66	16.8	Cloudy	
Chattanooga, Tennessee	29.31	744.5	30.10	764.5	66	18.9	79	NW	1	0.4		5k	0	SW		0	0	Fair	
Cheyenne, Wyoming	23.83	605.3	29.77	756.1	53	11.7	25	NW	30	13.4		0	0			0	0	Fair	
Chicago, Illinois	29.32	744.7	29.99	761.7	66	18.9	79	SW	4	1.8		5cs	0	Calm		0	0	Fair	
Chincoteague, Virginia	30.19	766.8	30.3	767.3	66	18.9	96	S	20	8.9			10ks		S	0.29	7.4	Cloudy	
Cincinnati, Ohio	29.48	748.8	30.12	765.0	62	16.7	74	SE	2	0.9		1k	0	Calm		0	0	Clear	
Cleveland, Ohio	29.38	746.2	30.09	764.3	67	19.4	55	S	11	4.9		0	0			0	0	Clear	
Coleman City, Texas	28.15	715.0	29.75	755.6	68	20.0	74	SE	7	3.1		5ck	0	Calm		0	0	Fair	
Columbus, Ohio	29.29	744.0	30.11	764.8	62	16.7	67	S	2	0.9		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	28.03	711.9	29.64	752.8	70	21.1	75	SE	3	1.3		5c	0	S		0	0	Fair	
Corsicana, Texas	29.53	750.0	29.99	761.7	70	21.1	80	SE	2	0.9		0	0			0	0	Clear	
Davenport, Iowa	29.34	745.2	29.96	761.0	63	17.2	62	NE	5	2.2			10s		Calm	0	0	Cloudy	
Dayton, Washington T'y					43	6.1	91	SW			2		10s		W	0.50	12.7	Cloudy	
Deadwood, Dakota	4.94	634.5			61	16.1	71	SW	16	7.2		0	0			0	0	Clear	
Decatur, Texas																			
Delaware Breakwater, Del.	30.16	766.1	30.18	766.6	66	18.9	95	S	12	5.4			10ks		S	0.10	2.5	Threatening	
Denison, Texas	29.18	741.1	29.95	760.7	69	20.6	85	SE	6	2.7		1c	0	SW		0	0	Fair	
Denver, Colorado	24.52	622.8	29.74	755.4	57	13.9	36	S	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	29.00	736.6	29.85	758.2	61	16.1	55	SE	6	2.7		8cs	0	W		Inap.	Inap.	Fair	
Detroit, Michigan	29.37	746.0	30.02	762.5	61	16.1	77	SW	8	3.6		0	0			0	0	Clear	
Dodge City, Kansas	27.12	688.8	29.28	743.7	66	18.9	84	S	20	8.9		0	0			0	0	Clear	
Dubuque, Iowa	29.26	743.2	29.94	760.5	57	13.9	69	S	1	0.4		5cs	9s	S	S	0.28	7.1	Fair	
Duluth, Minnesota	29.22	742.2	29.91	759.7	40	4.4	100	SW	4	1.8			Fog		Calm	0.45	11.4	Foggy	
Eagle Pass, Texas	29.67	738.4	29.77	756.1	78	25.6	69	SE	12	5.4		0	0			0	0	Clear	
Eastport, Maine	30.13	765.3	30.20	767.1	57	13.9	87	S	10	4.5			10s		W	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.39	746.5	30.08	764.0	67	19.4	55	SW	8	3.6		0	0			0	0	Clear	
Escanaba, Michigan	29.27	743.4	29.90	759.4	58	14.4	64	W	8	3.6		0	0			0	0	Clear	
Florence, Arizona	28.36	720.3	29.96	761.0	69	20.6	65	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.99	634.7	30.44	773.2	47	8.3	55	E	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.52	699.0	29.27	743.4	50	10.0	51	NE	13	5.8		10cs	0	NE		0	0	Cloudy	
Fort Custer, Montana	26.42	671.1			43	6.1	75	W	18	8.0			10ks		W	0.03	0.8	Threatening	
Fort Davis, Texas	25.16	639.0	30.12	765.0	69	20.6	48	Calm	0	0		2cs	0	Calm		0	0	Fair	
Fort Elliot, Texas	26.81	681.0	28.93	734.8	68	20.0	51	SE	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.40	746.7	29.91	759.7	71	21.7	66	SE	12	5.4		0	0			0.14	3.6	Clear	
Fort Grant, Arizona	25.17	639.3	29.97	761.2	66	18.9	98	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.64	727.4	29.85	758.2	71	21.7	71	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	26.76	679.7			50	10.0	59	E	2	0.9		0	8ks		Calm	0	0	Fair	
Fort McKavett, Texas	27.67	702.8	29.51	749.5	69	20.6	75	E	4	1.8		4c	0	N		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.68	728.5	29.74	755.4	70	21.1	85	S	16	7.2		5cs	0	Calm		0.10	2.5	Fair	
Fort Stevenson, Dakota	27.76	705.1			46	7.8	85	E	9	4.0			10ks		Calm	0	0	Cloudy	
Fort Verde, Arizona					58	14.4	53	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.93	760.2	29.97	761.2	78	25.6	78	SE	5	2.2		2k	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.36	745.7	29.99	761.7	62	16.7	79	W	10	4.5		0	0			0	0	Clear	
Helena, Montana					45	7.	92	W	3	1.3			8ks		Calm	Inap.	Inap.	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.31	744.5	30.04	763.5	68	20.0	70	S	2	0.9		0	0			0	0	Clear	
Indianola, Texas	29.95	760.7	29.98	761.5	77	25.0	77	E	7	3.1		0	5ks		Calm	0	0	Fair	
Jacksboro, Texas	28.79	731.3	29.87	758.7	70	21.1	75	SE	4	1.8		2c	0	SE		0	0	Clear	
Jacksonville, Florida	30.07	763.8	30.09	764.3	74	23.3	88	Calm	0	0		2cs	5s	Calm	SE	1.27	32.3	Cloudy	
Keokuk, Iowa	29.33	745.0	29.92	760.0	71	21.7	71	SW	2	0.9		2cs	0	Calm		0	0	Clear	
Key West, Florida	29.99	761.7	30.02	762.5	78	25.6	91	SE	12	5.4		5k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	30.22	767.6	30.24	768.1	70	21.1	85	SW	9	4.0			10s		SW	0	0	Cloudy	
Knoxville, Tennessee	29.13	739.9	30.10	764.5	67.5	19.7	79	NE	1	0.4		5k	1ks	Calm	Calm	0	0	Fair	
La Crosse, Wisconsin	29.20	741.7	29.93	760.2	54	12.2	74	S	8	3.6		2c	0	S		0.04	1.0	Fair	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	56	13.3	51	Calm	0	0			0			0	0	Clear	
Laredo, Texas	29.44	747.8	29.77	756.1	74	23.3	40	NE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.01	736.8	29.81	757.2	72	22.	67	S	11	4.9		2cs	2s	SW		0	0	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.72	754.9	30.04	762.7	68	20.0	79	E	1	0.4		0	0			0	0	Clear	
Los Angeles, California	29.58	751.3	29.92	760.0	58	14.4	91	S	2	0.9			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.54	750.3	30.09	764.3	65	18.3	73	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.70	754.3	30.16	766.1	69	18.9	80	N	4	1.8			10n			0.99	25.1	Light rain	
Madison, Wisconsin	8.98	736.1	29.94	760.5	59	15.0	70	W	1	0.4		5cs	0	W		0.07	1.8	Fair	
Marquette, Michigan	29.18	741.1	29.88	758.9	52	8.9	65	N	9	0.9		8k	0	NW		0.12	3.0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.30	718.8	29.99	761.7	72	22.2	76	SE	3	1.3		5cs	0	Calm		0	0	Fair	
Memphis Tennessee	29.71	754.6	30.04	763.0	73	22.8	63	E	4	1.8		Haze	Sm'e			0	0	Hazy	
Milwaukee, Wisconsin	29.27	743.4	29.98	761.5	63	17.2	67	W	5	2.2		1c	0	W		Inap.	Inap.	Clear	
Mobile, Alabama	29.99	761.7	30.03	762.7	74	23.3	95	N	3	1.3			10s		Calm	0	0	Cloudy	
Montgomery, Alabama	29.85	758.2	30.07	763.8	74	23.3	85	NE	3	1.3		2k	0	SE		0	0	Clear	
Morgantown, West Virginia	29.18	741.1	30.15	765.8	61	16.1	71	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N H	24.00	609.6	30.36	771.1	44	6.7	100	NW	28	12.5			Fog		NW	0.45	11.4	Foggy	
Nashville, Tennessee	29.57	751.1	30.09	764.3	67	19.4	69	NW	1	0.4		0	Haze		Calm	0	0	Clear	
New Haven, Connecticut	30.07	763.8	30.19	766.8	64	17.8	83	S	4	1.8			10s		Calm	0.30	10.2	Cloudy	
New London, Connecticut	30.16	766.1	30.21	767.3	61	16.1	94	SW	5	2.2			10n		Calm	0.41	10.4	Light rain	
New Orleans, Louisiana	29.95	760.7	30.00	762.0	79	26.1	86	Calm	0	0		2k	5ks	Calm	Calm	0	0	Fair	
Newport, Rhode Island	30.15	765.8	30.20	767.1	60	15.6	100	S	15	6.7			10n		SW	0.08	2.0	Light rain	
New River, North Carolina					74	23.3	81	S			1		10s		S			Cloudy	
New York, New York	30.01	762.2	30.19	766.8	65	18.3	94	Calm	0	0		Haze	5s;hz	Calm	Calm	0.10	2.5	Hazy	
Norfolk, Virginia	30.14	765.5	30.19	766.8	76	24.4	77	SW	8	3.6			10s;fg		Calm	0	0	Cloudy	
North Platte, Nebraska	26.73	678.9	29.13	739.9	67	19.4	84	S	16	7.2		5k	5s	S	S	0	0	Cloudy	
Olympia, Washington Ter	29.96	761.0	30.10	762.0	44.0	6.7	84	S	11	4.9			10n		SW	0.11	2.8	Light rain	
Omaha, Nebraska	28.59	726.2	29.63	752.6	65	18.3	44	SE	16	7.2			10s		S	0	0	Cloudy	
Oswego, New York	29.81	757.2	30.12	765.0	65	18.3	68	S	6	2.7		5ck	0	W		Inap.	Inap.	Fair	
Pembina, Dakota	28.82	732.0	29.63	752.6	48	8.9	85	S	10	4.5		0	0			0.05	1.3	Clear	
Pensacola, Florida	30.01	762.2	30.04	763.0	77	25.0	86	SE	5	2.2		1ck	0	SE		0	0	Clear	
Philadelphia, Pennsylvania	30.14	765.5	30.19	766.8	65	18.3	84	NW	8	3.6		10k	0	W		0.18	4.8	Cloudy	
Phœnix, Arizona	28.70	729.0	30.40	772.1	80	26.7	34	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.70	449.6	29.91	759.7	28	—2.2	66	SW	52	23.2		1ck	0	Calm		0	0	Clear	
Pilot Point, Texas	29.19	741.4	30.01	762.2	71	21.7	80	SE	9	4.0		5c	0	W		0	0	Fair	
Pioche, Nevada	23.96	608.6	29.73	755.1	53	11.7	36	NW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.16	766.1	57	13.9	81	Calm	0	0		5k	Fog	Calm	Calm	0	0	Fair	
Port Huron, Michigan	29.34	745.2	29.99	761.7	62	16.7	77	S	12	5.4		0	0			0.05	1.3	Clear	
Portland, Maine	30.11	764.8	30.16	766.1	58	14.4	94	S	8	3.6			10n		Calm	0.02	0.5	Light rain	
Portland, Oregon	30.05	763.3	30.12	765.0	45.5	7.5	76	S	10	4.5			10s		SW;W;NW	0.41	10.4	Cloudy	
Portsmouth, North Carolina					75	23.9	77	S	8	3.6		10k;cs	Haze	Calm	Calm	0	0	Cloudy	
Prescott, Arizona	24.69	627.1	30.05	763.3	58	14.4	32	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.03	762.7	75	23.9	86	E	10	4.5		8ck	0	W		0.10	2.5	Fair	
Red Bluff, California	29.69	754.1	30.05	763.3	54.5	12.5	58	NW	3	1.3		0	0			0	0	Clear	
Rio Grande City, Texas	29.75	755.6	29.96	761.0	73	22.8	85	SE	5	2.2		2k	0	SE		0	0	Clear	
Rochester, New York	29.48	748.8	30.00	764.3	63	17.2	57	SW	7	3.1		1c	0	SW		0.01	0.3	Clear	
Roseburg, Oregon	29.66	753.4	30.24	768.1	44.5	6.9	92	E	1	0.4		8c;k	0	W		0.23	5.6	Fair	
Sacramento, California	29.93	760.2	30.00	762.0	59	15.0	65	NW	10	4.5		0	0			0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.04	763.0	67	19.4	79	S	10	4.5		1c	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.03	737.3	29.84	757.9	52	11.1	79	E	4	1.8		5c	0	W		0.05	1.3	Fair	
Salt Lake City, Utah	25.60	650.2	29.93	760.2	55	12.8	39	Calm	0	0		8k	0	NW		0	0	Cloudy	
San Antonio, Texas	29.28	743.7	29.96	761.0	68	20.0	90	Calm	0	0		5cs	0	SE		0	0	Fair	
San Diego, California	29.88	758.9	29.95	760.7	58	14.4	88	W	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.41	747.0	30.06	763.5	65	18.3	68	SW	13	5.8		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.13	765.3	30.16	766.1	66	18.9	95	S	2	0.9			10ks		Calm	0.30	7.6	Cloudy	
San Francisco, California	30.00	762.0	30.07	763.8	52	11.1	86	W	3	1.3		1c	0	W		0	0	Clear	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	49	9.4	24	E	4	1.8		0	0			0	0	Clear	
Savannah, Georgia	30.05	763.3	30.14	765.5	80	26.7	74	SE	4	1.8		8c	Haze	Calm	Calm	0.09	2.3	Fair	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	74	23.3	68	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.14	765.5	30.18	766.6	75	23.9	81	S	8	3.6		8k	Haze	S	Calm	Inap.	Inap.	Cloudy	
Socorro, New Mexico	25.38	644.6	29.44	747.8	64	17.8	25	Calm	0	0		0	0			0	0	Clear	
Springfield, Illinois	29.38	746.2	30.03	762.7	68	20.0	79	SW	6	2.7		0	0			0	0	Clear	
Springfield, Massachusetts	30.06	763.5	30.19	766.8	66	18.9	84	S	2	0.9			10ks		S	0.16	4.1	Cloudy	
Stockton, Texas	26.85	682.0	29.85	758.2	68	20.0	65	S	18	8.0		0	5s		SW	0	0	Fair	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	61	16.1	88	S	13	5.8		0	Haze			0	0	Clear	
Toledo, Ohio	29.35	745.5	30.02	762.5	67	19.4	69	S	11	4.9		0	0			0	0	Clear	
Tucson, Arizona	27.44	697.0	30.00	762.0	76	24.4	34	S	1	0.4		0	0			0	0	Clear	
Umatilla, Oregon	29.68	753.9	30.17	766.3	47	8.3	66	SW	26	11.6			10s		W	0.14	3.6	Cloudy	
Uvalde, Texas	28.96	735.6	29.76	755.9	72	22.2	80	E	3	1.3			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.79	756.7	30.04	763.0	73	22.8	67	SE	9	4.0		2cs	0	Calm		0	0	Clear	
Virginia City, Montana	24.03	610.4	29.51	749.5	34	1.1	79	W	14	6.3			10s		W	0.21	5.3	Cloudy	
Visalia, California	29.54	750.3	29.91	759.7	57	13.9	69	NW	3	1.3		0	0			0	0	Clear	
Washington, D. C	30.09	764.3	30.21	767.3	64	17.8	89	NW	2	0.9			10n		NW	0.70	17.8	Light rain	
Wickenburg, Arizona					58	14.4	42	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.11	764.8	30.18	766.6	74	23.3	86	S	3	1.3		5ck	5s	Calm	Calm	0	0	Cloudy	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	44	6.7	52	SW	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.18	766.6	30.22	767.6	63	17.2	83	SW	25	11.2			10s		SW	0	0	Cloudy	
Yankton, Dakota	28.57	725.7	29.83	757.7	57	13.9	87	N	12	5.4			10n			0.27	6.9	Heavy rain	
Yuma, Arizona	29.62	752.3	29.76	755.9	79	26.1	33	SE	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.03	559.6			60.0	15.6	74	Calm	0	0		5k	2ks			0.68	17.3	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.97	761.2	30.02	762.5	77	25.0	86	Calm	0	0		8ck;cs	0	Calm		0.70	17.8	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.96	761.0	29.97	761.2	77	25.0	87	Calm	0	0		2c	2s	Calm		0.75	19.1	Cloudy	James Gall.
Navassa, W. I	29.89	759.2	29.97	761.2	80	26.7	78	E	5	2.2		5k	2s	NE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.99	761.7	29.99	761.7	80	26.7	82	E			2	4c	5k	E		0.440	11.18	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.36	745.7	29.91	759.7	80	26.7	95	S			1		10s			0.31	7.9		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		SE				1pc	2fk	NE	SE	0.91	23.	Rainy	Carl Flint.
Santiago de Cuba, W. I	29.97	761.2	30.00	762.0	78	25.6	82	NE	3.6	1.6		4c	2k	Calm	Calm	0.125	3.10		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.88	758.9	29.93	760.2	36.0	2.2	95	E	10	4.5		2c	1s	S	S	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES,

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.09	764.3	78	25.6	86	SE	10	4.5			2d		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.20	767.1	60	15.6	94	SSE	3	1.3			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.81	757.2	61.8	16.6	58	Calm			0		0			0	0			Clear	
§ Adams, Punta Arenas, Costa Rica	29.89	759.2	80	26.7	87	Calm			0		8							Cloudy	
§ Alaska, Ancon, Peru*	29.94	760.5	63	17.2	83	Calm			0		10					Smooth		Misty	
§ Alert, Yokohama, Japan	29.75	755.6	68	20.0	79	Calm			0		8		Calm	0	0	Smooth		Fair	
Alliance, Norfolk, Va.	30.18	766.6	75	23.9	90	SW			1		10		Calm	Light	Light			Cloudy	
§ Ashuelot, Shanghai, China	29.88	758.9	71	21.7	75	SSE			1		5		SSE					Fair	
Colorado, New York, N. Y.	30.14	765.5	67	19.4	95	SSE	2	0.9			8			0.09	2.3			Foggy	
§ Constitution, New York, N. Y.	30.17	766.3	64	17.8	100	Calm	0	0			8		Calm					Clearing	
§ Franklin, Off Navy Yard, Norfolk, Va	30.21	767.3	74	23.3	86	SSE	9.6	4.3			10		SSW	0	0			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal	30.04	763.0	55	12.8	100	SW	1.2	0.5			2		SW	0	0			Clear	
§ Jamestown, Sitka, Alaska*	29.73	755.1	41	5.0	91	ENE			1		10					Smooth		Cloudy	
Kearsarge, N. 17° 20', W. 52° 40'	29.93	760.2	81	27.2	79	NNW			3		5		E			Smooth		Fair	
§ Lackawanna, N. 17° 09', W. 103° 34'...†	29.98	761.5	82	27.8	??	WNW			2-3		2		WNW			Smooth	WNW	Fair	
§ Marion, S. 40° 21', W. 56° 36'	29.99	761.7	48	8.9	92	SSW			2		10		SW	0	0	Mod'ate	SW	Cloudy	
§ Michigan, Erie, Pa.	30.03	762.7	66	18.9	68	SSW			3		0							Hazy	
§ Monocacy, Shanghai, China	29.88	758.9	69	20.6	75	SSE			2		8		S					Cloudy	
§ New Hampshire, Port Royal, S. C.	30.11	764.8	74	23.3	86	SSE	6	2.7			10		SSE	0.55	14.0			Cloudy	
Nipsic, Genoa, Italy	29.99	761.7	64	17.8	73	SE			4		10		SE			Smooth		Overcast	
§ Onward, Ancon Bay, Peru	29.99	761.7	64	17.8	83	Calm			0		10					Long	W	Cloudy	
§ Pator, Shanghai, China	29.90	759.4	74	23.3	95	SSE			2		5?							Cloudy	
§ Passaic, Washington, D. C.	30.22	767.6	67	19.4	89	NW			1		10		SW	0.5	13.			Rainy	
§ Pensacola, Vallejo, Cal.	29.98	761.5	55	12.8	87	SW			2		8					Smooth		D. clouds	
§ Portsmouth, N. 33° 51', W. 70° 20'	30.30	769.6	67	19.4	74	ENE			1		8		E	0	0	Long	SE	Squally	
§ Powhatan, N. 37° 35', W. 76° 13'	30.17	766.3	70	21.1	95	SSE			3		2		S					Hazy	
§ Quinnebaug, N. 4.° 10', W. 15° 03'	30.25	768.3	64	17.8	73	SSW			2		0					Smooth		Clear	
§ Richmond, Shanghai, China	29.92	760.0	73	22.8	95	SSE			2		10		SSW					Clear?	
§ Rio Bravo, Brownsville, Texas	30.14	765.5	72	22.2	100	Calm	0	0			2		SE	0	0			Misty	
§ Saratoga, Lisbon, Portugal	30.17	766.3	73	22.8	59	W			2		0			0	0			Clear	
§ Shenandoah, Montevideo, Uruguay	30.15	765.8	48	8.9	78	NW			3		0					Smooth		Clear	
§ St. Louis, League Island, Pa.	30.18	766.6	66	18.9	84	NNW	5	2.2			10		SW	0.29	7.4			Cloudy	
Swatara, N. 10° 27', E. 101° 25'*	29.83	757.7	86	30.0	84	N			1		10		Calm			Smooth		Cloudy	
§ Tennessee, N. 23° 25', W. 84° 25'	29.99	761.7	82	27.8	87	E	10	4.5			2		E	0	0	Smooth		Clear	
Ticonderoga, Yokohama, Japan	29.78	756.4	67	19.4	95	SSE			1		5		WSW			Smooth	NNE	Fair	
§ Trenton, Palermo, Sicily	30.11	764.8	59	15.0	??	Var.			1		0			0	0	None		Clear	
§ Vandalia, Navy Yard, Brooklyn, N.Y.	30.18	766.6	69	20.6	90	Var.			1		9		NW					Misty	
§ Wabash, Boston, Mass.	30.23	767.8	65	18.3	84	SSW	11	4.9			10			0	0			Cloudy	
§ Wachusett, S. 43° 48', W. 62° 57'	29.91	759.7	49	9.4	93	S			3-4		2		SW	0	0	Long	SW	Fair	
Wyoming, Villafranca, France	29.92	760.0	67	19.4	69	ENE			2-3		5		E			Smooth	E	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 44° 27′, W. 63° 32′	30.28	769.1	46	7.8		SSW			3		8		SSW			Smooth		Fair	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, N. 53° 18′, W. 4° 42′ *†	29.87	758.7	59	15.0	94	WSW			3		10		WSW	1 h'r	1 h'r			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strasburg, O. Heimbruch																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
S. S. Belgic, L. Meyer, Hong-Kong, China †	29.91	759.7	75	23.9	100	NE			1		10?		NE					Clear?	D. A. Joyce.
S. S. Gaelic, W. H. Kidley, N. 38° 06′, W. 125° 29′ †	30.16	766.1	55	12.8	88	NW			5		k		NW	0	0	Mod'ate	NW	Fine	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, San Francisco, Cal. †	30.10	764.5	51	10.6		SSW			2		0							Clear	
S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
S. S. State of California, G. Debney, N. 45° 56′, W. 124° —′ †	30.09	764.3	45	7.2		SW			4		8		SW			Rough	WSW	Squally	

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, N. 14° 35', W. 92° 55'.....†	29.79	756.7	80	26.7	82	E			5		8		SE			Heavy	SE	Cloudy	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury. N. 35° 54', W. 117° 40'....†	29.91	759.7	50	10.0	86	NNW			6		0					Heavy	WNW	Clear	
§ S. S. City of Chester. J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. S. 0° 50', W. 165° 40'.....†	29.84	757.9	80	26.7	96	ESE			2		0			0	0	Light	SE	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 28° 22', W. 115° 35'....†	29.96	761.0	58	14.4	94	SSE			1		8		N	0	0	Smooth	NW	Light fog	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry. N. 34° 38', E. 144° 18'.....†	29.96	761.0	67	19.4	95	WSW			4		5		WSW			Mod'ate	E	Fair	
§ S. S. City of Sidney, H. C. Dearborn. S. 34° 10', E. 164° 50'....*†	29.95	760.7	69	20.6		NW			5		2		NW	0	0	——	NW	Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury. N. 44° 20', W. 174° 57'...†	29.87	758.7	45	7.2	84	ENE			4		8		SE	Blank	Blank	Smooth		Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, Mazatlan, Mexico.....†	29.91	759.7	75	23.9	100	E			2		10		E	0	0	Small	WSW	Cloudy	
§ S. S. Dakota, D. E. Griffiths. N. 38° 40', W. 123° 38.....†	30.12	765.0	51	10.6	??	N			3		2		N	0	0	Mod'ate	SW	Clear	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly. N. 8° 55', W. 84° 50'.....†	29.92	760.0	81	27.2	83	S			3		10n		S	Mod'ate	Mod'ate	Light	SSW	Rainy	
§ S. S. Idaho, N. 45° 00', W. 124° 55'....†	30.11	764.8	52	11.1		SSE			2		8		SSE			Heavy	NW	Raining	
§ S. S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 40° 12', W. 70° 00'.....†	30.26	768.6	61	16.1		S			2		2		S	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 50° 59', W. 22° 49 .....†	30.91	759.7	51	10.6		W			6		10		NW				WNW	Raining	J. Jones.
S. S. Celtic, B. Glendell																			
S. S. Republic, P. J. Irving. N. 41° 23', W. 53° 58'....*†	30.48	774.2	63	17.2		Calm			0				E	0	0	Light	E	Clear	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.20	767.1	67	19.4		SSW			1		10			0	0			Gloomy	Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Satilla river, Georgia....	30.11	764.8	76	24.4	77	S	5	2.2			5k		SE	0.45	11.4			D. clouds	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis. Arroyo, Porto Rico, W. I.†	30.01	762.2	85	29.4		E			5		2		E	0	0	Smooth	SE	Fair	L. L. Lewis.
Bark, Carrie Heckle, B. F. Woodbury. S. 32° 55', E. 15° 30'.....*†	30.28	769.1	63	17.2		SSE			2		0			0	0	Smooth	SW	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin. N. 18° 00', W. 66° 00'....†	30.15	765.8	81	27.2		E			5		8		E	Showers.	Showers.	Smooth		Fine	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 24, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.09	764.2				W			2		2			0	0	Fair	Dr. Ollive.
Nemours			30.18	766.5	73.8	23.2	84	NW			1		3			0	0	Pretty fair	Metge.
Algiers			30.22	767.5	69.8	21.0	67	NNE			3		0			0	0	Clear	Nicolas.
La Calle			30.26	768.7	68.0	20.0	91	NW			1		0			0	0	Clear	Fonfrède.
Tunis			30.28	769.2															Jacques.
Sfax			30.35	770.8															Gau.
Saida			30.19	766.7															Bernard.
Tebessa			30.30	769.5	73.6	23.1	24	Calm			0		2			0	0	Fair	Watrin.
Geriville					79.2	26.2	90	N			1		0			0	0	Clear	Brugniaux.
Laghouat			30.27	768.8	83.5	28.6	13	ENE			1		0			0	0	Clear	Suart.
Biskra			30.25	768.3	88.2	31.2	33	E			1		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram																			
Cracow, I. R. Observatory	29.59	751.5	30.12	765.0	72.1	22.3	48	S			5		4			0	0		Prof. Ivan Stozir.
Eperies	29.29	744.0	30.06	764.4	57.2	14.0	78	W	11.2	5.0			10			0.075	1.9		Dr. Wierzbicki.
Gratz	29.15	740.3	30.01	762.3	60.1	15.6	75	S			1		10ns			0.075	1.90		Julius Mikolik.
Hermannstadt	28.87	733.2	30.09	764.2	67.5	19.7	60	NE			2		2			0.035	0.9		Andreas Rospini.
Kremsmünster, Observatory	28.69	728.8	30.11	764.8	59.9	15.5	47	NNE			3		10			0	0		Prof. A. Gottschling
Lemberg	28.76	730.4	30.07	763.6	66.2	19.0	58	WSW			1		4			0.146	3.7		The Staff.
Pola	29.00	736.6	29.97	761.3	58.6	14.8	64	NW			3		9			0	0		Dr. T. Stanecki.
Szathmar	30.12	765.1	30.23	767.9	70.0	21.1	62	S			1		4			0	0		I.R.Hydrographic Office.
Szegedin	29.64	752.8	30.10	764.4	67.6	19.8	51	SW			4		6			0	0		Pet. Pancsics, S. J.
Trieste	29.86	758.4	30.13	765.4	66.6	19.2	55	W			3		7			0	0		Karl Stancel.
Vienna	30.13	765.4	30.24	768.0	67.1	19.5	73	Calm			0		1			0	0	Almost clear.	P. Busin.
	29.41	746.9	30.13	765.4	65.1	18.4	48	W			3		10			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.82	757.4	30.02	762.4	62.2	16.8	53	WSW			6		9		WSW	0	0		Royal Observatory
Furnes	30.02	762.4	30.04	763.0	65.3	18.5	53	W			6		4			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 23, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.32	744.7	29.42	747.3	53.0	11.7		WSW	35	15.6			3			Blank	Blank	Squally	W. Boswell.
Ardrossan	29.60	751.8	29.62	752.3	51	10.6		WSW			6		5					D. clouds	G. Carrick.
Armagh, (Observatory)	29.52	749.8	29.75	755.6	55.0	12.8		WSW	15	6.7			7			Blank	Blank	Squally	S. Call.
Bidston (Liverpool Obs)			29.80	756.9	55.5	13.3		W	26	11.6			5					D. clouds	John Hartnup.
Bolton (Sharples)	29.26	743.2	29.77	756.1	55.0	12.8		SW	45	20.1			6					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.36	745.7	29.76	755.9	57.5	14.1	50	NW			6		4			0.01	0.3	D. clouds	J. McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	81.5	27.5		NE			2		5					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.76	755.9	29.85	758.2	63.0	17.2		SW			3		7					D. clouds	H. Todd.
Cardington			29.83	757.7	67.0	19.4		W			7		9					Overcast	John McLaren.
Chatham (School M. E.)	29.81	757.2	29.94	760.5	61.0	16.1		SW			3		8k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.69	754.1	29.73	755.1	54	12.2		WNW			6		5					D. clouds	J. Mac Gowan.
Dover	29.92	760.0	29.95	760.7	58	14.4		WSW			6		7					¾ clouded	J. Costello.
Falmouth (Observatory)	29.80	756.9	30.03	762.7	58.5	14.7		WSW			4		10					Squally	The Staff.
Fort Napier, Natal	27.93	709.4	30.14	765.5	76.4	24.7		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	87	30.6		SE			1		8					D. clouds	
Galway (Queen's College)			29.80	756.9	54	12.2		SW			5		9					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.08	764.0	30.13	765.3	68.1	20.1		NE			4		0					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.39	746.5	29.59	751.6	51.5	11.1		SW			8		8					Gloomy	D. G. Maclean.
Great Yarmouth	29.80	756.9	29.80	756.9	64	17.8		WSW			5		4					Squally	G. T. Watson.
Greenwich (Royal Obs'y)	29.75	755.6	29.92	760.0	63.7	17.6		SW			5		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.84	757.9	30.05	763.3	60	15.6		SW			4		0					Blue sky	Dr. S. E Hoskins, F.R.S.
Helston	30.18	766.6	30.30	769.6	60	15.6		SW			6		4k					Gloomy	M. P. Moyle.
Holyhead	29.79	756.7	29.82	757.4	58	14.4		SW			4		6					D. clouds	John Tilston.
Jersey	29.83	757.7	30.12	765.0	61.0	16.1		W			3		0					Blue sky	J. Fisher.
Kew (Observatory)	29.89	759.2	29.92	760.0	59.8	15.4		SW	24	10.7			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.56	750.8	29.81	757.2	59.0	15.0		SW			4		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.14	765.5	30.21	767.3	74	23.3		NW			2		1					Blue sky	A. King.
Nairn	29.30	744.2	29.39	746.5	50	10.0		WSW			6		10					Overcast	W. D. Penny.
Nassau, Bahamas			30.07	763.8	78.0	25.6		E			3		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.64	752.8	29.83	757.7	57.5	14.0		SW			2		10kd		SW	0.191	4.86	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.32	744.7	29.84	757.9	57.1	13.9		W			5		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.68	753.9	29.93	760.2	61	16.1		W			6		7					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	29.93	760.2	30.00	762.0	58.8	14.9		SW			5		10					Overcast	John Merrifield.
*Roche's Point	29.83	757.7	29.95	760.7	58	14.4		WNW			4		8			Blank	Blank	¾ clouded	Wm. Kennedy.
St. Ann's Head	29.76	755.9	29.92	760.0	51	10.6		WNW			2		10					Raining	John C. Walker.
Sandwick Manse, Orkneys			29.32	744.7	44.1	6.7		W	32	14.3			10					Showery	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	30.06	763.5	30.12	765.0	66.0	18.9		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.51	749.5	29.79	756.7	60.4	15.8		SW			5		4			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.67	753.6	29.70	754.4	54.8	12.7	63	NW			6		0			0.100	2.54	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.79	756.7	53.2	11.8		W	29	13.0			9					Squally	Rev. S. J. Perry.
Stratfield Turgiss	29.72	754.9	29.93	760.2	62.0	16.7		W			4–5		10					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.02	762.5	30.04	763.0	62	16.7		SW			6		8					Gloomy	W. Newcombe.
Valencia (Observatory)	29.88	758.9	29.91	759.7	53.6	12.0		SW	23	10.3			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.14	765.5	30.18	766.6	77.8	25.4	38	NW	2.7	1.2		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.42	747.3	57.0	13.9	82	NW			1		10k			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.61	752.1	52.9	11.6		W			8		7k			0.05	1.3	Showery	Andrew Gibb.
Mauritius (Observatory)	29.94	760.5	30.18	765.3	73.2	22.9	58	SSE	20.5	9.2		0	2		SE	0.07	1.8	Squally	C. Meldrum.
Melbourne (Observatory)	29.57	751.1	29.66	753.3	59.7	15.4	51	NE	25	11.2			10			0	0	Squally	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.41	747.0	51	10.6		W			7	5	5	W		0.3	8.		J. Youngclause.
North Unst, Shetland I's			29.21	741.9				W			4	4	5	W		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		Observer.
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 39° 45′, W. 65° 20′	5	WSW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Cape Town, C. Good Hope			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.17	664.7	29.89	759.2	66.2	19.0	92	SE			1	5cs	2d			Inap.	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.55	750.6	29.60	751.8	53.8	12.1	82	SW			4		10						
Faröe	29.55	750.6	29.57	751.1	50.9	10.5	92	WSW			6		10					Raining	
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.27	743.5	29.32	744.6	38.1	3.4	83	NE			8		8					Raining	
Thorshavn (Faröe)	29.12	739.7	29.16	740.6	44.1	6.7	83	NE			2		10					Raining	
Vestervig	29.31	744.5	29.41	746.9	49.3	9.6	96	SW			7		10					Raining	

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

FRENCH SERIES.

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

Alençon, Normal School	29.64	752.8	30.19	766.8	64.4	18	61	SW			2		2k		SW	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.98	761.4	30.08	764.1	73.8	23.2	42	SW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.79	756.7	30.04	763.1	64.6	18.1	48	WNW			4		8k		W	0	0		Klein, Commandant.
Avignon, Normal School	30.17	766.2	30.24	768.2	76.6	24.8	50	S			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.62	752.4	30.16	766.1	69.4	20.8	43	W			1		0			0	0	Clear	C. Saillard, Director.
Beauvais, Normal School	29.83	757.8	30.10	764.4	66.0	18.9	70	WSW			3		0			0	0	Clear	Frère Eugene Marie.
Besançon, Normal School	29.35	745.5	30.22	767.6	69.8	21	48	S			1		2		SW	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.96	761.0	30.16	766.0	73.8	23.2	40	NE			1		0			0	0	Clear	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.32	745.0	30.31	769.9	72.7	22.6	62	SE			2		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.67	753.6	30.21	767.4	66.2	19	63	WSW			1		0			0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	29.89	759.2	30.13	765.4	63.7	17.6	74	SW			3		9		SW	0	0		Ch. de Rermaree, Dir
Caen, Normal School	30.02	762.4	30.09	764.2	69.8	21	76	SW			2		2		SW	0	0	Slightly cld'y	M. Bietrix, Director.
Carcassonne, N. School	29.75	755.6	30.14	765.6	78.8	26	36	WNW			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	29.83	757.7	30.15	765.7	68.5	20.3	62	SW			3		0			0	0	Clear	Jadot, Director
Chartres, Normal School	29.57	751.0	30.13	765.3	65.5	20.3	80	NW			2		0			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.84	732.1	30.13	765.4	73.4	23.0	44	E			1		0			0	0		Alluard, Director.
Commercy, Normal School	29.29	743.9	30.13	765.2	66.9	19.4	57	W			4		k		W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	29.17	741.0	30.32	770.0	68.0	20	81	SW			1		8		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.51	749.5	30.26	768.5	70.9	21.6	53	NW			1		0			0	0	Clear	Ablard, Director.
La Roche-sur-Yon, N. Sch'	30.02	762.4	30.23	767.7	68.2	20.1	51	W			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.88	759.0	30.19	766.8	64.0	17.8	57	W			3		0			0	0	Clear	Poirrier, Director.
Lons-Le-Saunier, N. Schoo	29.32	744.8	30.3	767.8	67.1	19.5	50	SSW			1		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	30.11	764.8	30.22	767.6	62.2	16.8	66	SW			4		8		SW	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.60	751.8	30.21	767.2	70.7	21.5	44	NE			1		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.98	761.5	30.25	768.3	68.2	20.1	66	WSW			1		4		SE	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.08	738.7	30.11	764.7	65.8	18.8	49	SW			1		kn		SW	0	0		Barbier, Director.
Mont-Louis	25.08	666.9	30.31	769.9	57.9	14.4	63	E	21.3	9.5			0			0	0		M. Cave, for Dr. Fines.
Nice	30.23	767.8	30.26	768.7	69.4	20.8	75	E			3			E	E	0	0	Misty	Capt. Boissiere, Director.
Nismes, Normal School	30.03	762.7	30.23	767.8	79.3	26.3	34	E			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	30.12	765.0	30.28	767.7	69.3	20.7	48	SE	13.0	5.8			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.76	578.1			57.2	14.0							0			0	0	Clear	M. Bayles, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.14	740.1	30.17	766.8	73.4	23	42	S			1		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Ob	25.37	644.4			53.2	11.8	64	W			1		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.21	767.3	30.24	768.1	72.0	22.2	51	WSW			1		0			0	0	Clear	Lt E. Devante, Director
Rouen, Normal School	30.03	762.8	30.12	765.0	72.1	22.3	42	SSW			3		2		SW	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.07	763.6	30.09	764.3	72.9	22.7	40	SW			4		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.97	761.3	30.14	765.5	69.3	20.7	43	WSW			2		0			0	0	Clear	E. Renou, Director.
Tarbes, Normal School	29.07	738.3	30.13	765.3	80.6	27	48	NE											T. Huguet, Director.
Toulouse, Observatory	29.52	749.8	30.26	768.8	71.2	21.8	58	SSE			3		0			0	0	Clear	B. Baillaud, Dir.
Tours	29.99	761.8	30.19	766.8	69.8	21.0	48	W			2		0			0	0	Clear	M. de Tastes.
Versailles, Observatory	29.66	753.3	30.15	765.8	67.6	19.8	43	W			2		0			0	0	Very clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.42	747.3	30.14	765.6	78.8	26	55	SSW			1		0			0	0	Clear	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.12	765.0	29.15	765.7	80.6	27										0.12	S.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.86	758.5			69.6	20.9	45	SW			2		0			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai	29.87	758.7	29.89	759.3	65.3	18.5	93	SSE	8.3	3.7			8c		W	0	0	Fair	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 8, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,185.8 ft.; Pic du Midi, (Plantade) 2,386 m., or 7,828 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,012.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.22	742.1	30.08	764.0	66.2	19.0	54	W			6		6k	W		0	0		Prof. Dr. Hoh.
Berlin	29.71	754.5	29.87	758.8	62.8	17.1	63	NW			3		9			0	0		Prof. Dr. Arndt.
Breslau	29.50	749.2	30.03	762.7	56.8	13.8	78	W			3		10			0.283	7.13		Royal University Obs'y
Carlsruhe	29.69	754.1	30.11	764.9	65.8	18.8	62	W			4		9	W		0	0		Albert Senz.
Cassel	29.34	745.3	29.95	760.7	70.2	21.2	37	W			3		5	SW		0.017	0.43		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.73	755.1	30.10	764.4	70.7	21.5	34	SW			5		4			Inap.	Inap.		Physical Society.
Friedrichshafen	28.74	729.9	30.15	765.8	64.2	17.9	58	SW			4		2	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.74	755.3	29.81	757.1	58.8	14.9	87	W			7		10			0.256	6.5		Dr. Reinhold Kleeman.
Kiel	29.72	754.8	29.73	755.2	56.1	13.4	75	SW			7		10			0.307	7.8		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.75	755.6	29.83	757.7	55.9	13.3	59	SW			5		9	SW		0.004	0.1		Prof. E. Luther.
Köslin			29.78	756.4	53.2	11.8		W			4		4			0.071	1.8		H. Müller.
Leipsic Observatory	29.56	750.8	29.97	761.3	63.5	17.5	75	SW			4		9	SW		0.217	5.5		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.70	754.4	29.93	760.1	63.3	17.4	68	SW			5		7ks	WSW		0.106	2.7		Dr. Assmann.
Memel	29.74	755.5	29.79	756.7	50.7	10.4	73	SW			4		10ks					Showery	Reinbrecht & Issermann
Munich	28.31	719.2	30.19	766.7	64.9	18.3	45	W			4		3	W		0.004	0.1	Squally	Dr. C. Lang.
Neufahrwasser	29.74	756.4	29.80	756.8	58.3	14.6	61	SW			4		10	WSW		0	0		A. Lothes.
Neustadt (Palatinate)	29.56	750.8	30.09	764.2	66.6	19.2	47	SW			2		6	NW		0	0		Realiehrer Dicknether.
Posen	29.64	752.8	29.93	760.1	55.8	13.2	83	W			6		10			0.035	0.9		Prof. Dr. Magener.
Strassburg (in Alsace)	29.64	752.9	30.18	766.6	67.8	19.9	44	SW			4		6	SSW		0.009	0.24		Imp. University Observatory.
Stuttgart	29.19	741.4	30.07	763.6	66.2	19.0	45	W					6	W		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.64	727.5	30.23	767.7	62.4	16.9	62	W	5.4	2.4			6k		W	0.008	0.2		Realiehrer J. Hopfner.
Wustrow	29.73	755.2	29.75	755.7	53.1	11.7	83	SW			5		5ks			0.118	3.0		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.79	756.6	30.17	766.3	71.1	21.7		SW			2.0		5k					½ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.58	751.4	29.63	752.6	85.2	29.6	78	SW	38	17.0			0			0	0	Misty	
Deesa	29.12	739.6	29.57	751.0	102.9	39.4	17	WSW	11.8	5.3			0			0	0	Misty	
Bombay	29.68	754.0	29.72	754.9	86.1	30.1	71	WNW	14	6.3			5	W		0	0	D. clouds	
Poona (Yarrowda)	27.85	707.5	29.66	753.3	90.5	32.5	38	WNW	26	11.6			3			0	0	D. clouds	
Belgaum	27.31	693.6	29.81	757.2	82.3	27.9	64	SW	12	5.4			7	NE		0	0	D. clouds	
Lahore	28.72	729.6	29.42	747.3	105.3	40.7	20	Calm	3.8	1.7			0			0	0	Misty	
Roorkee	28.59	726.1	29.44	747.7	101.9	38.8	17	NW	4	1.8			3			0	0		
Agra	28.94	734.9	29.46	748.3	109.6	43.1	15	W	3.8	1.7			0			0	0		
Nagpur	28.55	725.2	29.56	750.8	94.5	34.7	30	NW	2.9	1.3			8		NW	0	0	D. clouds	
Jubbulpore	28.22	716.6	29.52	749.9	98.2	36.8	21	NE	4.3	1.9			4			0	0	D. clouds	
Lucknow	29.12	739.8	29.48	748.8	102.9	39.4	32	SE	3.1	1.4			0			0	0	Blue sky	
Allahabad	29.18	741.0	29.47	748.6	103.7	39.8	31	NE	1.5	0.7			0			0	0	Blue sky	
Patna	29.43	747.6	29.61	752.0	91.9	33.3	47	E	4.1	1.8			2	E	E	0	0		
Hazaribagh	27.64	702.1	29.63	752.5	82.0	27.8	73	ESE	11.3	5.0			1			0.78	19.8	Hail-storm	
Cuttack	29.60	751.7	29.68	753.7	88.1	31.2	67	S	0.7	0.3			2			1.38	35.0	D. clouds	
Calcutta (Alipore)	29.65	753.1	29.67	753.6	84.7	29.3	76	SE	6.0	2.7			2	SW	SW	0	0	D. clouds	
Goalpara	29.29	744.0	29.70	754.4	77.0	25.0	85	NW	4.3	1.9			9	SW		0.03	0.8	Gloomy	
Chittagong	29.62	752.2	29.70	754.5	81.1	27.3	78	SE	4.0	1.8			8			0	0	D. clouds	
Sibsagar	29.37	746.1	29.70	754.5	84.6	29.2	76	WSW	1.6	0.7			4			0	0	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.81	757.1	30.21	767.3	73.4	23.0	47	SW	4.3	1.9			4			0	0		Prof. Giovanni Clodig.
Milan	29.67	753.7	30.18	766.6	72.9	22.7	57	W	5.6	2.5			2	SE		0	0		Prof. Schiaparelli.
Padua	30.09	764.3	30.20	767.0	72.8	22.4	51	S	2.5	1.1			7	WSW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.27	743.5	30.17	766.2	73.0	22.8	45	SE	4.9	2.2			2	E		0	0		Prof. P. F. Denza.
Genoa	30.08	764.0	30.27	768.8	66.2	19.0	70	SW	5.6	2.5			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.30	718.7	30.17	766.4	68.0	20.0	55	NE			2		7			0	0		Prof. D. C. Bruno.
Pesaro	30.17	766.3	30.22	767.5	68.0	20.0	64	E	13.0	5.8			2			0	0		Prof. Luigi Guidi.
Florence	29.97	761.1	30.22	767.6	70.7	21.5	56	W			2		0			0	0		Cav. F. Meucci.
Leghorn	30.20	767.1	30.29	769.3	68.0	20.0	65	WSW	4.9	2.2			2			0	0		Prof. P. Monte.
Rome	30.08	763.9	30.25	768.3	73.2	22.9	57	WSW	9.4	4.2			5			0	0		Prof. P. S. Ferrari
Lecce	29.97	761.1	30.22	767.5	73.9	23.3	39	SE	3.1	1.4			3			0	0		Prof. C. De Giorgi.
Cosenza	29.30	744.3	30.18	766.6	74.8	23.8	70	SW	0	0			3			0	0		Prof. D. [illegible]
Cagliari	30.03	762.7	30.22	767.5	69.8	21.0	60	S			4		0			0	0		Prof. A. Pacinotti.
Palermo	30.00	762.1	30.26	768.6	69.8	21.0	46	NE	6.3	2.8			1			0	0		Prof. G. Ciacciatore.
Syracuse	30.13	765.4	30.18	766.5	71.2	21.8	58	SE	8.7	3.9			5	NE		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.71	754.7	30.23	767.7	70.7	21.5	56	ESE	2.5	1.1			3	SE		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					63.3	17.4	79	NNE	2.0	0.9			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.75	755.6	29.95	760.7	62.3	16.8	94	SW	0.6	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.77	756.1	29.84	757.9	63.9	17.7	88	SSW	3.0	1.3		4cs	2s	W	W	0	0	Fair	The Staff.
Wakayama	29.83	757.7	29.88	758.9	65.8	18.8	75	S	1.7	0.8			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara											0	2ck	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	24.97	634.1	29.96	761.0	57.2	14.0	50	Calm				k	1s	SE	Calm	Inap.	Inap.	Clear	Vicente Fernandez.
Leon	23.62	600.0			64.0	17.8	66	Calm	0	0		1c	0			0	0	Clear	Prof. M. Leal.
Mazatlan	24.35	618.4	29.92	760.0	66.2	19.0	60	W			2	10ck	0	SE		0	0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	29.59	751.6	29.85	758.2	71.3	21.8	95	SE			1	10c	0	SE		0	0	Hazy	The Staff
Morelia	23.03	584.9	29.98	761.5	55.9	13.3	51	Calm	0	0	0	3c	0	E		0	0	Clear	M. Pena, M. D.
Pabellon (Aguascalientes)	23.96†	608.6†			70.2	21.2	43	S			2	0	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.92	607.5	29.88	759.0	61.0	16.1	59	SE			1	2c	0	NE		0	0	Clear	Prof. P. Spina.
San Luis Potosi	23.38	593.9	30.18	766.6	50.5	10.3	47	Calm	0	0		5	0	E		0	0	Fair	G. Barroeta, M. D.
Tlacotalpam	24.14	613.1	30.02	762.5	63.0	17.2	61	SE			1	2	0	NE		0	0	Clear	Prof. M. M. Chàzaro.
Vera-Cruz	29.84	757.8	29.85	758.1	78.1	25.6	91	Calm			0								Prof. J. Rossell.
Zacatecas	22.54	572.6	30.05	763.2	62.4	16.9	51	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft. Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing																			
Groningen	29.99	761.7	29.99	761.7	59.4	15.2		WSW			6					0	0		
Helder	29.76	756.0	29.82	757.4	58.1	14.5		SW								0.142	3.6		
Hellevoetsluis	29.80	757.0	29.80	757.0	55.8	13.2		SSW			6					0	0		
Utrecht	29.93	760.3	29.93	760.3	59.2	15.1	68	WSW			6					0.039	1.0		
	29.89	759.3	29.94	760.5	63.0	17.2	59	SW			6		5			0.008	0.2	Cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.16	740.7	29.22	742.1	51.4	10.8	63	SW	13.9	6.2			3			0.610	15.5		
Brönö	28.90	734.1	28.94	735.1	46.4	8.0	75	NE	9	4			10			0.354	9.0	Raining	
Christiania	28.98	736.2	29.13	739.8	58.3	14.6	41	SSW	11	5			9			0.004	0.1		
Tromsö	29.03	737.4	29.09	738.8	48.6	9.2	56	S	7	3			2			0.079	2.0		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.01	762.3	30.22	767.6	65.1	18.4	74	NNE			2		4			0	0		Dr. J. A. Sampaio.
Campo Major	29.09	738.8	30.04	763.0	83.5	28.6	30	SSW	3.1	1.4			0			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.87	758.8	29.96	761.0	68.9	20.5	69	W	11.9	5.3			3			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.74	755.5	30.09	764.3	78.8	26.0	50	SW	8.7	3.9			0			0	0		The Staff.
Ponta Delgada (Azores)	30.09	764.3	30.16	766.1	66.6	19.2	61	NNE	7.4	3.3			4	ESE		0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.															Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Bartholomew Dias																			A. G. da Silva Costa, Com'd't.
D. Fernando																			A. M. de Sande, Com'd't.
Duque da Terceira																			J. C. M. Cabrate, 1st Lt.
Mindello [Costa																			J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Lobito, Benguela			29.93	760.1	72.5	22.5		W			1		0		1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																			J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																			Antonio Sarmento, Q. M.
Sâ da Bandeira																			F. Teixeira da Silva, Com'd't.
Sado, J. A. de Brito Capello Mossamedes, Benguela			29.97	761.2	70.2	21.2		WSW			4		3		W	3	WSW	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Hong Kong, China			29.98	761.4	79.7	26.5		E			1		10		E	0		2	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation: no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.61	752.1	29.63	752.6	59.0	15.0	41	SSE	4	2			5ks						Capt. Sseliwerstow.
Astrakhan	29.95	760.6	29.86	758.5	66.6	19.2	51	W	11	5			10s;n			blank	Blank		Capt. Wisganow.
Barnaul	29.37	746.9	29.80	758.4	55.0	12.8	40	NE	13	6			5					Light clouds	Meteorological Obs.
Dorpat	29.44	747.8	29.68	753.8	58.5	14.7	49	WSW	11	5			4k						Prof. Dr. Weihrauch.
Ekaterinburg	28.84	732.4	29.80	756.8	47.8	8.8	84	ESE	4	2			10						Meteorological Obs.
Irkutsk																			
Kasan	29.50	749.2	29.76	755.8	67.1	19.5	33	N	7	3		2ck							Physical Cabinet.
Kertch	29.95	760.6	29.97	761.1	61.2	16.2	71	SW	9	4			2						Lagorio.
Kieff	29.25	743.0	29.87	758.6	64.2	17.9	49	WSW	13	6			9cks n						Physical Cabinet.
Krotkowo*	29.34	745.2	29.79	756.7	65.9	19.4	40	NNW	4	2			6k						Cand. Fatjanow.
Lugan	29.76	756.0	29.97	761.1	62.1	16.7	50	E	4	2			8						Meteorological Obs.
Moscow	29.20	741.6	29.72	754.9	64.9	18.3	49	SSW	10.1	4.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.87	758.6	29.94	760.4	62.1	16.7	70	NNW	13	6			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.77	756.2	29.86	758.4	37.6	3.1	93	Calm	0	0			10n					Raining	
Nukuss																			
Orenburg																			
Pekin (China)	29.58	751.4	29.72	755.0	70.3	21.8	48	SE	4	2			2k						Physical Observatory.
St. Petersburg	29.63	752.5	29.64	752.9	50.9	10.5	88	W	7	3			10n					Raining	Central Physical Obs.
Tashkend	28.36	720.3	29.87	758.6	73.9	23.3	62	E	7	3			1						Teich, A. M.
Tiflis	28.65	727.7	30.06	763.4	61.5	16.4	49	NNW	31	14			1ks						Physical Observatory.
Vladivostock																			
Warsaw	29.52	749.8	29.94	760.5	54.5	12.5	82	W	13	6			10n					Raining	Astronomical Obs.
Wilna	29.43	747.4	29.84	757.9	58.5	14.7	48	SSW	9	4			7					Heavy clouds	Astronomical Obs.
Yeniseisk	29.73	755.2	30.02	762.6	41.4	5.2	53	N	25	11			8						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 466 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.13	765.3	30.23	767.9	68.0	20	57	SSW	3.8	1.7			0			0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.08	763.9	30.13	765.3	78.4	25.8	48	NW	2.8	1.26		0	0			0	0	Clear.	Prof. Manuel de Naveras
Burgos, Met. Obs'y	27.22	691.5			78.8	26.0	35	S	4.0	1.78			0			0	0	Clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	27.96	710.1	30.08	763.9	82.8	28.2	43	S	6.7	3.00		0	0			0	0	Clear.	The Staff.
Murcia, Met. Obs'y	30.07	763.6	30.21	767.3	78.8	26.0	54	ESE	5.7	2.53		0	0			0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.15	740.4	30.00	762.0	61.9	27.7	38	WSW	7.4	3.3			1			0	0	Almost clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.92	759.9	29.99	761.6	76.2	24.6	88	E	2.2	1.0		6ck	1k	W	SE	0.984	25.0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.83	757.6	29.88	758.9	85.8	29.9	78	NE	5.1	2.3			1s			0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.01	762.2	30.11	764.7	79.3	26.3	35	ESE	22.9	10.3		0	3		SE	0	0		Capt. C. Pulason, R. N., Dir.
San Juan de Porto Rico, W. I.	29.92	760.0	30.01	762.3	81.0	27.2	78	E	8.8	3.93		6cs	5k	E	E	0.016	0.25	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.20	743.9	29.33	744.9	44.2	6.8		S			2		10			0	0		
Umea	29.17	741.0	29.22	742.3	46.0	7.8	81	S			7		10			0.307	7.8		
Hernosand	29.15	740.5	29.21	741.8	45.0	7.2	68	SSE			6		10			0	0		
Stockholm	29.21	742.0	29.39	746.5	50.4	10.2	82	SW			6		10			0.031	0.8		
Wisby	29.48	748.8	29.54	750.3	49.6	9.8	92	SW			6		10					Raining	
Sub-Series.																			
Upsala	29.23	742.5	29.32	744.7	51.4	10.8	84	S	22.6	10.1			10			0.315	8.00	Raining	Nils Ekholm.

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

Swedish Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Fa'l. R'n.	
Barque Australia				J. P. Påhlson.
H. M. Corvette Balder				Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.78	731.1	30.17	766.2	69.3	20.7	45	SSW			2		0			0	0	Clear.	The Observatory.
Zurich	28.56	725.5	30.15	765.9	68.2	20.1	55	W			2		1			0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.6 mm.; Thermometer, +2.9 Cent Relative Humidity, —11 per cent.

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

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.19	766.7	68.0	20.0	43	SE	4	2.0			1		N	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.30	769.5	65.8	18.8		NW			1		2			0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			30.02	762.6	73.2	22.9	69	N			2		0			0	0		Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					48.0	8.9		Calm	0	0			Fog			0	0	Foggy	Hon. J. Ferguson.
Chatham, N. B.	29.92	760.0	29.98	761.5	64.6	18.1	86	SW	1	0.4		8k	2ks	SW		0.05	1.3	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.99	761.7	30.03	762.7	56.1	13.4	93	SW	4	1.8		10s				0.035	0.89	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.82	757.4	30.01	762.2	66.5	19.2	73	W			1	1cs	0			0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.83	757.7	30.00	762.0	48.5	9.2		S			1		Fog			0.05	1.3	Foggy	H. A. Johnson.
Father Point, Quebec	29.97	761.2	30.00	762.0	41.3	5.2	82	SW	10	4.5			Fog			0	0	Foggy	J. McWilliams.
Fredericton, N. B.	30.00	762.0	30.06	763.5	55.0	12.8	94	S	5	2.2			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.65	727.7	29.45	748.0	53.7	12.1	91	NW	6	2.7			10n			1.180	29.97	Cloudy	James Stewart.
Granton, Ontario	28.99	736.3	30.05	763.3	69.0	20.6	80	W			1	4cs	0	W		0	0	Fair	James Grant.
Halifax, N. S.	29.96	761.0	30.09	764.3	54.0	12.2	93	SW	4	1.8			10n			0.030	0.76	Cloudy	A. Allison.
Hamilton, Ontario	29.69	754.1	30.08	764.0	68.5	20.3	81	S			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.72	754.9	30.05	763.3	68.0	20.0	74	SW	2	0.9		4ck	0	W		0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.97	761.2	30 0	762.0	68.5	20.3	67	SW	10	4.5			8n			0	0	Cloudy	C. H. Rigby.
Montreal, Quebec	29.85	758.2	30.04	763.0	64.7	18.2	72	W	6	2.7		0	1ks			0	0	Clear	C. H. McLeod, C. E
Moose Factory, Ontario	29.89	759.2	29.92	760.0	47.8	8.8	86	SW			2		10n			0.67	17.0	Cloudy	J. R. Nason.
Norwood, Ontario	29.37	746.0	30.05	763.3	66.5	19.2	78	Calm	0	0		2ck	0	W		0.14	3.6	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.37	746.0	30.06	763.5	58.0	14.4	82	SE	7	3.1		3cs	1ks	W		Inap.	Inap.	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.35	745.5	30.07	763.8	70.7	21.5	66	S			1	0	4ks			0.02	0.5	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.43	747.5	30.11	764.8	60.1	15.6	94	S	2	0.9		5ck	0	S		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.46	748.3	30.09	764.3	61.1	16.2	87	E	4	1.8		8ck	0	W		0	0	Cloudy	M. Payne.
Quebec, Quebec	29.71	754.6	30.04	763.0	52.0	11.1	98	Calm			0		Fog			0	0	Foggy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.62	752.3	30.07	763.8	54.0	12.2	74	Calm	0	0		5c	0	Calm		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.91	759.7	30.07	763.8	48.0	8.9	96	S	7	3.1			Fog			0.030	0.51	Dense fog	G. Murdock, C. E.
Saugeen, Ontario	29.32	744.7	30.01	762.2	64.2	17.9	87	S	8	3.6		7k	0			0.04	1.0	Clearing	K. Stewart.
Stratford, Ontario	28.81	731.8	30.04	763.0	66.8	19.3	80	SW	4	1.8		2cs	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.99	761.7	30.03	762.7	61.0	16.1	79	W	10	4.5			10s			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.73	755.1	30.10	764.5	65.0	18.3	79	SE	2	0.9		4cs	0	W		0	0	Fair	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.01	736.8	30.02	762.5	72.0	22.2	64	S	10	4.5		2c	4s	W		0.08	2.0	Fair	Professor Wolverton.
Yarmouth, N. S.	30.05	763.3	30.12	765.0	49.6	9.8	98	SW	6	2.7			Fog			0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.89	759.2	30.14	765.5	49	9.4	93	W				10ks	10ns			0	0	Cloudy	John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.94	760.5	50.0	10.0		W			3					0.28	7.1		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.05	763.3	30.13	765.3	73	22.8	67	S	7	3.1		2c	0	Calm		0	0	Fair	
Alpena, Michigan	29.32	744.7	29.96	761.0	53	11.7	80	SE	13	5.8			10s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.99	736.3	30.11	764.8	70	21.1	84	SE	10	4.5			10s		Calm	0	0	Cloudy	
Atlantic City, New Jersey	30.20	767.1	30.21	767.3	63	17.2	100	SW	4	1.8			Fog		Calm	0.30	7.6	Foggy	
Augusta, Georgia	30.04	763.0	30.24	768.1	72	22.2	85	Calm	0	0			10s		SE	0.14	3.6	Cloudy	
Baltimore, Maryland	30.16	766.1	30.21	767.3	70	21.1	85	N	2	0.9			10s;fg		W.Calm	0.05	1.3	Cloudy	
Barnegat, New Jersey	30.16	766.1	30.18	766.6	65	18.3	94	SW	4	1.8		8k	0	Calm		0.37	9.4	Clearing	
Bismarck, Dakota	28.01	711.4	29.87	758.7	50	10.0	78	W	10	4.5		5c	0	S		0	0	Fair	
Boerne, Texas	28.42	721.9	29.68	753.9	68	20.0	90	SE	2	0.9		5k	2ks	Calm	S	0	0	Fair	
Boise City, Idaho	27.29	693.2	30.25	768.3	40	4.4	77	W	2	0.9		0	5s		W	0	0	Fair	
Boston, Massachusetts	29.96	761.0	30.11	764.8	71	21.7	71	SW	12	5.4		Haze	Haze	Calm	Calm	0	0	Hazy	
Brackettville, Texas	28.68	728.5	29.70	754.4	69	20.6	95	E	14	6.3			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.75	730.2	29.72	754.9	51	10.6	72	W	14	6.3		5k	0	W		0	0	Fair	
Brownsville, Texas	29.80	756.9	29.84	757.9	81	27.2	78	SE	3	1.3		0	0			0	0	Clear	
Buffalo, New York	29.40	746.7	30.07	763.8	69	20.6	56	SW	4	1.8		5ck	Haze	SW	Calm	0	0	Fair	
Burkes, Arizona					65	18.3	49	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.79	756.7	30.07	763.8	68	20.0	74	SW	5	2.2		5ck	0	W		0	0	Fair	
Cairo, Illinois	29.66	753.4	30.04	763.0	73	22.8	63	SE	6	2.7		0	0			0	0	Clear	
Campo, California	27.26	692.4	29.83	757.7	38	3.3	51	SW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.24	768.1	30.25	768.3	73	22.8	85	SE	6	2.7			10s		SE	2.53	64.3	Cloudy	
Cape Henry, Virginia	30.19	766.8	30.20	767.1	72	22.2	85	S	11	4.9		0	Haze		Calm	Inap.	Inap.	Clear	
Cape Lookout, N. Carolina	30.23	767.8	30.25	768.3	73	22.8	90	S	4	1.8		8k	Haze	SW	Calm	0	0	Cloudy	
Cape May, New Jersey	30.18	766.6	30.21	767.3	67	19.4	90	S	1	0.4			Fog		Calm	0.63	16.0	Foggy	
Castroville, Texas	29.08	738.6	29.75	755.6	73	22.8	67	S	2	0.9		0	2ks		S	0	0	Fair	
Cedar Keys, Florida	30.08	764.0	30.11	765.8	74	23.3	86	E	11	4.9		0	0			0	0	Clear	
Charleston, South Carolina	30.14	765.5	30.20	767.1	77	25.0	73	SE	12	5.4		0	0			0	0	Clear	
Charlotte, North Carolina	29.36	745.7	30.15	765.8	73	22.8	72	S	3	1.3		5cs	Haze	S	Calm	0.04	1.0	Fair	
Chattanooga, Tennessee	29.38	745.0	30.10	764.5	72	22.2	90	SE	6	2.7			10s		S	0.42	10.7	Cloudy	
Cheyenne, Wyoming	23.85	605.8	29.79	756.7	44	6.7	30	SE	12	5.4		0	0			Inap.	Inap	Clear	
Chicago, Illinois	29.25	742.9	29.91	759.7	68	20.0	74	SW	13	5.8		8cs	0	NW		0	0	Fair	
Chincoteague, Virginia	30.21	767.3	30.23	767.8	67	19.4	96	S	11	4.9		10k	Haze	Calm	Calm	0.15	3.8	Cloudy	
Cincinnati, Ohio	29.46	748.3	30.09	764.3	66	18.9	76	SE	2	0.9		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.39	746.5	30.09	764.3	67	19.4	64	SE	6	2.7		6c;ck	0	W		0	0	Fair	
Coleman City, Texas	28.04	712.2	29.61	752.1	73	22.8	76	SE	6	2.7		0	5s		Calm	0	0	Fair	
Columbus, Ohio	29.26	743.2	30.06	763.5	74	23.3	51	SE	2	0.9		5cs	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	27.89	708.4	29.47	748.5	73	22.8	63	SE	8	3.6		8k	0	S		0	0	Fair	
Corsicana, Texas	29.45	748.0	29.90	759.4	71	21.7	95	SE	4	1.8			10s		Calm	0	0	Cloudy	
Davenport, Iowa	29.22	742.2	29.83	757.7	69	20.6	70	S	17	7.6		5cs	5s	W	W	0.03	0.8	Cloudy	
Dayton, Washington T'y					39	3.9	81	SW			2	0	8s		SW	0.05	1.3	Fair	
Deadwood, Dakota	25.23	640.8			46	7.8	54	S	4	1.8			10s		Calm	0	0	Cloudy	
Decatur, Texas	28.68	728.5	29.80	756.9	69	20.6	90	SE	8	3.6			10s		SE	0	0	Cloudy	
Delaware Breakwater, Del.	30.19	766.8	30.21	767.3	65	18.3	100	S	4	1.8			Fog			0.90	22.9	Foggy	
Denison, Texas	29.08	738.6	29.84	757.9	70	21.1	90	S	10	4.5		5c	0	W		0	0	Fair	
Denver, Colorado	24.57	624.1	29.79	756.7	46	7.8	33	S	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	28.90	734.0	29.72	754.9	72	22.2	76	SW	5	2.2		5k	0	SW		Inap.	Inap.	Fair	
Detroit, Michigan	29.40	746.7	30.04	763.0	65	18.3	84	SW	3	1.3		10cs	0	SW		0	0	Cloudy	
Dodge City, Kansas	27.09	688.1	29.22	742.2	70	21.1	57	S	18	8.0		0	0			0	0	Clear	
Dubuque, Iowa	29.18	741.1	29.84	757.9	68	20.0	70	SE	6	2.7		2ck	5ks	SE	SE	0.63	16.0	Fair	
Duluth, Minnesota	29.04	737.6	29.71	754.6	47	8.3	85	SW	1	0.4		8k	2s	SW	SW	0.05	1.3	Cloudy	
Eagle Pass, Texas	29.02	737.1	29.71	754.6	73	22.8	76	Calm	0	0		5ck	0	Calm		0	0	Fair	
Eastport, Maine	29.98	761.5	30.05	763.3	49	9.4	100	S	2	0.9			Fog		Calm	0.05	1.3	Dense fog	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.40	746.7	30.09	764.3	72	22.2	54	S	4	1.8		5ck	0	W		0	0	Fair	
Escanaba, Michigan	29.21	741.9	29.84	757.9	57	13.9	69	SW	16	7.2			10s		SW	0	0	Cloudy	
Florence, Arizona	28.25	717.5	29.85	758.2	72	22.2	67	E	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	24.90	632.4	30.35	770.9	48	8.9	56	NE	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.74	704.6	29.54	750.3	46	7.8	85	SW	1	0.4		5cs	0	NW		0.95	24.1	Fair	
Fort Custer, Montana	26.71	678.4			44	6.7	67	NW	4	1.8			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.08	637.0	30.04	763.0	68	20.0	38	SW	6	2.7		0	5s		SW	Inap.	Inap	Fair	
Fort Elliot, Texas	26.73	678.9	28.84	732.5	66	18.9	74	SE	16	7.2		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.31	744.5	29.82	757.4	76	24.4	64	S	12	5.4		0	0			0	0	Clear	
Fort Grant, Arizona	25.09	637.3	29.80	759.2	63	17.2	33	N	12	5.4		0	0			0	0	Clear	
Fort Griffin, Texas	28.52	724.4	29.73	755.1	70	21.1	86	SE	4	1.8		0	2s		Calm	0	0	Fair	
Fort Keogh, Montana	27.13	689.1			43	6.1	42	Calm	0	0		0	5s		Calm	0.41	10.4	Fair	
Fort McKavett, Texas	27.56	700.0	29.39	746.5	69	20.6	65	E	5	2.2			10ks		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.58	725.9	29.63	752.6	72	22.2	76	S	13	5.8		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.94	709.7			46	7.8	83	W	4	1.8		0	0			0.03	0.8	Clear	
Fort Verde, Arizona					62	16.7	46	SW			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.85	758.2	29.89	759.2	79	26.1	82	SE	7	3.1		2c	2ks	Calm	SE	0	0	Fair	
Grand Haven, Michigan	29.28	743.7	29.90	759.4	71	21.7	66	SE	18	8.0		2k	0	SW		0.10	2.5	Clear	
Helena, Montana					57	2[illegible]	54	SW	9	4.0		10cs	0	SW		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.27	743.4	30.01	762.2	71	21.7	66	SE	3	1.3		8c	0	Calm		0	0	Cloudy	
Indianola, Texas	29.84	757.9	29.87	758.7	78	25.6	82	S	12	5.4		10k	2ks	Calm	Calm	0	0	Fair	
Jacksboro, Texas	28.70	729.0	29.78	756.4	70	21.1	75	SE	2	0.9		0	0			0	0	Clear	
Jacksonville, Florida	30.12	765.0	30.15	765.8	77	25.0	77	E	2	0.9		2k	0	Calm		0	0	Clear	
Keokuk, Iowa	29.26	743.2	29.84	757.9	70	21.1	75	S	3	1.3		5c;cs;k	1s	SW;SW;S	Calm	0	0	Fair	
Key West, Florida	29.98	761.5	30.01	762.2	79	26.1	87	E	10	4.5		5k	0	E		0.11	2.8	Fair	
Kittyhawk, North Carolina	30.14	765.5	30.25	768.6	75	23.9	81	SW	14	6.3		8k	0	SW		0	0	Cloudy	
Knoxville, Tennessee	29.17	740.9	30.15	765.8	70	21.1	88	SE	2	0.9			10ks		SE	0	0	Threatening	
La Crosse, Wisconsin	29.08	738.6	29.78	756.4	64	17.8	94	S	3	1.3			10n		Calm	1.46	37.1	Light rain	
La Mesilla, New Mexico	25.93	658.6	30.08	764.0	62	16.7	36	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.41	747.0	29.74	755.4	75	23.9	40	NE	8	3.6		0	0			0	0	Clear	
Leavenworth, Kansas	28.97	735.8	29.76	755.9	75	23.9	68	S	4	1.8		0	0			0	0	Clear	
Lewiston, Idaho																			
Little Rock, Arkansas	29.63	752.6	29.94	760.5	73	22.8	85	Calm	0	0		2ck	0	SW		0	0	Fair	
Los Angeles, California	29.51	749.5	29.84	757.9	58	14.4	88	SE	1	0.4			8s		SE	0	0	Cloudy	
Louisville, Kentucky	29.50	749.3	30.04	763.0	70	21.1	66	E	1	0.4		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.52	749.8	30.18	766.6	76	24.4	64	S	3	1.3		2k	0	W		0.03	0.8	Clear	
Madison, Wisconsin	28.88	738.5	29.82	757.4	65	18.3	89	S	9	4.0			10s		S	1.10	27.9	Cloudy	
Marquette, Michigan	29.04	737.6	29.70	754.4	64	17.8	73	W	28	12.5			10s		SW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Upper. 0—10.	Lower. 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.20	716.3	29.88	758.9	71	21.7	85	S	10	4.5			10ks		S	0	0	Cloudy	
Memphis Tennessee	29.65	753.1	29.98	761.5	76	24.4	69	SE	7	3.1		Haze	2s		SE	0	0	Hazy	
Milwaukee, Wisconsin	29.17	740.9	29.88	758.9	59	15.0	88	S	8	3.6			10ks		SW	0.41	10.4	Cloudy	
Mobile, Alabama	30.02	762.5	30.06	763.5	77	25.0	86	SE	9	4.0		0	0			0.01	0.3	Clear	
Montgomery, Alabama	29.90	759.4	30.13	765.3	74	23.3	90	SE	8	3.6			10ks		SE	0	0	Cloudy	
Morgantown, West Virginia	29.15	740.4	30.11	764.8	72	22.2	71	Calm	0	0		5c	0	Calm		0	0	Fair	
Mt Washington, N H	23.92	607.6	30.28	769.1	44	6.7	92	NW	32	14.3			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.55	750.6	30.06	763.5	75	23.9	68	SE	2	0.9		1k	0	S		0	0	Clear	
New Haven, Connecticut	30.04	763.0	30.16	766.1	68	20.0	95	S	6	2.7			10s;fg		Calm	0	0	Cloudy	
New London, Connecticut	30.11	764.8	30.16	766.1	64	17.8	100	W	2	0.9			Fog		Calm	0.11	2.8	Dense fog	
New Orleans, Louisiana	29.95	760.7	30.01	762.2	78	25.6	82	E	3	1.3		0	1s		E	0	0	Clear	
Newport, Rhode Island	30.11	764.8	30.16	766.1	58	14.4	100	S	4	1.8			Fog			0.18	4.6	Misty	
New River, North Carolina																			
New York, New York	30.00	762.0	30.17	766.3	69	20.6	84	W	4	1.8		5c;k	Haze	W	Calm	0	0	Fair	
Norfolk, Virginia	30.16	766.1	30.21	767.3	79	26.1	70	SW	4	1.8		0	Haze		Calm	0.47	11.9	Clear	
North Platte, Nebraska	26.84	681.7	29.31	744.5	56	13.3	51	NE	14	6.3		10k	0	SE		0.05	1.3	Cloudy	
Olympia, Washington Ter	30.28	769.1	30.32	770.1	41.0	5.0	87	SW	8	3.6		2k	2s	W	W	0.01	0.3	Fair	
Omaha, Nebraska	28.58	725.9	29.60	751.8	75	23.9	68	S	8	3.6		0	8s		SW	0.02	0.5	Cloudy	
Oswego, New York	29.78	756.4	30.10	764.5	70	21.1	66	S	6	2.7		5ck	0	W		0	0	Fair	
Pembina, Dakota	28.61	726.7	29.41	747.0	52	11.1	93	NW	14	6.3			10s		Calm	0.82	20.8	Cloudy	
Pensacola, Florida	30.04	763.0	30.07	763.8	77	25.0	82	SE	12	5.4		7k	0	SE		0	0	Fair	
Philadelphia, Pennsylvania	30.15	765.8	30.20	767 1	68	20.0	84	NW	4	1.8		10k	Fog	NW	Calm	0.05	1.3	Cloudy	
Phœnix, Arizona	28.60	726.4	30.29	769 4	81	27.2	32	SE	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.64	448.0	29.85	758.2	28	— 2.2	43	SW	30	13.4		0	0			0	0	Clear	
Pilot Point, Texas	29.09	738.9	29.91	759.7	69	20.6	85	S	12	5.4			10s		S	0	0	Cloudy	
Pioche, Nevada	23.98	609.1	29.75	755.6	37	2.8	31	N	3	1.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.13	765.3	65	18.3	73	NE	4	1.8		5ck	Sm'e	Calm	Calm	0	0	Fair	
Port Huron, Michigan	29.39	746.5	30.03	762.7	66	18.9	74	S	8	3.6		8cs	0	W		0	0	Fair	
Portland, Maine	30.01	762.2	30.06	763.5	64	17.8	83	W	4	1.8		8k	Fog	Calm		0.05	1.3	Cloudy	
Portland, Oregon	30.32	770.1	30.40	772.1	42.5	5.8	87	S	6	2.7		5k	2ks	NW	NW	0.02	0.5	Fair	
Portsmouth, North Carolina					72	22.8	85	Calm	0	0		2k	8ks	Calm	Calm	0	0	Cloudy	
Prescott, Arizona	24.63	625.6	29.99	761.7	64	17.8	43	S	9	4.0		0	0			0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	76	24.4	82	E	8	3.6		8ck	1ks	Calm	E	0.24	6.1	Fair	
Red Bluff, California	29.82	757.4	30.18	766.6	53.0	11.7	67	N	8	3.6		0	0			0	0	Clear	
Rio Grande City, Texas	29.65	753.1	29.86	758.4	76	24.4	86	SE	8	3.6			10s		SE	0	0	Cloudy	
Rochester, New York	29.50	749.3	30.09	764.3	68	20.0	65	W	7	3.1		5k	0	W		0	0	Fair	
Roseburg, Oregon	29.84	757.9	30.44	773.2	35.5	1.9	95	Calm	0	0		1c	0	Calm		0.02	0.5	Clear	
Sacramento, California	29.97	761.2	30.05	763.3	60	15.6	71	NW	22	9.8		0	0			0	0	Clear	
St. Louis, Missouri	29.40	746.7	29.95	760.7	68	20.0	70	S	9	4.0		0	0			0	0	Clear	
St. Paul, Minnesota	28.91	734.3	29.70	754.4	58	14.4	91	SE	3	1.3			10s		SW	0.16	4.1	Cloudy	
Salt Lake City, Utah	25.57	649.5	29.90	759.4	40	4.4	48	SW	7	3.1			10ks		NW	0.02	0.5	Cloudy	
San Antonio, Texas	29.18	741.1	29.85	758.2	71	21.7	80	Calm	0	0			10s		SE	0	0	Cloudy	
San Diego, California	29.80	756.9	29.87	758.7	59	15.0	88	SE	1	0.4			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.41	747.0	30.05	763.3	70	21.1	61	S	12	5.4		5c	0	W		0	0	Fair	
Sandy Hook, New Jersey	30.14	765.5	30.18	766.6	76	24.4	77	W	5	2.2		5c;k	Fog	Calm;W	Calm	0	0	Fair	
San Francisco, California	30.04	763.0	30.10	764.5	53	11.7	67	NW	1	0.4		5c	0	NW		0	0	Fair	
Santa Fé, New Mexico	23.17	588.5	29.71	754.6	55	12.8	28	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.19	766.8	81	27.2	67	SE	8	3.6		1k	Haze	SE	Calm	0	0	Clear	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	77	25.0	82	S	3	1.3		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.20	767.1	30.24	768.1	76	24.4	82	E	10	4.5		1k	0	Calm		0	0	Clear	
Socorro, New Mexico	25.22	640.6	29.29	744.0	64	17.8	17	S	3	1.3		0	0			0	0	Clear	
Springfield, Illinois	29.30	744.2	29.95	760.7	68	20.0	74	S	10	4.5		2cs	0	W		0	0	Fair	
Springfield, Massachusetts	30.02	762.5	30.15	765.8	70	21.1	75	S	2	0.9		0	8ks		S	0	0	Fair	
Stockton, Texas	26.73	678.9	29.73	755.1	77	25.0	35	SW	11	4.9			10s		SW	Inap.	Inap.	Threatening	
Thatcher's Island, Mass	30.04	763.0	30.10	764.5	57	13.9	100	S	10	4.5			Fog			0	0	Foggy	
Toledo, Ohio	29.36	745.7	30.01	762.2	69	20 6	65	SW	6	2.7		8c	0	SW		0	0	Fair	
Tucson, Arizona	27.35	694.7	29.90	759.4	77	25.0	34	S	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.90	759.4	30.42	772.7	43	6.1	59	SW	26	11.6		0	0			0	0	Clear	
Uvalde, Texas	28.90	734.0	29.69	754.1	69	20.6	85	Calm	0	0		5ck	0	W		0	0	Fair	
Vicksburg, Mississippi	29.77	756.1	30.02	762.5	75	23.9	86	SE	4	1.8			10s		S	0	0	Cloudy	
Virginia City, Montana	24.18	614.2	29.66	753.4	28	— 2.2	77	Calm	0	0		0	0			0.35	8.9	Clear	
Visalia, California	29.57	751.1	29.94	760.5	55.5	13.1	85	NW	4	1.8		0	0			0	0	Clear	
Washington, D. C	30.10	764.5	30.21	767.3	66	18.9	95	NE	3	1.3			10s;fg		Calm	0.91	23.1	Cloudy	
Wickenburg, Arizona					63	17.2	38	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.16	766.1	30.23	767.8	75	23.9	77	S	4	1.8		5k	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.73	653.5	30.09	764.3	37	2.8	45	SE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.12	765.0	30.16	766.1	59	15.0	100	SW	14	6.3			Fog		SW	0.08	2.0	Foggy	
Yankton, Dakota	28.51	724.1	29.76	755.9	60	15.6	65	NE	4	1.8		2ck	5ks	W	Calm	1.50	38.1	Fair	
Yuma, Arizona	29.53	750.0	29.68	753.9	67	19.4	69	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.01	559.0			56.0	13.3	80	Calm	0	0		2cs;k	2ks			0.12	3.0	Fair	Thomas Herran.
Havana, Cuba, W. I	29.97	761.2	30.02	762.5	76	24.4	86	SE	2.4	1.1		8ck;cs	0	Calm		1.04	26.4	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.96	761 0	29.97	761.2	77	25.0	87	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.88	758.9	29.96	761.0	79	26.1	78	E	6	2.7		5ck	2s	NE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	29.96	761 0	29.96	761.0	80	23.7	70	E			2	5k	7ks	E		0.100	2.54	½ Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.42	747.3	29.97	761.2	79	26.1	95	Calm			0		10ks			0	0		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		SE				2c	4k	NE	SE	0.71	18.	½ covered	Earl Flint.
Santiago de Cuba, W. I	29.97	761.2	30.00	762.0	78	25.6	82	Calm	0	0		8cs		NW		0	0		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.03	762 7	30.08	764.0	38.0	3.8	95	S	10	4.5		3ck	0	NE		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

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

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

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.07	763.8	77	25.0	86	ESE	17	7.6			5d		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.11	764.8	66	18.9	74	NW	5	2.2			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.87	758.7	65	18.3	69	SW			1	3c;ck		W		0	0			Fair	
§ Adams, Punta Arenas, Costa Rica	29.87	758.7	78	25.6	86	N			1		2		N					Fair	
§ Alaska, Ancon, Peru *	29.87	758.7	63	17.2	94	Calm			0		10					Smooth		Misty	
§ Alert, Yokohama, Japan	29.82	757.4	68	20.0	84	SSW			2		2		Calm	0	0	Smooth		Fair	
Alliance, Norfolk, Va.	30.22	767.6	73	22.8	95	SW			1		2		W	0	0			Clear.	
§ Ashuelot, Shan hai, China	29.90	759.4	70	21.1	95	SE			1		0							Clear.	
Colorado, New York, N. Y.	30.17	766.3	70	21.1	85	SW	3	1.3			5		SW	0	0			Hazy	
§ Constitution, New York, N. Y.	30.16	766.1	67	19.4	95	W	6	2.7			8		W					Misty	
§ Franklin, Off Navy Yard, Norfolk, Va	30.23	767.8	73	22.8	90	WSW	4.8	2.1			2		W	0.24	6.1			Fair	
Independence, § Mare Isl. Navy Yard, Cal.	30.02	762.5	69	20.6	100	NW	1.2	0.5			1		NW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.02	762.5	42	5.6	91	ENE			2		8					Mod'ate		Cloudy	
Kearsarge, N 20 40′, W. 83° 45′	29.95	760.7	80	26.7	81	ESE			4		5		ESE			Smooth	ESE	Fair	
§ Lackawanna, N 17° 00′ W. 100° 43′ †	29.99	761.7	82	27.8	83	NW			2		8		NW					Fair	
§ Marion, S. 41° 10′, W. 57° 17′	29.78	756.4	49	9.4	93	NNW			4		10			0	0	Mod'ate	NNW	Hazy	
§ Michigan, Erie, Pa.	30.02	762.5	68	20.0	65	SSE			3		10		SSE					Cloudy	
§ Monocacy, Shanghai, China	29.89	759.2	69	20.6	85	SSE			1		2			0	0			Clear.	
§ New Hampshire, Port Royal, S. C.	30.21	767.3	76	24.4	86	SE	12	5.4			1		Calm	0	0			Clear	
Nipsic, Genoa, Italy	30.26	768.6	69	20.6	70	Calm			0		2					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	29.95	760.7	64	17.8	83	Calm			0		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.90	759.4	68	20.0	95	SSE			3		0							Clear	
§ Passaic, Washington, D. C.	30.22	767.6	68	20.0	90	NE			1		10			0.1	3.			Foggy	
§ Pensacola, Vallejo, Cal.	30.04	763.0	56	13.3	75	SW			1		5		SW			Smooth		Fair	
§ Portsmouth, N 32° 54′, W. 70° 12′	30.30	769.6	70	21.1	70	E			2		5					Mod'ate	ESE	Fair	
§ Powhatan, N. 37° 34′, W. 76° 13′	30.19	766.8	71	21.7	90	SSW			3		2							Fair	
§ Quinnebaug, N. 45° 16′, W. 15° 47′	30.09	764.3	64	17.8	73	WSW			3		5		SW			Long	WNW	Fair	
§ Richmond, Shanghai, China	29.90	759.4	71	21.7	80	ESE			3		2		SE					Clear	
§ Rio Bravo, Brownsville, Texas †	30.04	763.0	76	24.4	95	SE	1	0.4			2		Calm	0	0			Fair	
§ Saratoga, Lisbon Portugal	30.10	764.5	78	25.6	57	Calm			0		0			0	0			Hazy.	
§ Shenandoah, Montevideo, Uruguay	30.07	763.8	49	9.4	78	N			3		2		NW			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.20	767.1	68	20.0	90	NW	4	1.8			10		N	0.06	1.5			Cloudy	
Swatara, Bangkok, Siam †	29.79	756.7	83	28.3	87	SSE			2		10		Calm			Smooth		Cloudy	
§ Tennessee, N 24° 19′, W. 81° 35′	30.02	762.5	79	26.1	95	E	6	2.7			8		E	0	0	Smooth		Cloudy	
Ticonderoga, Yokohama, Japan	29.85	758.2	67	19.4	100	S			1		2		SW			Smooth		Clear.	
§ Trenton, N. 41° 13′, W. 40° 47′	30.19	766.8	64	17.8	78	NW			3		10			0	0	None		Cloudy	
§ Vandalia, New York Harbor, N. Y	30.12	765.0	73	22.8	85	SW			1		8		NW					Misty	
§ Wabash, Boston, Mass.	30.12	765.0	68	20.0	62	SW	4	1.8			2			0	0			Fair	
§ Wachusett, S. 45° 09′, W. 64° 21′	29.59	751.6	52	11.1	100	WNW			2		2		N	Pass'g show'rs	Pass'g show'rs	Long	W	Clear	
Wyoming, Villafranca, France	30.24	768.1	67	19.4	79	ESE			0–1		2		SE			Smooth	SE	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 40° 68′, W. 67° 07′	30.18	766.6	51	10.6		SW			3		8		WSW			Smooth		Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng *†	29.90	759.4	63	17.2	94	W			4		2		W	0	0			Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 51° 04′, W. 13° 35′ *†	29.92	760.0	56	13.3	87	W			4		8		W	1 h'r	1 h'r	Heavy	W	Cloudy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
S. S. Belgic, L. Meyer, Hong-Kong, China †	29.91	759.7	78	25.6	100	E			1		8		E					Cloudy	D. A. Joyce.
S. S. Gaelic, W. H. Kidley, N. 38° 43′, W. 130° 27′ †	30.48	774.2	56	13.3	81	NNW			4	ck		NW		0	0	Smooth		Fine	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, N. 35° 16′, W. 120° 53′ †	30.01	762.2	51	10.6		NW			3		0					Heavy	NW	Clear	
S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
S. S. State of California, G. Debney, Portland, Oregon †	30.31	769.9	44	6.7		Calm			0		2							Clear	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Champerico, Guatemala†	29.79	756.7	77	25.0	91	ESE			3		10		SE			Mod'ate	SSE	Cloudy	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury, N. 37° 30', W. 122° 41'....†	30.04	763.0	51	10.6	79	WNW			6		0					Heavy	WNW	Clear	
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, S. 5° 30', W. 166° 02'.....†	29.85	758.2	80	26.7	96	ESE			2		0			0	0	Light	SE	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 25° 06', W. 112° 46'....†	29.92	760.0	64	17.8	83	WNW			2		0			0	0	Mod'ate	W	Hazy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.90	759.4	66	18.9	84	NW			4		2		SW					Fair	
§ S. S. City of Sidney, H. C. Dearborn S. 34° 12', E. 170° 40'....*†	29.88	758.9	68	20.0		NW			6		2		NW	0	0	Mod'ate	NW	Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 44° 19', W. 165° 01'...†	29.94	760.5	52	11.7	67	ENE			2		8		SW	Blank	Blank	Mod'ate	SW	Cloudy	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 22° 59', W. 108° 28'...†	29.83	757.7	73	22.8	100	WSW			2		5		SW	0	0	Mod'ate	SW	Misty	
§ S. S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S. S. Granada, J. M. Cavarty N. 7° 16', W. 81° 00'.....†	29.98	760.2	78	25.6	86	Calm			0		2cs		SE	Mod'ate	Mod'ate	Light	S	Clear.	
§ S. S. Idaho, N. 48° 20', W. 124° 55'...†	30.31	769.9	59	15.0		WNW			1		5		WNW	0	0	Heavy	WNW	Fair	
§ S. S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 15', W. 64° 28'.....†	30.22	767.6	70	21.1		SW			2		2		W	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 49° 49', W. 30° 38'.....†	30.07	763.8	45	7.2		WNW			6		10		NW			Heavy	NW	Hailing	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving N. 42° 10', W. 46° 49'....*†	30.32	770.1	60	15.6		NW			3				E	0	0	Light	E	Clear.	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.12	765.0	68	20.0		SSW			1		10			0.03	0.8			Gloomy	Mehaffey.
Schr. Annie Fuller, J. Jorgensen, Satilla river, Georgia	30.15	765.8	77	25.0	73	Calm	0	0			0			0	0			Clear.	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. I†	30.01	762.2	84	28.9		E			5		2		E	0	0	Smooth		Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 3° 52', E. 13° 30'.....*†	30.24	768.1	68	20.0		Calm			0		0			0	0	Smooth	W	Fair	B. F. Woodbury.
Brigantine George, W. H. Champlin,																			
Hippolyta																			
Iron Cross, W. Randall																			
Barque Syringa, E. Lewis																			W. Randall. E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., [BVT. ASSG'D,] CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 25, 1880.

7:35 A. M. WASHINGTON Mean Time.

3:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.20	767.1				W			1		0			0	0	Clear	Dr. Ollive.
Nemours			30.16	766.0	73.4	23.0	79	E			1		3			0	0	Pretty fair	Metge.
Algiers			30.17	766.2	71.2	21.8	59	NE			1		0			0	0	Clear	Nicolas.
La Calle			30.24	768.2	69.3	20.7	81	E			4		4			0	0	Cloudy	Fonfrède.
Tunis			30.29	769.3															Jacques.
Sfax			30.39	772.6															Gau.
Saida			30.20	767.0															Bernard.
Tebessa			30.29	769.3	79.2	26.2	25	Calm			0		0			0	0	Clear	Watrin.
Geriville					83.8	28.8	60	SE			4		0			0	0	Clear	Brugniaux.
Laghouat			30.27	768.8	84.6	29.2	14	S			3		2			0	0	Fair	Suart.
Biskra			30.28	769.1	87.4	30.8	36	E			3		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Agram	29.72	754.8	30.24	768.2	77.4	25.2	55	S			2		0			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.44	747.7	30.19	766.7	71.6	22.0	46	WSW	11.0	4.9			5			0	0		Dr. Wierzbicki.
Eperies	29.29	743.9	30.14	765.5	72.0	22.2	50	S			3		7s;cs		E	0.007	0.18		Julius Mikolik.
Gratz	29.02	737.0	30.23	767.9	70.0	21.1	64	SSE			3		2			0	0		Andreas Rospini.
Hermannstadt	28.84	732.6	30.24	768.1	72.1	22.3	44	NW			2		1			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.87	733.2	30.15	765.9	75.4	24.1	64	Calm			0		0			0	0		The Staff.
Lemberg	29.15	740.3	30.11	764.7	67.3	19.6	55	NW			4		6			0	0		Dr. T. Stanecki.
Pola	30.22	767.5	30.33	770.3	71.1	21.7	66	SSW			2		0			0	0		I.R.Hydrographic Office.
Szathmar	29.79	756.7	30.24	768.2	74.8	23.8	51	SW			3		7			0	0		Pet. Pancsics, S. J.
Szegedin	29.95	760.6	30.21	767.4	75.0	23.9	45	SW			1		0			0	0		Karl Stancel.
Trieste	30.24	768.0	30.34	770.6	69.4	20.8	74	Calm			0		0			0	0	Clear	P. Busin.
Vienna	29.52	749.8	30.25	768.4	77.0	25.0	44	E			1		2			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.92	760.0	30.11	764.9	72.9	22.7	36	WSW			3	4	0	WSW	WSW	0	0		Royal Observatory
Furnes	30.13	765.3	30.15	765.9	76.3	24.6	44	WNW			2		1			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 24, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.68	753.9	29.78	756.4	57.7	14.3		WSW	24	10.7			5			0	0	Blue sky	W. Boswell.
Ardrossan	29.86	758.4	29.88	758.9	50	10.0		SSW			4		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.68	753.9	29.92	760.0	52.1	11.2		W	3	1.3			10					Showery	S. Call.
Bidston (Liverpool Obs)			30.00	762.0	55	12.8		WSW	16	7.2			10					Overcast	John Hartnup.
Bolton (Sharples)	29.45	748.0	29.96	761.0	53.7	12.1		SW	14	6.3			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.58	751.3	29.98	761.5	55.8	13.2	62	S			1		9			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.98	761.5	82	27.8		NE			1		8					Overcast	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.94	760.5	30.03	762.7	68.0	20.0		SSW			1		7ks					D. clouds	H. Todd.
Cardington			29.99	761.7	72.0	22.2		SW			2		7					Blue sky	John McLaren.
Chatham (School M. E.)	29.95	760.7	30.08	764.0	68.9	20.5		SW			2		2s					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.88	758.9	29.92	760.0	59	15.0		SW			4		8					D. clouds	J. Mac Gowan.
Dover	30.08	764.0	30.12	765.0	57	13.9		WSW			5		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.85	758.2	30.08	764.0	59.2	15.1		S			3		1					D. clouds	The Staff.
Fort Napier, Natal	27.86	707.6	30.07	763.8	75.4	24.1		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.73	755.1	29.96	761.0	84	28.9		S			1		5					Drizzling	
Galway (Queen's College)			29.80	756.9	57	13.9		SW			3		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.08	764.0	30.14	765.5	70.2	21.2		NE			5		6					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.66	753.4	29.86	758.4	52.9	11.6		SW			6		10			Blank	Blank	Gloomy	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.04	763.0	64	17.8		SW			2		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.89	759.2	30.06	763.5	70.4	21.3		SW			4		1					Blue sky	The Staff, for G. B. Airy,
Guernsey	29.88	758.9	30.10	764.5	62.5	16.9		SE			2		0					Blue sky	Dr. S. E Hoskins, F.R.S.
Helston	30.23	767.8	30.36	771.1	63	17.2		S			4		0			0	0	Very fine	M. P. Moyle.
Holyhead	29.95	760.7	29.99	761.7	56	13.3		SSW			4		3					D. clouds	John Tilston.
Jersey	29.85	758.2	30.14	765.5	64.8	18.2		Calm			0		0					Blue sky	J. Fisher.
Kew (Observatory)	30.62	762.5	30.06	763.5	65.8	18.8		SSW	16	7.2			1					Blue sky	The Met'g'l Office.
Leicester (Museum)	29.78	756.4	30.04	763.0	54.0	12.2		W			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.21	767.3	30.29	769.4	70.8	21.6		N			2		2					Blue sky	A. King.
Nairn	29.63	752.6	29.72	754.9	56	13.3		WSW			4		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.08	764.0	78.2	25.7		SE			3		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.85	758.2	30.04	763.0	59.8	15.4		S			2		10k		S	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.50	749.3	30.03	762.7	54.7	12.6		SW			1-2		10					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.81	757.2	30.07	763.8	64	17.8		SW			1		10					Overcast	The Staff, for E. J. Stone, Esq
Plymouth	30.01	762.2	30.08	764.0	62.5	16.9		SW			2		2					D. clouds	John Merrifield.
*Roche's Point	29.88	758.9	29.99	761.7	57	13.9		SSW			4		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.86	758.4	30.12	765.0	53	11.7		S			2		10					Misty	John C. Walker.
Sandwick Manse, Orkneys			29.66	753.4	50.4	10.2		W	32	14.3			5					Showery	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	30.13	765.3	30.20	767.1	74.4	23.6		NNE			2		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.75	755.6	30.03	762.7	55.3	12.9		SW			1		10			Blank	Blank	Overcast	W. F. Cooper.
Silloth Rectory	29.91	759.7	29.94	760.5	57.3	14.1	64	SW			3		4			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.00	762.0	57.2	14.0		W	18	8.0			10					D. clouds	Rev. S. J. Perry.
Strathfield Turgiss	29.84	757.9	30.06	763.5	67.2	19.6		SW			1		1					Blue sky	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.06	763.5	30.07	763.8	67	19.4		SE			6		8					D. clouds	W. Newcombe.
Valencia Observatory)	29.87	758.7	29.89	759.2	55.6	13.1		SE	29	13.0			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.02	762.5	30.06	763.5	74.0	23.3	40	NNW	6.7	3.0		0	1			0.09	2.3	Drizzling	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.74	755.4	57.0	13.9	70	NE			2		10kn			0.04	1.0	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.87	758.7	57.1	13.9		W			6		6k			0.03	0.8	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.90	759.4	30.10	764.4	74.3	23.5	62	E	6.5	2.9		1	1			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.59	751.6	29.68	753.9	51.2	10.7	90	WNW	6	2.7			10			0.17	4.3	Raining	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.66	753.4	50	10.0		SW			6	5	3	SW		0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.58	751.3				W			6	5	5	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather.	Observer
H. M. S. Alert,				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 39° 45′, W. 62° 20′			D. clouds	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma,				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, Cape Town, C. Good Hope			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra,				Capt. W. P. Hughes.
S. S. Strathleven,				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.18	665.0	29.90	759.4	69.4	20.8	95	SE			2	8d	1c	* NE		0.16	4.	Cloudy.	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	29.96	760.9	30.00	762.1	58.6	14.8	38	NW			4		5						
Fanö	30.01	762.2	30.03	762.7	55.8	13.2	71	W			4		7						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.45	748.0	29.49	749.1	39.7	4.3	82	NE			8		8						
Thorshavn (Faröe)	29.41	746.9	29.44	747.8	48.0	8.9	65	SW			3		7						
Vestervig	29.86	758.4	29.95	760.8	52.9	11.6	75	SW			6		3						

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

FRENCH SERIES.

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

Alençon, Normal School	29.61	752.1	30.16	766.1	77.0	25	47	SW			1		2k			0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	30.02	762.5	30.13	765.2	79.9	26.6	34	W			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.87	758.8	30.12	765.1	74.1	23.4	29	NW			2		2s			0	0		Klein, Commandant.
Avignon, Normal School	30.26	768.6	30.34	770.6	75.9	24.4	53	SW			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.60	751.8	30.13	765.2	79.0	26.1	28	SW			1		2k		SW	0	0	Slightly cl'dy	C. Saillard, Director.
Beauvais, Normal School	29.88	758.9	30.13	765.4	72.1	22.3	35	SW			1		0			0	0	Clear	Frère Eugene Marie.
Besançon, Normal School	29.33	745.0	30.18	766.5	76.6	24.8	40	S			1		0			0	0	Clear	A. Carré, Director.
Bordeaux	29.87	758.7	30.07	763.7	85.8	29.9	32	SE			2		2k		Calm	0	0	Almost clear	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.36	745.7	30.30	769.6	78.1	25.6	32	S			4		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.63	752.6	30.16	766.0	76.3	24.6	56	SW			1		0			0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	29.84	757.8	30.08	763.9	74.5	23.6	62	Calm			0		0			0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.97	761.2	30.04	763.1	72.5	22.5	66	SE			1		0			0	0	Clear	M. Bietrix, Director.
Carcassonne, N. School	29.87	758.6	30.28	769.0	68.0	20	64	E			2		5		E	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.85	758.3	30.17	766.2	80.6	27.0	37	SSW			1		2			0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.56	750.8	30.12	765.0	79.3	26.3	60	S			1		0			0	0	Clear	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.80	731.5	30.09	764.2	81.7	27.6	32	E			1		0			0	0		Alluard, Director.
Commercy, Normal School	29.31	744.5	30.14	765.5	76.6	24.8	37	W			4		2ck		W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	29.26	743.3	30.41	772.3	69.8	21	67	NW			1		5		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.44	747.8	30.18	766.6	74.8	23.8	50	NW			2		0			0	0	Clear	Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.89	759.3	30.10	764.5	81.7	27.6	33	SE			1		5		W	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.83	757.7	30.13	765.3	75.7	24.3	45	SSW			1		2		WSW	0	0	Slightly cld'y	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.33	744.9	30.22	767.6	78.3	25.7	39	SSW			2		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	30.00	762.0	30.11	764.8	69.1	20.6	64	SSE			3		0			0	0	Clear	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.59	751.6	30.19	766.7	79.3	26.3	32	S			3		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	30.08	764.0	30.35	770.8	68.2	20.1	64	SSW			2		1		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.10	739.2	30.11	764.7	75.6	24.2	45	SW			1		ck		SW	0	0		Barbier, Director.
Mont-Louis	25.10	637.4	30.33	770.4	61.2	16.2	62	S	15 0	6.7			0			0	0		M. Cave, for Dr. Fines.
Nice	30.31	769.8	30.34	770.7	69.8	21.0	73	E			1			S	E	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	30.13	765.4	30.34	770.6	73.6	23.1	52	S			3		0			0	0	Clear	M. Boyer, Director.
Perpignan	30.17	766.3	30.28	769.0	67.3	19.6	70	SE	11.2	5.0			7		NE	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.81	579.3			68.6	14.8							0			0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	29.24	742.7	30.27	768.9	74.3	23.5	62	S			1		1s	S	S	0	0	Clear	M. Tallieu
Puy de Dome (Summit) Obs	25.41	645.4			62.8	17.1	57	SSE			1		0			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.08	764.0	30.11	764.8	83.7	28.7	43	SSW			2		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	30.02	762.5	30.11	764.7	79.3	26.3	25	S			1		0			0	0	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	30.04	763.0	30.07	763.8	78.1	25.6	33	SSE			2		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.98	761.6	30.16	765.8	78.4	25.8	32	S			1		0?	WSW	SSW	0	0		E. Renou, Director.
Tarbes, Normal School	29.07	738.4	30.14	765.5	89.6	32	54	E											T. Huguet, Director.
Toulouse, Observatory	29.52	749.9	30.26	768.4	70.9	21.6	58	SSE			6		0			0	0	Clear	B. Bailland, Dir.
Tours	29.91	759.6	30.10	764.6	80.6	27.0	32	SE			1		2		W	0	0	¼ covered	M. de Tastes.
Versailles, Observatory	29.68	753.8	30.17	766.3	77.7	25.4	31	WSW			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.38	746.2	30.05	763.3	84.2	29	64	ESE			3		0			0	0	Clear	Nicot, Director.
Sun-Series.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	81.0	27.2										0.08	2.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.87	758.8			79.9	26.6	33	S			1		2		WSW	0	0		Marié Davy, Director
Zi-Ka-Wei (near Shanghai)	29.88	758.9	29.90	759.5	65.8	18.8	88	SE	8.7	3.9			0			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.33	744.9	30.19	766.9	76.3	24.6	37	SE			4		2cs	SE		0	0		Prof. Dr. Hoh.
Berlin	29.95	760.6	30.11	764.8	71.6	22.0	45	SW			2		8			0	0		Prof. Dr. Arndt.
Breslau	29.66	753.4	30.20	767.0	69.8	21.0	35	W			4		2			0	0		Royal University Obs'y
Carlsruhe	29.73	755.1	30.14	765.6	77.4	25.2	53	SW			3		5	SW		0	0		Albert Senz.
Cassel	29.53	750.0	30.14	765.5	77.7	25.4	34	SW			4		5	W		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.85	758.1	30.21	767.4	77.0	25.0	24	SSW			2		2			0	0		Physical Society.
Friedrichshafen	28.80	731.5	30.21	767.3	66.4	19.1	64	SSW			3		0			0	0		Chief Telegrapher Wilhelm.
Hamburg	30.04	762.9	30.11	764.7	63.5	17.5	74	SW			4		9			0.157	4.0		Dr. Reinhold Kleeman.
Kiel	30.05	763.2	30.07	763.6	61.5	16.4	53	WSW			4		9			0.026	0.67		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.95	760.7	30.03	762.8	56.3	13.5	36	W			8		0			0.126	3.2		Prof. E. Luther.
Köslin			30.07	763.7	64.9	18.3		W			4		1			0	0		H. Müller.
Leipsic Observatory	29.74	755.5	30.15	765.9	73.8	23.2	32	WSW			4		4	W		0 047	1.2		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.91	759.8	30.14	765.6	71.4	21.9	44	WSW			4		2ks	WSW		0	0		Dr. Assmann.
Memel	29.88	759.0	29.93	760.2	49.8	9.9	74	W			6		0						Reinbrecht & Issermann
Munich	28.42	721.8	30.30	769.5	72.3	22.4	45	SW			1		1			0	0		Dr. C. Lang.
Neufahrwasser	30.06	763.5	30.08	763.9	63.7	17.6	23	WNW			5		2	W		0	0		A. Lothes.
Neustadt (Palatinate)	29.62	752.4	30.15	765.9	78.3	25.7	40	SW			1		5	W		0	0		Realiehrer Dicknether.
Posen	29.88	759.0	30.17	766.2	64.9	18.3	52	W			2		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.65	753.2	30.18	766.6	79.2	26.2	42	S			2		3	SSW		0	0		Imp. University Observatory.
Stuttgart	29.22	742.2	30.07	763.8	78.8	26.0	33	SW					2	W		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.72	729.4	30.30	769.7	74.3	23.5	55	WSW	1.6	0.7		3ck		SW		0	0		Reallehrer J. Hopfner.
Wustrow	30.07	763.6	30.09	764.2	58.5	14.7	68	W			4		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.81	757.1	30.19	766.8	75.9	24.4		NE			7.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.57	751.1	29.62	752.4	83.1	28.4	83	SW	32	14.3			7		W			Raining	
Deesa	29.18	739.8	29.58	751.2	102.5	39.2	23	WSW	14.6	6.5			0			0	0	Misty	
Bombay	29.69	754.0	29.72	755.0	86.4	30.2	72	WNW	16	7.2			0			0	0	Blue sky	
Poona (Yarrowda)	27.84	707.2	29.64	752.9	91.3	32.9	39	WNW	25	11.2			0			0	0	Blue sky	
Belgaum	27.20	690.8	29.68	753.9	83.9	28.8	55	SSW	9	4.0			6	E		0	0	D clouds	
Lahore	28.78	730.9	29.48	748.8	102.3	39.1	28	Calm	5.0	2.2			0			0	0	Misty	
Roorkee	28.68	728.4	29.56	750.8	86.2	30.1	36	NE	8	3.6			1			0	0	Sultry	
Agra	28.96	735.5	29.50	749.4	90.2	32.3	52	S	5.1	2.3			0			0	0		
Nagpur	28.54	724.8	29.53	749.9	102.5	39.2	23	Calm	2.3	1.0			5	W		0	0	D. clouds	
Jubbulpore	28.26	717.8	29.57	751.0	99.7	37.6	26	E	4.2	1.9			8			0	0	Overcast	
Lucknow	29.21	742.0	29.58	751.3	90.1	32.3	55	ENE	4.6	2.1			0			0.41	10.4	Blue sky	
Allahabad	29.26	743.3	29.56	750.9	94.5	34.7	42	E	7.3	3.3			0			0	0	Blue sky	
Patna	29.46	748.3	29.64	752.9	85.2	29.6	52	W	2.7	1.2			6	W	W	0.63	16.0	D. clouds	
Hazaribagh	27.63	701.8	29.64	752.9	74.8	23.8	77	SE	8.7	3.9			8			1.91	48.5	Thunder-storm	
Cuttack	29.61	752.2	29.70	754.3	82.6	28.1	72	NNE	4.2	1.9			9			0	0	Threatening	
Calcutta (Alipore)	29.61	752.2	29.63	752 7	87.2	30.7	70	SW	11.0	4.9			6	W		0	0	D. clouds	
Goalpara	29.27	743.4	29.68	753.8	78.4	25.8	84	NW	1.3	0.6			2			0	0	D. clouds	
Chittagong	29.61	752.0	29.70	754.3	81.9	27.7	85	ESE	4.7	2.1			3			0	0		
Sibsagar	29.35	745.6	29.68	754 0	84.3	29.1	78	SW	3.3	1.5			7	SSW	SSW	0.15	3.8	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.91	759.8	30.32	770.0	77.7	25.4	43	SW	2.5	1.1			6			0	0		Prof. Giovanni Clodig.
Milan	29.78	756.4	30.28	769.2	77.2	25.1	43	SSW	3.8	1.7			0			0	0		Prof. Schiaparelli.
Padua	30.20	767.1	30.31	769.8	74.1	23.4	58	SSE	2.5	1.1			5	WSW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.37	746.0	30.26	768.7	74.5	23.6	55	SE	4.9	2.2			3	NE		0	0		Prof. P. F. Denza.
Genoa	30.19	766.7	30.37	771.5	67.1	19.5	69	SW	4.3	1.9			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.41	721.5	30.28	769.1	72.5	22.5	50	NE			2		6			0	0		Prof. D. C. Bruno.
Pesaro	30.29	769.4	30.34	770.6	68.9	20.5	74	NE	11.9	5.3			1			0	0		Prof. Luigi Guidi.
Florence	30.07	763.8	30.33	770.3	74.3	23.5	42	NW			2		0			0	0		Cav. F. Meucci.
Leghorn	30.29	769.4	30.38	771.6	69.6	20.9	64	SW	3.1	1.4			2			0	0		Prof. P. Monte.
Rome	30.18	766.6	30.35	771.0	75.7	24.3	54	WSW	8.7	3.9			0			0	0		Prof. P. S. Ferrari.
Lecce	30.07	763.6	30.31	769.9	69.8	21.0	49	NNE	8.1	3.6			3			0	0		Prof. C. De Giorgi.
Cosenza	29.41	746.9	30.28	769.2	78.4	25.8	67	NW	3.1	1.4			0			0	0		Prof. D. Ot i .
Cagliari	30.13	765.2	30.32	770.0	69.3	20.7	70	S			4		1	S		0	0		Prof. A. Pacinotti.
Palermo	30.11	764.7	30.36	771.1	68.0	20.0	61	NE	6.3	2.8			9			0	0		Prof. G. Ciacciatore.
Syracuse	30.25	768.3	30.29	769.4	74.3	23.5	53	E	3.8	1.7			4	NNE		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.80	756.8	30.30	769.7	74.8	23.8	58	SW	3.8	1.7			0			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					65.2	18.4	87	NNE	3.4	1.5			0			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y					62.7	17.1	87	S	1.1	0.5			0			0	0	Clear.	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.80	756.9	30.00	762.0	62.3	16.8	91	SW	1.8	0.8		0	9cs;ks		W	0.010	0.25	Cloudy	The Staff.
Wakayama	29.78	756.4	29.85	758.2	66.3	19.1	80	SSW	2.1	0.9			0			0	0	Clear.	
	29.85	758.2	29.90	759.4															

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.93	633.3	29.89	759.1	60.8	16.0	38	Calm			0	1c	0			0	0	Clear.	Prof. L. Perez.
Guanaxuato	23.61	599.8			64.3	18.5	43	SSE	Inap.	Inap.		9s	1	S	S	Inap.	Inap.	Covered	Vicente Fernandez.
Leon	24.33	618.0	29.87	758.6	69.1	20.6	60	SW			1	3c	0	NE		Inap.	Inap.	Clear.	Prof. M. Leal.
Mazatlan	29.62	752.4	29.88	758.9	70.8	21.6	95	E			1	10ck	0	SE		0	0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	28.01	584.4	29.93	760.2	57.4	14.1	38	Calm	0	0		10ck	0			0	0	Very cloudy	The Staff
Morelia	23.94†	608.0†			71.1	21.7	40	SE			1	4c	0	S		0	0	Fair.	M. Fena, M. D.
Pabellon (Aguascalientes)	23.90	607.0	29.80	756.8	62.8	17.1	50	NW			1	0	0			0	0	Hazy.	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.38	593.9	30.13	765.4	53.6	12.0	50	Calm	0	0		1c	0	N		0	0	Clear.	Prof. P. Spina.
San Luis Potosi	24.14	613.1	29.91	759.8	71.1	21.7	54	E			1	1	0	E		0	0	Clear.	G. Barroeta, M. D.
Tlacotalpam	29.78	756.3	29.79	756.6	78.6	25.9	90	SW			1	1	1	N	S	0	0	Clear.	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.54	572.5	30.05	763.2	61.7	16.5	40	Calm			0	0	0			0	0	Very clear.	J. O. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.14	765.6	30.14	765.6	59.5	15.3		WNW			4					0	0		
Groningen	30.04	762.9	30.09	764.3	63.5	17.5		WSW								0.028	0.7		
Helder	30.09	764.2	30.09	764.2	55.2	12.9		SSW			4					0	0		
Hellevoetsluis	30.13	765.2	30.13	765.2	61.3	16.3	73	WNW			3					0	0		
Utrecht	30.08	764.1	30.13	765.3	68.2	20.1	52	WSW			3		2			0	0	Lt'ly cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

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

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Bergen	29.63	752.7	29.69	754.1	46.4	8.0	78	SSW	16.6	7.4			10			0.370	9.4	Sleeting	
Brönø	29.32	744.7	29.36	745.7	46.4	8.0	75	WSW	18	8			6			0.008	0.2		
Christiania	29.45	748.1	29.60	751.7	57.4	14.1	33	WSW	13	6			7			0	0		
Tromsö	29.18	741.1	29.23	742.5	42.8	6.0	85	SSW	4	2			10			0.098	2.5		

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

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.91	759.7	30.12	765.0	66.9	19.4	86	NNE			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.07	738.3	30.03	762.8	79.5	26.4	89	ESE	4.3	1.9			8			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	29.94	760.4	30.02	762.6	66.6	19.2	61	WSW	3.8	1.7			0			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.66	753.3	30.01	762.2	71.6	22.0	48	NE	13.7	6.1			1	SSW		0	0		The Staff.
Ponta Delgada (Azores)	30.07	763.6	30.13	765.4	66.6	19.2	68	WNW	11.9	5.3			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0–9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrute, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. Lobito, Benguela			29.91	759.8	73.6	22.8		WNW			2		4		WNW	2	W		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Com'd't.
Sado, J. A. de Brito Capello Mossamedes, Benguela			29.96	761.0	67.2	19.6		WNW			3		2		W	2	W		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.94	760.4	80.6	27.0		E			2		10		E	0		2	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

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

Archangel	29.36	745.7	29.38	746.2	58.1	14.5	75	ESE	9	4			5ks						Capt. Sseliwerstow.
Astrakhan	30.04	763.0	29.96	760.9	70.3	21.3	33	WNW	22	10			8ks			Blank	Blank		Capt. Wisganow.
Barnaul	29.48	748.8	29.97	761.2	63.9	17.7	31	NE	0	0			0						Meteorological Obs.
Dorpat	29.29	744.0	29.53	750.1	52.7	11.5	58	W	16	7		7ck							Prof. Dr. Weihrauch.
Ekaterinburg	28.68	728.4	29.60	751.7	70.3	21.3	48	N	4	2			6k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.39	746.6	29.65	753.2	67.8	19.9	41	WSW	9	4			5						Physical Cabinet.
Kertch	30.18	766.6	30.20	767.1	68.7	20.4	65	WSW	9	4			4						Lagorio.
Kieff	29.32	744.8	29.94	760.5	67.1	19.5	52	W	7	3		c;ck	7ks						Physical Cabinet.
Krotkowo*	29.25	743.0	29.71	754.5	67.3	19.6	53	NNW	0.2	0.1			10						Cand. Fatjanow.
Lugan	29.74	755.4	29.94	760.5	62.8	17.1	70	WSW	13	6			7			Blank	Blank		Meteorological Obs.
Moscow	29.05	737.9	29.60	751.8	52.9	11.6	87	SE	7.8	3.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.10	764.5	30.17	766.3	72.9	22.7	51	WSW	9	4			6k;ks						Kurdakof.
Nikolaievsk, on the Amoor	29.79	756.7	29.88	758.9	39.0	3.9	84	Calm	0	0			10n						
Nukuss																			
Orenburg																			
Pekin (China)	29.48	748.7	29.62	752.3	72.3	22.4	56	Calm	0	0			8n						Physical Observatory.
St. Petersburg	29.32	744.8	29.34	745.2	46.9	8.3	82	W	16	7			10n					Raining	Central Physical Obs.
Tashkend	28.41	721.6	29.92	760.0	73.8	23.2	76	Calm	0	0			2					Light clouds	Teich, A. M.
Tiflis	28.73	729.7	30.11	764.7	71.6	22.0	36	W	4	2			8ks						Physical Observatory.
Vladivostock																			
Warsaw	29.72	754.8	30.14	765.5	61.5	16.4	46	W	16	7		5ck							Astronomical Obs.
Wilna	29.50	749.4	29.92	759.9	57.0	13.9	43	W	20	9			4						Astronomical Obs.
Yeniseisk	29.91	759.8	30.20	767.1	53.1	11.7	47	NW	2	1			2						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.18	766.6	30.28	769.2	69.4	20.8	57	S	4.2	1.89			0			0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.03	762.8	30.09	764.2	92.5	33.6	35	SW	3.6	1.63		0	0			0	0	Clear.	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.23	691.6			82.9	28.3	35	SW	11.9	5.32			1			0	0	Almost clear	Domingo Martin y Perez.
Madrid, Royal Observatory	27.97	710.5	30.10	764.4	82.6	28.1	36	SE	9.7	4.33		1	0	W		0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	30.08	764.0	30.23	767.7	78.8	26.0	51	ENE	6.3	2.83		0	3			0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.12	739.7	29.97	761.1	86.7	30.4	40	SW	3.8	1.7		4	0			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.93	760.3	30.00	761.9	77.3	25.2	87	Calm	0	0		c;cs	0			1.405	35.7	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	29.81	757.3	29.87	758.6	86.3	30.2	78	NE	0	0			6ck		E	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.92	760.0	30.02	762.4	77.2	25.1	36	ESE	28.4	12.7		0	5		S	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.94	760.4	30.03	762.7	79.9	26.6	88	E	9.3	4.16		9ks	9k	E	E	0.059	1.50	Overcast	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.09	738.9	29.13	739.9	46.0	7.8	.....	S	.....	.....	2	.....	2	.....	.....	0.118	3.0	.....	
Umea	29.17	741.0	29.22	742.3	55.4	13.0	43	NW	.....	.....	7	.....	6	.....	.....	0	0	.....	
Hernosand	29.29	744.0	29.34	745.3	59.0	15.0	72	WNW	.....	.....	6	.....	5	.....	.....	0.094	2.4	.....	
Stockholm	29.40	746.7	29.68	751.2	55.0	12.8	43	W	.....	.....	7	.....	6	.....	.....	0.181	4.6	.....	
Wisby	29.64	752.9	29.70	754.4	48.9	9.4	66	W	.....	.....	6	.....	0	.....	.....	0.063	1.6	.....	
Sub-Series.																			
Upsala	29.42	747.3	29.51	749.5	54.5	12.5	63	WSW	18.6	8.3	.....	.....	9	W	.....	0.024	0.60	.....	Nils Ekholm.

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

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Pahlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

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

Geneva	28.81	731.8	30.17	766.4	77.2	25.1	39	WSW	.....	.....	3	.....	0	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.61	726.6	30.17	766.2	78.4	25.8	40	NE	.....	.....	1	.....	0	.....	.....	0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.3 mm.; Thermometer, +7.2 Cent. Relative Humidity, —17 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.25	768.4	71.4	21.9	51	N	13	6.0	.....	.....	1	.....	NE	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.34	770.6	70.2	21.2	.....	W	.....	.....	2	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	30.03	762.8	73.4	23.0	73	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

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

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	48.0	8.9	.....	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.04	763.0	30.10	764.5	46.5	8.1	92	NW	3	1.3	.....	.....	10s	.....	.....	0.25	6.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.00	762.0	30.04	763.0	44.0	6.7	76	NW	4	1.8	.....	.....	10n	.....	.....	0.265	6.73	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.74	755.4	29.93	760.2	71.0	21.7	71	SW	.....	.....	2	0	7s	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.91	759.7	30.07	763.8	47.0	8.3	.....	E	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	30.03	762.7	30.06	763.5	40.5	4.7	87	E	10	4.5	.....	.....	10s	.....	.....	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	30.03	762.7	30.09	764.3	54.0	12.2	81	E	1	0.4	.....	.....	10s	.....	.....	0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.12	739.6	29.97	761.2	57.7	14.3	87	N	8	3.6	.....	4cs	4ks	N	.....	0	0	Clearing	James Stewart.
Granton, Ontario	29.04	737.6	30.10	764.5	70.0	21.1	85	S	.....	.....	1	1c	0	S	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.90	759.4	30.03	762.7	55.4	13.0	90	N	8	3.6	.....	.....	10n	.....	.....	0.159	4.04	Cloudy	A. Allison.
Hamilton, Ontario	29.72	754.9	30.10	764.5	71.7	22.1	78	S	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.70	754.4	30.02	762.5	65.7	18.7	84	S	2	0.9	.....	7k	2ks	W	.....	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.08	764.0	30.12	765.0	37.0	2.8	97	SE	8	3.6	.....	.....	10n	.....	.....	0.07	1.8	Overcast	C. H. Rigby.
Montreal, Quebec	29.79	756.7	29.98	761.5	66.7	19.3	83	W	4	1.8	.....	7k;ks	0	N	.....	0.01	0.3	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.92	760.0	29.95	760.7	55.0	12.8	80	NW	.....	.....	2	.....	10n	.....	.....	0.06	1.5	Cloudy	J. R. Nason.
Norwood, Ontario	29.35	745.5	30.02	762.5	74.9	23.8	64	W	4	1.8	.....	0	0	.....	.....	0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.38	746.2	30.06	763.5	66.0	18.9	79	W	2	0.9	.....	0	0	.....	.....	0.06	1.5	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.33	745.0	30.06	763.5	67.7	19.8	55	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.46	748.3	30.14	765.5	64.1	17.8	88	Calm	0	0	.....	2c	0	S	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.48	748.8	30.10	764.5	70.0	21.1	75	E	4	1.8	.....	2ck	Haze	W	.....	0	0	Clear	M. Payne.
Quebec, Quebec	29.70	754.4	30.03	762.7	48.0	8.9	92	S	.....	.....	0	.....	Fog	.....	.....	0	0	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.56	750.8	30.02	762.5	57.0	13.9	94	W	2	0.9	.....	6ck	Fog	.....	.....	Inap.	Inap.	Fair	W. H. McIntyre.
St. John, N. B.	29.90	759.4	30.06	763.5	55.0	12.8	80	NE	6	2.7	.....	.....	9ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Sangeen, Ontario	29.36	746.7	30.04	763.0	75.1	23.9	73	S	4	1.8	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stratford, Ontario	28.84	732.5	30.07	763.8	68.6	20.3	80	W	5	2.2	.....	1cs	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	30.06	763.5	30.10	764.5	38.4	3.6	96	NE	5	2.2	.....	.....	10n	.....	.....	0.07	1.8	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.73	755.1	30.10	764.5	67.6	19.8	79	SW	5	2.2	.....	5ck	0	W	.....	0	0	Fair	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.04	737.6	30.06	763.5	73.5	23.1	74	SW	7	3.1	.....	0	2ks	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.96	761.0	30.03	762.7	58.6	14.8	91	NE	5	2.2	.....	0	3s	.....	.....	0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.99	761.7	30.25	768.3	40	4.4	82	E	0	0	.....	5k	5s	.....	.....	0.15	3.8	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	30.06	763.5	43.9	6.6	.....	NE	.....	.....	2	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

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

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.89	759.2	29.97	761.2	78	25.6	61	SW	3	1.3		0	0			0	0	Clear.	
Alpena, Michigan	29.38	746.2	30.01	762.2	58	14.4	82	S	4	1.8		0	0			0.48	12.2	Clear.	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.02	737.1	30.14	765.5	69	20.6	84	SE	9	4.0		10k	0	SE		Inap.	Inap.	Cloudy	
Atlantic City, New Jersey	30.11	764.8	30.13	765.3	70	21.1	90	SW	8	3.6		Haze	Haze	Calm	Calm	0	0	Hazy	
Augusta, Georgia	30.06	763.5	30.26	768.6	72	22.2	85	Calm	0	0		1cs	Haze	E	Calm	0	0	Clear.	
Baltimore, Maryland	30.09	764.3	30.14	765.5	73	22.8	85	S	2	0.9		2ck	Fog	W	Calm	0	0	Fair	
Barnegat, New Jersey	30.06	763.5	30.08	764.0	75	23.9	86	SW	8	3.6		0	Haze		Calm	0	0	Clear.	
Bismarck, Dakota	28.09	713.5	29.94	760.5	51	10.6	93	NW	10	4.5			10s		Calm	0.01	0.3	Cloudy	
Boerne, Texas	28.34	719.8	29.60	751.8	71	21.7	95	S	6	2.7			10s		S	0	0	Cloudy	
Boise City, Idaho	27.32	693.9	30.28	769.1	39	3.9	73	N	4	1.8		0	2s		Calm	Inap.	Inap.	Fair	
Boston, Massachusetts	29.92	760.0	30.07	763.8	66	18.9	64	E	10	4.5		Haze	5s	Calm	NW	0	0	Fair	
Brackettville, Texas	28.63	727.2	29.64	752.8	69	20.6	85	E	5	2.2		0	0			0	0	Clear	
Breckenridge, Minnesota	28.72	729.5	29.68	753.9	56	13.3	87	E	4	1.8			10s		E	1.26	32.0	Cloudy	
Brownsville, Texas	29.74	755.4	29.78	756.4	82	27.8	75	SE	8	3.6		2k	0	SE		0	0	Clear	
Buffalo, New York	29.42	747.3	30.09	764.3	70	21.1	61	SW	4	1.8		5ck	Haze	W	Calm	0	0	Fair	
Burkes, Arizona					58	14.4	27	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.75	755.6	30.03	762.7	72	22.2	71	S	5	2.2		8ck	0	W		Inap.	Inap.	Fair	
Cairo, Illinois	29.68	753.9	30.06	763.5	77	25.0	77	S	6	2.7		2ck	1ks	S	S	0.31	7.9	Fair	
Campo, California	27.25	692.1	29.82	757.4	58	3.3	81	W	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.22	767.6	30.23	767.8	74	23.3	76	SW	9	4.0		2k	0	Calm		0.02	0.5	Clear	
Cape Henry, Virginia	30.15	765.8	30.17	766.3	72	22.2	80	SW	16	7.2		0	Haze		Calm	0	0	Clear.	
Cape Lookout, N. Carolina	30.23	767.8	30.24	768.1	76	24.4	73	SW	5	2.2		2k	0	Calm		0	0	Clear	
Cape May, New Jersey	30.09	764.3	30.12	765.0	69	20.6	85	S	10	4.5		0	0			0	0	Clear.	
Castroville, Texas	29.01	736.8	29.68	753.9	75	23.9	77	E	1	0.4		2c	2s	Calm	S	0.05	1.3	Fair	
Cedar Keys, Florida	30.10	764.5	30.12	765.0	75	23.9	81	E	18	8.0		0	0			Inap.	Inap.	Clear	
Charleston, South Carolina	30.16	766.1	30.21	767.3	77	25.0	65	SE	7	3.1		0	0			0	0	Clear.	
Charlotte, North Carolina	29.37	746.0	30.16	766.1	75	23.9	72	SW	6	2.7		2k	Haze	SW	Calm	0	0	Fair	
Chattanooga, Tennessee	29.38	746.2	30.16	766.1	70	21.1	80	Calm	0	0		2k	0	SE		0	0	Fair	
Cheyenne, Wyoming	23.89	606.8	29.83	757.7	36	2.2	45	N	8	3.6			10s		SW	0	0	Cloudy	
Chicago, Illinois	29.31	744.5	29.96	761.0	74	23.3	68	S	9	4.0		2c;cs	0	SW;Calm		0	0	Clear.	
Chincoteague, Virginia	30.15	765.8	30.16	766.1	69	20.6	96	SW	12	5.4		0	0			0	0	Clear.	
Cincinnati, Ohio	29.51	749.5	30.14	765.5	73	22.8	72	S	4	1.8		2c	0	Calm		0	0	Clear	
Cleveland, Ohio	29.42	747.3	30.11	764.8	73	22.8	63	SE	3	1.3		5c	0	Calm		0	0	Fair	
Coleman City, Texas	27.96	710.2	29.52	749.8	75	23.9	77	SE	5	2.2		0	0			0	0	Clear.	
Columbus, Ohio	29.30	744.2	30.10	764.5	72	22.2	71	S	3	1.3		5c	Sm'e	S	Calm	0	0	Fair	
Concho, Texas	27.84	707.1	29.41	747.0	74	23.3	55	S	7	3.1		2c	0	W		0	0	Fair	
Corsicana, Texas	29.34	745.2	29.79	756.7	75	23.9	90	SE	12	5.4		0	8ks		S	0	0	Cloudy	
Davenport, Iowa	29.29	744.0	29.89	759.2	76	24.4	77	S	14	6.3		0	0			0	0	Clear	
Dayton, Washington T'y					37	2.8	90	SW			1	2k	0	NE		0	0	Clear	
Deadwood, Dakota	25.23	640.8			42	5.6	83	Calm	0	0			10s		W	0.36	9.1	Cloudy	
Decatur, Texas	28.60	726.4	29.70	754.4	74	23.3	81	SE	16	7.2		2ck	8ks	Calm	SE	0	0	Cloudy	
Delaware Breakwater, Del.	30.11	764.8	30.14	765.5	73	22.8	72	SW	14	6.3		0	0			0	0	Clear	
Denison, Texas	28.99	736.3	29.74	755.4	74	23.3	81	SE	9	4.0			10ks		S	0	0	Cloudy	
Denver, Colorado	24.66	626.4	29.88	758.9	42	5.6	66	NW	5	2.2			10s		Calm	0	0	Cloudy	
Des Moines, Iowa	28.93	734.8	29.76	755.9	74	23.3	72	S	5	2.2		5c	0	W		0	0	Fair	
Detroit, Michigan	29.43	747.5	30.07	763.8	69	20.6	80	S	1	0.4		8cs	Sm'e	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.02	686.3	29.14	740.1	70	21.1	75	S	14	6.3		10ck	0	SW		0	0	Threatening	
Dubuque, Iowa	29.23	742.4	29.88	758.9	75	23.9	72	S	7	3.1		8k	Haze	SE	Calm	0	0	Fair	
Duluth, Minnesota	29.20	741.7	29.87	758.7	53	11.7	86	NE	10	4.5			10s		S	0.88	22.4	Cloudy	
Eagle Pass, Texas	28.95	735.3	29.65	753.1	68	20.0	84	Calm	0	0		0	0			0.38	9.7	Clear	
Eastport, Maine	29.99	761.7	30.06	763.5	56	13.3	81	NE	4	1.8		0	2ks		N	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.42	747.3	30.10	764.5	74	23.3	69	S	2	0.9		2c	0	SW		0	0	Fair	
Escanaba, Michigan	29.30	744.2	29.94	760.5	58	14.4	82	Calm	0	0		5c	0	Calm		0	0	Fair	
Florence, Arizona	28.24	717.3	29.84	757.9	70	21.1	48	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.84	630.9	30.29	769.4	44	6.7	52	E	5	2.2		0	0			0	0	Clear.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.89	708.4	29.70	754.4	50	10.0	93	NE	6	2.7			10n		E	0.16	4.1	Light rain	
Fort Custer, Montana	26.70	678.2			53	11.7	54	N	3	1.3			10n		Calm	1.44	36.6	Light rain	
Fort Davis, Texas	25.06	636.5	30.02	762.5	68	20.0	34	W	1	0.4		0	0			0	0	Clear	
Fort Elliot, Texas	26.64	676.6	28.73	729.7	68	20.0	84	SE	20	8.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.26	743.2	29.76	755.9	72	22.2	76	SE	12	5.4			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.04	636.0	29.84	757.9	60	15.6	24	N	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.43	722.1	29.62	752.3	75	23.9	76	SE	4	1.8			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.14	689.3			48	8.9	100	NE	12	5.4			10n		NE	1.27	32.3	Light rain	
Fort McKavett, Texas	27.50	698.5	29.32	744.7	70	21.1	61	SE	10	4.5		1ck	0	Calm		0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.47	723.1	29.50	749.3	74	23.3	81	S	28	12.5		5ck	0	Calm		0	0	Fair	
Fort Stevenson, Dakota	28.10	713.7			52	11.1	79	N	5	2.2			10s		Calm	0.06	1.5	Cloudy	
Fort Verde, Arizona					45	7.2	39	NW			1	0	0			0	0	Clear.	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.81	757.2	29.95	758.2	80	26.7	82	SE	12	5.4		8k;ck	0	SE;Calm		0	0	Fair	
Grand Haven, Michigan	29.37	746.0	29.99	761.7	76	24.4	64	S	16	7.2		2k	0	SW		0	0	Clear	
Helena, Montana					40	4.4	65	SW	3	1.3		10cs	0	Calm		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.30	744.2	30.04	763.0	77	25.0	69	S	4	1.8		5c	0	W		0	0	Fair	
Indianola, Texas	29.77	756.1	29.80	756.9	81	27.2	83	SE	18	8.0		0	5ks		S	0	0	Fair	
Jacksboro, Texas	28.67	728.2	29.75	755.6	70	21.1	74	S	16	7.2		0	0			0	0	Clear.	
Jacksonville, Florida	30.14	765.5	30.16	766.1	79	26.1	66	E	1	0.4		0	0			0	0	Clear	
Keokuk, Iowa	29.26	743.2	29.84	757.9	75	23.9	77	S	11	4.9		3c;cs	0	Calm		0	0	Fair	
Key West, Florida	30.00	762.0	30.03	762.7	78	25.6	82	SE	12	5.4		2k	5s	SE	SE	0.10	2.5	Cloudy	
Kittyhawk, North Carolina	30.21	767.3	30.23	767.8	73	22.8	81	SW	14	6.3		2k	0	SW		0	0	Clear	
Knoxville, Tennessee	29.21	741.9	30.20	767.1	65.5	18.6	98	Calm	0	0			Fog		Calm	0.90	22.9	Dense fog	
La Crosse, Wisconsin	29.13	739.9	29.83	757.7	71	21.7	75	S	3	1.3		2k	0	S		0.01	0.3	Fair	
La Mesilla, New Mexico	25.92	658.4	30.07	763.8	67	19.4	42	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.30	744.2	29.62	752.3	82	27.8	71	S	8	3.6		0	0			0	0	Clear	
Leavenworth, Kansas	28.93	734.8	29.72	754.9	71	21.7	66	S	12	5.4		5cs	5s	SW	S	0	0	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.63	752.6	29.93	760.2	71	21.7	95	SE	5	2.2			10ks		SW	0.42	10.7	Cloudy	
Los Angeles, California	29.50	749.3	29.84	757.9	59	15.0	88	E	2	0.9		0	4s		E	0	0	Fair	
Louisville, Kentucky	29.56	750.8	30.10	764.5	75	23.9	64	ES	7	3.1		8c	0		Calm	0	0	Fair	
Lynchburg, Virginia	29.50	749.3	30.16	766.1	75	23.9	64	SW	3	1.3		0	0			0	0	Clear	
Madison, Wisconsin	28.94	735.1	29.88	758.9	70	21.1	80	S	8	3.6		2ck	0	W		0	0	Fair	
Marquette, Michigan	29.25	742.9	29.93	760.2	60	15.6	77	NW	3	1.3			10s		NW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.13	714.5	29.80	756.9	72	22.2	80	SE	8	3.6		0	5ks		SE	0	0	Fair	
Memphis, Tennessee	29.66	753.4	29.98	761.5	75	23.9	77	SE	6	2.7		0	5s		SE	0.04	1.0	Fair	
Milwaukee, Wisconsin	29.26	743.2	29.96	761.0	64	17.8	73	SE	7	3.1		5k	0	S		0	0	Fair	
Mobile, Alabama	30.00	762.0	30.04	763.0	77	25.0	82	SE	9	4.0		8c	2s	SE	SE	0	0	Cloudy	
Montgomery, Alabama	29.89	759.2	30.12	765.0	75	23.9	81	SE	11	4.9		5c	0	S		0	0	Fair	
Morgantown, West Virginia	29.19	741.4	30.14	765.5	76	24.4	73	Calm	0	0		2c	0	W		0	0	Fair	
Mt. Washington, N. H.	23.98	609.1	30.34	770.6	48	8.9	93	NW	24	10.7		10k	Sm'e	NW	NW	0	0	Cloudy	
Nashville, Tennessee	29.58	751.3	30.10	764.5	76	24.4	64	SE	9	4.0		5cs	Haze	SW	Calm	0	0	Fair	
New Haven, Connecticut	29.94	760.5	30.05	763.3	76	24.4	77	SW	2	0.9			10ks		W	0	0	Cloudy	
New London, Connecticut	30.01	762.2	30.05	763.3	70	21.1	85	Calm	0	0		5ck	Haze	NW	Calm	0	0	Dense haze	
New Orleans, Louisiana	29.91	759.7	29.97	761.2	76	24.4	86	SE	12	5.4		10c;cs	Sm'e	W	Calm	0.03	0.8	Cloudy	
Newport, Rhode Island	30.01	762.2	30.06	763.5	67	19.4	89	SW	4	1.8		5ck	Haze	SW		0	0	Fair	
New River, North Carolina					79	26.1	61	SW			1	0	0					Clear	
New York, New York	29.91	759.7	30.08	764.0	71	21.7	90	W	2	0.9		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	30.13	765.3	30.19	766.8	78	25.6	65	SW	11	4.9		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	26.84	681.7	29.33	745.0	53	11.7	73	NW	20	8.9			10s		NW	0.39	9.9	Cloudy	
Olympia, Washington Ter.	30.41	772.4	30.45	773.4	35.5	1.9	90	W	2	0.9		0	0			0	0	Clear	
Omaha, Nebraska	28.67	725.7	29.59	751.6	74	23.3	59	SE	19	8.5		5k	1s	SW	Calm	0	0	Fair	
Oswego, New York	29.79	756.7	30.10	764.5	72	22.2	67	SW	3	1.3		2ck	2ks	NW	NW	0	0	Fair	
Pembina, Dakota	28.96	735.6	29.76	755.9	55	12.8	81	E	11	4.9			10s		S	0.02	0.5	Cloudy	
Pensacola, Florida	30.03	762.7	30.06	763.5	76	24.4	86	SE	16	7.2		9c;k	0	Calm;SE		Inap.	Inap.	Fair	
Philadelphia, Pennsylvania	30.06	763.5	30.11	764.8	72	22.2	90	SW	8	3.6		0	Fog		Calm	0	0	Clear	
Phœnix, Arizona	28.58	725.9	30.33	770.4	64	17.8	43	W	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.51	444.7	29.72	754.9	16	— 8.9	49	SW	25	11.2		2ck	0	SW		0.02	0.5	Clear	
Pilot Point, Texas	29.00	736.6	29.81	757.2	74	23.3	86	S	13	5.8			10ks		S	0	0	Cloudy	
Pioche, Nevada	23.99	609.3	29.76	755.9	46	9.4	12	N	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.36	745.7	30.14	765.5	69	20.6	75	NW	5	2.2		0	Fog		Calm	0	0	Clearing	
Port Huron, Michigan	29.43	747.5	30.07	763.8	70	21.1	75	S	1	0.4		10c	Haze	W		0	0	Cloudy	
Portland, Maine	30.04	763.0	30.08	764.0	67	19.4	55	E	4	1.8		0	0			0	0	Clear	
Portland, Oregon	30.38	771.6	30.46	773.7	39	3.9	91	E	4	1.8		0	0			0.03	0.8	Clear	
Portsmouth, North Carolina					74	23.3	76	S	8	3.6		2k	0	Calm		0.12	3.0	Clear	
Prescott, Arizona	24.63	625.6	29.99	761.7	39	3.9	31	N	1	0.4		0	1s		S	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	77	25.0	73	E	16	7.2		2ck	0	W		0.33	8.4	Fair	
Red Bluff, California	29.78	756.4	30.14	765.5	57.5	14.2	42	N	13	5.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.58	751.3	29.78	756.4	78	25.6	82	SE	10	4.5		0	5s		SE	0	0	Fair	
Rochester, New York	29.48	748.8	30.07	763.8	70	21.1	66	W	8	3.6		1ck	Haze	W	Calm	0	0	Clear	
Roseburg, Oregon	29.85	758.2	30.45	773.4	37	2.8	90	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.92	760.0	30.00	762.0	60	15.6	77	NW	18	8.0		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.98	761.5	73	22.8	81	SE	12	5.4		8cs	0	S		0	0	Fair	
St. Paul, Minnesota	28.89	733.8	29.67	753.6	70	21.1	80	S	18	8.0		2k	5ks	SW	S	0.01	0.3	Fair	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	39	3.9	64	Calm	0	0		8k	0	W		0.01	0.3	Cloudy	
San Antonio, Texas	29.08	738.6	29.75	755.6	74	23.3	90	SE	2	0.9		5cs	0			0.24	6.1	Fair	
San Diego, California	29.78	756.4	29.88	758.4	59	15.0	88	SW	5	2.2			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.45	748.0	30.09	764.2	73	22.8	72	S	7	3.1		10c	0	W		0	0	Cloudy	
Sandy Hook, New Jersey	30.05	763.3	30.08	764.0	78	25.6	73	W	12	5.4		1c	Fog	W	Calm	0	0	Fair	
San Francisco, California	29.97	761.2	30.03	762.7	61	16.1	43	NW	3	1.3			0			0	0	Clear	
Santa Fé, New Mexico	23.08	586.2	29.62	752.3	47	8.3	15	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	79	26.1	70	E	1	0.4		2k	0	E		0	0	Fair	
Shreveport, Louisiana	29.68	753.9	29.89	759.2	72	22.2	85	SE	6	2.7		0	5s		SW	1.20	30.5	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.21	767.3	30.24	768.1	75	23.9	77	S	5	2.2		0	0			0	0	Clear	
Socorro, New Mexico	25.17	639.3	29.23	742.4	62	16.7	14	S	2	0.9		0	0			0	0	Clear	
Springfield, Illinois	29.35	745.5	29.99	761.7	73	22.8	81	S	9	4.0		2k	2ks	SW	S	0	0	Fair	
Springfield, Massachusetts	29.92	760.0	30.04	763.0	75	23.9	72	Calm	0	0		0	8ks		W	0	0	Cloudy	
Stockton, Texas	26.72	678.7	29.72	754.9	69	20.6	48	SW	9	4.0		0	0			0.12	3.0	Clear	
Thatcher's Island, Mass.	30.04	763.0	30.09	764.3	63	17.2	83	E	16	7.2		0	Haze			0	0	Clear	
Toledo, Ohio	29.39	746.5	30.04	763.0	74	23.3	72	SW	8	3.6		8cs	Haze	SW	Calm	0	0	Fair	
Tucson, Arizona	27.33	694.2	29.88	758.9	72	22.2	30	S	1	0.4		0	0			0	0	Clear	
Umatilla, Oregon	30.05	763.3	30.56	776.2	43	6.1	83	NW	1	0.4		0	0			0	0	Clear	
Uvalde, Texas	28.83	732.3	29.62	752.3	69	20.6	85	E	1	0.4		0	0			0	0	Clear	
Vicksburg, Mississippi	29.75	755.6	30.00	762.0	73	22.8	90	SE	5	2.2			10s		SE	0.02	0.5	Cloudy	
Virginia City, Montana	24.29	615.4	29.71	754.6	31	— 0.6	89	Calm	0	0			10n		Calm	0.34	8.6	Light snow.	
Visalia, California	29.51	749.5	29.88	758.9	50	10.0	65	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.04	763.0	30.15	765.8	76	24.4	77	S	3	1.3		0	0			0	0	Clear	
Wickenburg, Arizona					67	19.4	17	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.16	766.1	30.23	767.8	73	22.8	76	S	3	1.3		0	0			0	0	Clear	
Winnemucca, Nevada	25.76	654.3	30.12	765.0	34	1.1	52	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.01	762.2	30.05	763.3	67	19.4	79	SW	3	1.3		10ck	0	NW		0	0	Cloudy	
Yankton, Dakota	28.32	719.3	29.53	750.0	71	21.7	71	S	12	5.4		10k	0	SW		0	0	Cloudy	
Yuma, Arizona	29.58	751.3	29.72	754.9	70	21.1	17	NE	8	3.6		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			55.0	12.8	83	Calm	0	0			8n			0.33	8.4	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	76	24.4	90	Calm	0	0		0	0			1.50	38.1	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.96	761.0	29.97	761.2	78	25.6	83	Calm	0	0		2c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I.	29.88	758.9	29.96	761.0	78.5	25.8	82	NE	5	2.2			10	E	E	1.5	38.	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	79	26.1	91	E			3		8ks			0.040	1.02	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.34	745.2	29.89	759.2	83	28.3	80	S			1		2k			0	0		Francesco J. Cisneros.
Rivas, Nicaragua					75	24		SE				1c	1kd	NE	SE	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I.	29.98	761.5	30.00	762.0	79	26.1	82	Calm	0	0		8ck	8ks	NE	SE	0.05	1.3		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.00	762.0	30.05	763.3	34	1.1	95	NE	10	4.5		3k	1s	NE	NE	0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,523 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.86 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

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

Stations and Vessels.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Up'er From—	Clouds. Direction. Lo'er From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
§ Navy Yard, Pensacola, Fla	30.12	765.0	77	25.0	86	ESE	14	6.3			8d		SE					Fair	
§ Navy Yard, Portsmouth, N. H.	30.10	764.5	65	18.3	73	E	4	1.8			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.85	758.2	65	18.3	92	SW			1	1ck		W		Slight	Slight			Clear	
§ Adams, Punta Arenas, Costa Rica	29.87	758.7	81	27.2	87	E			0-1		5		E					Fair	
§ Alaska, Ancon, Peru *	29.91	759.7	63	17.2	83	WNW			2		10					Smooth		Misty	
§ Alert, Yokohama, Japan	29.81	757.2	72	22.2	80	S			1		8		WSW			Smooth		Fair	
Alliance, Norfolk, Va.	30.18	766.6	73	22.8	95	SW			2		8		SW	0	0			Cloudy	
§ Ashuelot, Shanghai, China	29.94	760.5	69	20.6	85	SE			2		5							Fair	
Colorado, New York, N. Y.	30.06	763.5	72	22.2	85	WSW	2	0.9			5		W	0	0			Hazy	
§ Constitution, New York, N. Y.	30.06	763.5	71	21.7	95	Calm	0	0			2		Calm					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.20	767.1	73	22.8	85	SW	10	4.5			2		SW	0	0			Fair	
Independence, § Mare I'd, Navy Yard, Cal.	30.02	762.5	62	16.7	100	NNW	3.6	1.6			1		NNW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.08	764.0	52	11.1	93	ESE			7		10		ESE			Mod'ate	E	Heavy rain	
Kearsarge, N. 22° 20′, W. 84° 50′	29.97	761.2	80	26.7	82	ESE			4		10		ESE			Mod'ate	ESE	Cloudy	
§ Lackawana, Acapulco, Mexico †	29.95	760.7	82	27.8	83	NW			1-2		8		NW					Cloudy	
§ Marion, S. 43° 31′, W. 59° 37′	29.51	749.5	54	12.2	87	NW			5		8			0	0	Mod'ate	W	Hazy	
§ Michigan, Erie, Pa.	30.05	763.3	72	22.2	80	SSW			1		0							Clear	
§ Monocacy, Shanghai, China	29.89	759.2	69	20.6	80	SE			1		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	30.19	766.8	76	24.4	86	E	5	2.2			2			0	0			Clear	
Nipsic, Villafranca, France	29.86	758.4	69	20.6	75	SE			1		2					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	29.94	760.5	64	17.8	89	Calm			0		10		S			Long	W	Misty	
§ Palos, Shanghai, China	29.92	760.0	69	20.6	85	SE			3		0							Clear	
§ Passaic, Washington, D. C.	30.13	765.3	74	23.3	81	W			1		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.98	761.5	59	15.0	59	N			2		0					Smooth		D. clouds	
§ Portsmouth, N. 32° 34′, W. 69° 52′	30.29	769.4	72	22.2	62	NE			1		2			0	0	Long	SE	Clear	
§ Powhatan, N. 37° 34′, W. 76° 13′	30.15	765.8	72	22.2	90	SW			2		0							Hazy	
§ Quinnebaug, N. 45° 52′, W. 14° 07′	29.98	761.5	61	16.1	88	S			2		Fog		S			Long	WNW	Foggy	
§ Richmond, Shanghai, China	29.92	760.0	70	21.1	85	SSE			4		0							Clear	
§ Rio Bravo, Brownsville, Texas †	29.99	761.7	78	25.6	95	SE	2	0.9			2		SSE	0	0			Fair	
§ Saratoga, Lisbon, Portugal	30.02	762.5	72	22.2	50	E			3		10		S	0	0			Overcast	
§ Shenandoah, Montevideo, Uruguay	30.14	765.5	52	11.1	79	NNW			4		2					Smooth		Fair	
§ St. Louis, League Island, Pa.	30.09	764.3	69	20.6	100	SW	7	3.1			2			0	0			Misty	
Swatara, Bangkok, Siam †	29.78	756.4	85	29.4	87	ESE			3		10		Calm			Smooth		Cloudy	
§ Tennessee, N. 26° 49′, W. 79° 37′														0.45	11.4				
Ticonderoga, Yokohama, Japan	29.82	757.4	69	20.6	95	WSW			1		5		Calm			Smooth		Fair	
§ Trenton, Villafranca, France	30.33	770.4	64	17.8	78	NW			1		5			0	0	None		Fair	
§ Wabash, Boston, Mass.	30.06	763.5	67	19.4	84	E	7	3.1			2			0	0			Clear	
§ Wachusett, S. 47° 26′, W. 64° 48′	29.11	739.4	52	11.1	100	NW			5		2		W	0	0	Long	N	Fair	
Wyoming, Villafranca, France	30.35	770.9	67	19.4	74	ESE			1		2		SE			Smooth	SE	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

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

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the 24 hours.		Sea-swell.		Weather.	OBSERVER.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 38° 20', W. 71° 36'	30.10	764.5	66	18.9		WSW			3		0					Smooth	WSW	Clear.	
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng.*†	30.04	763.6	64	17.8	89	SW			3		5		SW	0	0			Fair.	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 50° 24', W. 19° 30'.*†	29.56	750.8	54	12.2	93	SSW			7		10		WSW	2 h'rs	2 h'rs	Heavy	WSW	Rain-squalls	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the 24 hours.		Sea-swell.		Weather.	OBSERVER.
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 22° 37', E. 115° 21'.††	29.82	757.4	76	24.4	100	ENE			5		8		ENE			Smooth		Cloudy.	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 07', W. 135° 36'.††	30.56	776.2	59	15.0	82	NW			2	0		N		0	0	Smooth	N	Clear.	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 34° 09', W. 119° 01'.††	29.92	760.0	57	13.9		E			2		0					Light	W	Clear.	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, Portland, Oregon.†	30.37	771.4	44	6.7		Calm			0		2							Clear.	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Champerico, Guatemala†	29.85	758.2	78	25.6	91	ENE			2		10		Calm			Mod'ate	SSW	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. S. 10° 10′, W. 169° 20′....†	29.87	758.7	82	27.8	96	ESE			2		0			0	0	Light	SE	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 22° 12′, W. 109° 14′....†	29.86	758.4	65	18.3	94	W			3		2		W	0	0	Mod'ate	W	Hazy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Yokohama, Japan.....†	29.85	758.2	68	20.0	79	WSW			1		0							Clear	
§ S. S. City of Sidney, H. C. Dearborn S. 36° 51′, E. 174° 45′....*†	29.75	755.6	56	13.3		SW			5		8		SW	0	0	Smooth		Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 43° 52′, W. 161° 21′...†	30.34	770.6	54	12 2	74	WNW			2		2		SW	0	0	Mod'ate	SW	Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 24° 39′, W. 112° 21′...†	29.87	758.7	62	16.7	100	NW			3		10		NW	0	0	Mod'ate	NW	Misty	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J. M Cavarly																			
§ S. S. Idaho, Victoria, Vancouver I'd ...†	30.51	774.9	54	12.2		W			3		2		W	0	0			Clear	
§ S.S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes, N. 40° 35′, W 55° 46′.....†	29.83	757.7	71	21.7		SSE			2		5		S	Much	Much			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings,																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 47° 56′, W. 38° 32′..... †	30.14	765.5	48	8.9		N			4		8		N			Mod'ate	N	Raining	J. Jones.
S. S. Celtic, B. Glendell																			
S. S. Republic, P. J. Irving N. 45° 12′, W. 40° 06′....*†	30.06	763.5	49	9.4		ENE			3				E	0	0	Light	E	Clear	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.12	765.0	65	18.3		Calm			0		5			0	0			Fine	Mehaffey.
Schr Adale Fuller, J. Jorgensen, Satilla river, Georgia	30.19	766.8	77	25.0	69	NE	4	1 8			5k		NE	0	0			D. clouds	J. Jorgonsen
Schr. Annie R. Lewis, L. L. Lewis. Arroyo, Porto Rico, W. I†	30.01	762.2	83	28.3		E			1		5		E	0	0	Smooth		Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 31° 12′, E. 12° 24′.....*†	30.18	766.6	62	16.7		SW			2		5		SW	0	0	Smooth	SW	Fair	B. F. Woodbury.
Brigantine George, W. H Champlin. N. 18° 00′, W. 67° 20′.....†	30.16	766.1	83	28.3		E			1		2		Calm	0	0	Smooth		Fine	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

Note.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

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

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

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

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

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

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

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

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

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

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 26, 1880.

7:35 A. M. WASHINGTON Mean Time.

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

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.19	766.9				NE			2		1			0	0	Very fair	Dr. Ollive.
Nemours			30.15	765.8	73.4	23.0	83	WNW			1		10			0	0	Covered	Metge.
Algiers			30.12	765.0	72.3	22.4	74	S			2		0			0	0	Clear	Nicolas.
La Calle			30.14	765.5	73.4	23.0	74	SW			1		4			0	0	Cloudy	Fonfrède.
Tunis			30.19	766.7															Jacques.
Sfax			30.32	770.1															Gau.
Saida			30.17	766.2															Bernard.
Tebessa			30.23	767.8	81.9	27.7	16	NW			1		1			0	0	Very fair	Watrin.
Geriville					82.6	28.1	92	ESE			4		0			0	0	Clear	Brugniaux.
Laghouat			30.20	767.1	83.5	28.6	17	NE			3		2			0	0	Fair	Suart.
Biskra			30.21	767.4	88.2	31.2	39	E			1		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 590? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

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

Agram	29.66	753.3	30.18	766.6	81.3	27.4	47	E			2		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.42	747.3	30.16	766.0	76.3	24.6	45	WNW	9.4	4.2			8			0	0		Dr. Wierzbicki.
Eperies	29.26	743.3	30.11	764.8	74.8	23.8	57	SE			2		5s		S	0	0		Julius Mikolik.
Gratz	28.98	736.2	30.19	766.8	76.1	24.5	55	SSW			3		0			0	0		Andreas Rospini.
Hermannstadt	28.80	731.4	30.16	766.1	78.8	26.0	35	NNW			1		1			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.85	732.9	30.13	765.4	78.8	26.0	50	Calm			0		0			0	0		The Staff.
Lemberg	29.12	739.6	30.07	763.7	73.6	23.1	44	NW			2		8			Blank	Blank		Dr. T. Stanecki.
Pola	30.12	765.0	30.23	767.8	73.6	23.1	60	WNW			1		0			0	0		I.R. Hydrographic Office.
Szathmar	29.77	756.2	30.22	767.5	78.8	26.0	47	NW			3		4			0	0		Pet. Pancsics, S. J.
Szegedin	29.90	759.5	30.17	766.3	76.1	24.5	50	S			1		0			0	0		Karl Stancel.
Trieste	30.15	765.7	30.25	768.3	74.3	23.5	57	Calm			0		0			0	0	Clear	P. Busin.
Vienna	29.50	749.3	30.25	768.3	80.2	26.8	36	NNE			1		1			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.82	757.4	30.01	762.2	84.6	29.2	38	SSW			4	7		SW		0	0		Royal Observatory
Furnes	30.02	762.4	30.04	763.0	84.7	29.3	35	WNW			1		4			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 24, 1880.

BRITISH SERIES.

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

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.51	749.5	29.60	751.8	59.4	15.2		SW	25	11.2			2			0	0	Blue sky	W. Boswell.
Ardrossan	29.71	754.6	29.73	755.1	52	11.1		SW			4		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.55	750.6	29.78	756.4	56.8	13.8		SW	16	7.2			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.85	758.2	56.1	13.4		SW	15	6.7			9					Overcast	John Hartnup.
Bolton (Sharples)	29.34	745.2	29.85	758.2	53.2	11.8		SSW	12	5.4			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.47	748.5	29.87	758.7	58.1	14.5	68	SW			2		10			1.02	25.9	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.95	760.7	29.98	761.5	81.5	27.5		NE			2		8					Overcast	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.84	757.9	29.93	760.2	78.0	25.6		SSW			1		10					Overcast	H. Todd.
Cardington			29.92	760.0	77.6	25.0		W			0-1		9			Blank	Blank	Overcast	John McLaren.
Chatham (School M. E.)	29.84	757.9	29.96	761.0	82.9	28.3		SW			1	3c						D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.74	755.4	29.78	756.4	60	15.6		SW			4		8					D. clouds	J. Mac Gowan.
Dover	29.95	760.7	29.99	761.7	62	16.7		SW			3		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.74	755.4	29.96	761.0	57.6	13.9		SSE			1							Foggy	The Staff.
Fort Napier, Natal	27.70	703.6	29.91	759.7	75.0	23.9		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	85	29.4		NW			1		5					D. clouds	
Galway (Queen's College)			29.80	756.9	55.5	13.1		SW			4		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.09	764.3	30.14	765.5	71.6	22.0		NE			1		5					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.52	749.8	29.72	754.9	54.0	12.2		SW			6		9k					Gloomy	D. G. Maclean.
Great Yarmouth	29.94	760.5	29.95	760.7	63	17.2		S			2		4					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.77	756.1	29.93	760.2	85.3	29.6		SW			1		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.95	760.7	71.5	21.9		SSW			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.11	764.8	30.23	767.8	65	18.3		SSE			2		8k			0	0	Misty	M. P. Moyle.
Holyhead	29.89	757.4	29.85	758.2	58	14.4		SSW			5		6					D. clouds	John Tilston.
Jersey	29.72	754.9	30.09	762.0	65.0	18.3		NE			1		8					Gloomy	J. Fisher.
Kew (Observatory)	29.90	759.4	29.93	760.2	75.9	24.4		SSW	13	5.8			7					Threatening	The Met'g'l Office.
Leicester (Museum)	29.67	753.6	29.92	760.0	65.2	18.4		SW			1		10					Drizzling	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.08	764.0	30.16	766.1	73	22.8		N			2		0					Blue sky	A. King.
Nairn	29.43	747.5	29.52	749.8	60	15.6		SSW			7		2					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.07	763.8	79.5	26.4		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.74	755.4	29.92	760.0	67.3	19.6		S			3		10k		SW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.38	746.2	29.90	759.4	63.0	17.2		SW			2		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.71	754.6	29.97	761.2	69	20.6		SSW			1		10					Overcast	The Staff, for E. J. Stone, Esq
Plymouth	29.89	759.2	29.97	761.2	60.8	16.0		S			1		10					Overcast	John Merrifield.
*Roche's Point	29.80	756.9	29.91	759.7	57	13.9		WSW			4		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.76	755.9	29.92	760.0	53	11.7		S			2		10					Foggy	John C. Walker.
Sandwick Manse, Orkneys			29.44	747.8	54.8	12.7		SW	18	8.0			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	30.08	764.0	30.14	765.5	72.6	22.6		NE			2		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.63	752.6	29.90	759.4	62.8	17.1		SW			3		10			0.97	24.6	Overcast	W. F. Cooper.
Silloth Rectory	29.77	756.1	29.80	756.9	49.9	9.9	92	W			4		10			0.053	1.35	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.88	758.9	53.9	12.1		SW	10	4.5			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.74	755.4	29.95	760.7	73.2	22.9		SW			3		6					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.96	761.0	29.97	761.2	67	19.4		Calm			0		8					Gloomy	W. Newcombe.
Valencia Observatory)	29.85	758.2	29.87	758.7	56.5	13.6		SW	20	8.9			7					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.10	764.5	30.14	765.5	60.1	15.6	72	SSW	6.7	3.0		10	10			0.03	0.8	Drizzling	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.92	760.0	54.0	12.2	88	S			2		10kn			0.25	6.3	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			29.74	755.4	55.5	13.1		SW			6		10k			0	0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.92	760.0	30.11	764.7	75.0	23.9	64	SE	14.0	6.3		0	2			0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.76	755.9	29.85	758.2	43.2	6.2	91	NE	6	2.7			2			0.05	1.3	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.40	746.7	51	10.6		SW			8	5	3	SW		0.3	8.		J. Youngclause.
North Unst, Shetland I's			29.36	745.7				SW			7		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer
H. M. S. Alert,				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Dommewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 39° 25′, W. 57° 40′	5	N	D. clouds	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German. S. 30° 34′, E. 15° 05′			D. clouds	Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra,				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

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

STATIONS	Barometer, Corrected for instrum'tal error and temperature. Inches.	Barometer, Corrected for instrum'tal error and temperature. Millimeters.	Barometer, Reduced to sea-level. Inches.	Barometer, Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.19	665.2	29.91	759.7	68.4	20.2	91	SE			2	1c	9d		E	0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

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

Copenhagen	30.08	764.0	30.18	765.2	60.1	15.6	61	SW			2		2						
Fanöe	29.99	761.8	30.01	762.3	65.7	18.7	59	SSW			6		2						
Godthaab (Greenland)																			
Styrkishoim (Iceland)	29.54	750.2	29.58	751.3	32.7	0.4	89	NE			8		8					Snowing	
Thorshavn (Faröe)	28.39	733.9	28.93	734.8	48.4	9.1	87	S			9		10					Raining	
Vestervig	29.87	758.6	29.96	761.0	64.4	18.0	59	S			6		1						

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

FRENCH SERIES.

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

Alençon, Normal School	29.49	749.1	30.04	763.1	82.4	28	44	S			1		2s			0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.87	758.7	29.97	761.8	92.8	33.8	30	SSW			1		2		Calm	0	0	Slightly cld'y	Vaillant, Director.
Arras, Engineer School	29.77	756.2	30.02	762.4	84.6	29.2	33	SW			1		9k			0	0		Klein, Commandant.
Avignon, Normal School	30.17	766.3	30.25	768.3	78.8	26	51	S			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.54	750.4	30.07	763.7	84.6	29.2	28	S			1	2c				0	0	Slightly cld'y	C. Saillard, Director.
Beauvais, Normal School	29.76	756.0	30.02	762.4	82.2	27.9	42	SSE			1		5			0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.29	744.0	30.15	765.7	78.8	26	45	SW			1		0			0	0	Clear	A. Carré, Director.
Bordeaux	29.79	756.6	29.98	761.6	83.3	28.5	34	SE			2		5		SSW	0	0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.30	744.2	30.23	767.8	80.6	27	43	S			4		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.54	750.4	30.04	763 0	81.7	27.6	44	SE			2	2c				0	0	Clear	M. Gence, Director.
Brest, Naval Observatory	29.71	754.6	29.95	760.8	74.5	23.6	68	Calm			0		9			0	0	Threatening	Ch. de Rermaree, Dir.
Caen, Normal School	29.84	757.8	29.89	759.2	80.6	27	79	S			1		5			0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.73	755.2	30.13	765.4	73.0	22.8	50	E			3		2		E	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.90	759.4	30.21	767.3	86.0	30.0	48	SSW			1		2		ENE	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.50	749.2	30.05	763.2	86.0	30	71	SE			1		3		SE	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.74	730.1	30.02	762.5	85.3	29.6	26	SSE			1		0			0	0		Alluard, Director.
Commercy, Normal School	29.27	743.5	30.10	764.4	79.5	26.4	38	W			4					0	0		Dr. Coullet, Director.
Commune de Gréasque*	29.18	741.2	30.32	770.2	75.6	24.2	45	S			2		2		SW	0	0		L. Kiua, Director.
Grenoble, Normal School	29.36	745.8	30.10	764.5	76.6	24.8	50	NW			2		0			0	0	Clear	Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.80	756.9	30.00	762.1	85.3	29.6	36	S			1		5		SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.72	754.8	30.01	762.2	82.9	28.3	44	S			3		5		SSW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.32	744.7	30.20	767.0	80.4	26.9	39	SSW			2		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	29.91	759.6	30.02	762.4	69.8	21.0	73	SE			3		8	SE	S	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.52	749.9	30.11	764.8	82.9	28.3	28	S			3		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	30.00	761.9	30.26	768.7	70.0	21.1	69	WNW			1		0			0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	29.13	739.8	30.13	765.2	77.0	25	53	SW			1	c			SW	0	0		Barbier, Director.
Mont-Louis	25.64	636.0	30.28	769.0	66.2	19.0	46	WSW	18.6	8.3			0			0	0		M. Cave, for Dr. Fines.
Nice	30.25	768.4	30.28	769.2	72.0	22.2	74	SE			1			S	SE	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	30.05	763.2	30.25	768.4	76.6	24.7	54	SW			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	30.07	763.7	30.17	766.4	69.1	20.6	68	SE	26.2	11.7			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.76	578.0			54.1	12.3							1		S	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	29.16	740.6	30.18	766.6	77.7	25 4	39	S			3		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Obs	25.36	644.2			66.6	19.2	38	E			2	1c				0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.00	761.9	30.03	762.7	85.5	29 7	48	S			1		0			0	0	Clear	Lt. E. Decante, Director
Rouen, Normal School	29.91	759.6	29.99	761.8	88.2	31.2	30	SSE			1		0			0.035	0.9	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	29.91	759.8	29.95	760.6	80.8	27.1	43	S			3		1	S	S	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.88	759.0	30.05	763.2	86.9	30.5	35	SSE			2		3	WSW		0	0		E. Renou, Director.
Tarbes, Normal School	29.00	736.6	30.07	763.7	89.6	32	49	E											T. Huguet, Director.
Toulouse, Observatory	29.41	746.9	30.13	765.3	70.9	21.6	51	SSE			6		0			0	0	Clear	B. Baillaud, Dir.
Tours	29.81	757.2	30.01	762.2	86.4	30.2	33	SSE			2		2		NNW	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.57	751.0	30.06	763.5	85.3	29.6	36	SW			2					0	0		Dr. A. Borigny, Director
Villefranche-sur-Saone, N. S	29.33	745.0	30.00	762.1	84.2	29	40	SE			4		0			0	0	Clear	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.14	765.5	30.17	766.2	79.5	26.4										2.52	64.		L'Abbé Marchési
Paris, Montsouris Obs'y	29.77	756.1			85.3	29.6	34	SSW			2		4		WSW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.79	756.6	29.81	757.2	68.2	20.1	87	SE	15.7	7.0			0			0	0	Clear	Marc Dechevreus, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,680.40 m., or 5,514.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.30	744.1	30.17	766.2	81.1	27.3	37	SE			4		1k	SE		0	0		Prof. Dr. Hoh.
Berlin	29.99	761.8	30.16	766.0	79.5	26.4	33	SW			1		4			0	0		Prof. Dr. Arndt.
Breslau	29.69	754.2	30.23	767.8	75.4	24.1	26	W			2		1			0	0		Royal University Obs'y
Carlsruhe	29.70	754.4	30.11	764.8	82.8	28.2	50	SW			1		0			0	0		Albert Senz.
Cassel	29.53	750.0	30.14	765.5	85.3	29.6	30	W			2		0			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.84	757.8	30.20	767.1	83.5	28.6	15	SSW			1		1			0	0		Physical Society.
Friedrichshafen	28.75	730.2	30.13	765.4	72.7	22.6	61	SW			2		0			0	0		Chief Telegrapher Wilhelm.
Hamburg	30.01	762.2	30.08	764.0	74.1	23.4	54	SW			3		0			0	0		Dr. Reinhold Kleeman.
Kiel	30.05	763.3	30.07	763.7	69.3	20.7	48	SSW			1		3			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	30.10	764.4	30.18	766.5	59.5	15.3	42	NW			3		2	NW		0	0		Prof. E. Luther.
Köslin			30.18	766.5	66.4	19.1		NW			2		1			0.024	0.6		H. Müller.
Leipsic Observatory	29.78	756.3	30.18	766.6	79.9	26.6	29	SSE			1		1			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.93	760.2	30.16	766.0	80.2	26.8	31	S			3		1k	SSW		0	0		Dr. Assmann.
Memel	30.09	764.3	30.14	765.5	48.0	8.9	86	WNW			4	2c							Reinbrecht & Issermann
Munich	28.41	721.6	30.29	769.3	78.8	26.0	31	E			2		2			0	0		Dr. C. Lang.
Neufahrwasser	30.20	767.0	30.21	767.4	56.1	13.4	56	SSW			4		0			0	0		A. Lothes.
Neustadt (Palatinate)																			Reallehrer Dickmether.
Posen	29.93	760.3	30.21	767.4	72.9	22.7	33	W			6		1			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.62	752.3	30.14	765.5	84.0	28.9	32	SE			3		1			0	0		Imp. University Observatory.
Stuttgart	29.19	741.4	30.03	762.7	85.1	29.5	25	E					0			0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.71	729.2	30.30	769.5	79.2	26.2	53		0.9	0.4			2k	SSW		0	0		Reallehrer J. Hopfner.
Wustrow	30.13	765.3	30.15	765.9	64.4	18.0	72	E			3		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

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

Athens	29.71	754.6	30.09	764.3	77.0	25.0		NE			6.0		0					Clear	Dr. J. F. J. Schmidt

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.60	751.7	29.64	752.9	86.0	30.0	84	SW	23	10.3			6	W		0	0	D. clouds	
Déesa	29.12	739.6	29.57	751.0	104.8	40.4	18	W	13.5	6.0			0			0	0	Misty	
Bombay	29.70	754.3	29.73	755.2	86.3	30.2	72	WNW	17	7.6			2		W	0	0	D. clouds	
Poona (Yarrowda)	27.84	707.2	29.66	753.2	88.0	31.1	48	WNW	33	14.8			2		NE	0	0	D. clouds	
Belgaum	27.19	690.7	29.69	754.1	82.0	27.8	63	SSW	14	6.3			7	SE		0	0	D. clouds	
Lahore	28.76	730.4	29.46	748.2	105.3	40.7	20	Calm	2.5	1.1			0			0	0	Misty	
Roorkee	28.66	727.9	29.52	749.8	95.9	35.5	35	SE	5	2.2			1			0	0	Misty	
Agra	29.00	736.6	29.54	750.4	94.6	34.8	31	S	5.4	2.4			0			0	0		
Nagpur	28.54	725.0	29.54	750.3	100.0	37.8	28	S	5.1	2.3			8		W	0	0	D. clouds	
Jubbulpore	28.22	716.9	29.52	749.9	100.7	38.2	21	NW	6.2	2.8			4			0	0	D. clouds	
Lucknow	29.17	740.9	29.54	750.2	91.1	32.8	48	ENE	5.5	2.5			0			0.03	0.8	Blue sky	
Allahabad	29.20	741.6	29.50	749.2	97.7	36.5	41	ENE	3.9	1.7			2		W	0	0	D. clouds	
Patna	29.41	747.0	29.58	751.4	91.5	33.1	48	Calm	2.1	0.9			0			0	0	Blue sky	
Hazaribagh	27.60	701.2	29.62	752.3	73.8	23.2	80	SE	7.3	3.3			3			0.26	6.6	Thunder-storm	
Cuttack	29.54	750.2	29.62	752.3	89.0	31.7	65	SSE	3.5	1.6			0			0.06	1.5	Blue sky	
Calcutta (Alipore)	29.59	751.5	29.61	752.0	87.3	30.7	69	SSE	1.0	0.4			2		SE	0	0	D. clouds	
Goalpara	29.23	742.4	29.64	752.7	78.5	25.8	81	NE	2.9	1.3			6	W	W	0.31	7.9	Gloomy	
Chittagong	29.56	750.7	29.64	753.0	80.9	27.2	89	ESE	4.6	2.1			10			0.05	1.3	D. clouds	
Sibsagar	29.35	745.5	29.68	754.0	80.0	26.7	89	Calm	1.5	0.7			10	W	W	0.28	7.1	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.82	757.4	30.22	767.6	70.0	26.1	39	SW	1.8	0.6			1			0	0		Prof. Giovanni Clodig.
Milan	29.70	754.4	30.20	767.1	79.5	26.4	44	SSW	4.3	1.9			0			0	0		Prof. Schiaparelli.
Padua	30.12	765.0	30.23	767.7	77.9	25.5	52	SW	1.8	0.8			1	ENE		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.32	744.6	30.21	767.3	78.1	25.6	48	SE	0.7	0.3			2	NNE		0	0		Prof. P. F. Denza.
Genoa	30.09	764.3	30.28	769.1	69.8	21.0	60	SW	3.1	1.4			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.35	720.1	30.23	767.8	74.7	23.7	52	N			2		0			0	0		Prof. D. C. Bruno.
Pesaro	30.19	766.8	30.24	768.0	70.3	21.3	73	NE	9.4	4.2			1			0	0		Prof. Luigi Guidi.
Florence	29.97	761.3	30.23	767 8	77.9	25.5	32	W			2		0			0	0		Cav. F. Meucci.
Leghorn	30.19	766.9	30.28	769.0	69.4	20.8	59	SW	3.1	1.4			0			0	0		Prof. P. Monte.
Rome	30.07	763.6	30.24	768.0	79.5	26.4	51	W	6.9	3.1			0			0	0		Prof. P. S. Ferrari.
Lecce	29.94	760.5	30.19	766.9	73.0	22.8	50	N	15.4	6.9			0			0	0		Prof. C. De Giorgi.
Cosenza	29.32	744.7	30.20	767.1	80.6	27.0	65	SE	1.8	0.8			0			0	0		Prof. D. Ot 1.
Cagliari	30.02	762.4	30.21	767.2	73.0	22.8	52	SSW			4		0			0	0		Prof. A. Pacinotti.
Palermo	30.01	762.3	30.26	768.7	68.9	20.5	49	ENE	6.9	3.1			0			0	0		Prof. G. Ciacciatore.
Syracuse	30.13	765.4	30.18	766.5	75.7	24.3	68	E	2.5	1.1			1	W		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.69	754.0	30.19	766.9	76.3	24.6	68	NE	1.8	0.8			1	NE		0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					66.2	19.0	74	NNE	5.8	2.6			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.80	756.9	30.00	762.0	64.4	18.0	76	WSW	0.7	0.3			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.94	760.5	30.01	762.2	62.7	17.1	76	SSW	3.3	1.5		0	0			0	0	Clear	The Staff.
Wakayama	29.96	761.0	30.01	762.2	67.0	19.4	68	NW	3.4	1.5			0			0	0	Clear	

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

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

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

Colima																			R. Banda, C. E.
Guadalajara	24.98	634.5	30.02	762.6	53.6	12.0	32	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.61	599.7			62.6	17.0	58	Calm	0	0		8	0	Calm		0	0	Clear	Vicente Fernandez.
Leon	24.34	618.1	29.92	759.9	65.1	18.4	58	N			2	1c	0			0	0	Clear	Prof. M. Leal.
Mazatlan	29.65	753.1	29.91	759.6	71.8	22.1	95	E			1	0	8k		SE	0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.01	584.5	29.86	758.4	62.2	16.8	52	Calm	0	0		10c	0			0	0	Hazy	The Staff
Morelia	23.89†	606.9†			71.6	22.0	38	SE			2	3c	0	SE		0	0	Clear	M. Fena, M. D.
Pabellon (Aguascalientes)	23.89	606.9	29.85	758.2	59.7	15.4	44	Calm			0	2c	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.37	593.7	30.09	764.2	55.4	13.0	33	Calm	0	0		1c	0	W		0.004	0.1	Clear	Prof. P. Spina.
San Luis Potosi	24.13	612.9	29.97	761.3	65.7	18.7	57	SE			1	1	0	W		0	0	Clear	G. Barroeta, M. D.
Tacotalpam	29.76	756.0	29.78	756.3	79.9	26.6	88	SW			1	3	1	NE	SE	0	0	Fair	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.54	572.5	30.08	764.0	61.5	16.4	40	Calm			0	2c	0	SW		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.4 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

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

Flushing	30.02	762.6	30.02	762.6	79.7	26.5		W			1					0	0		
Groningen					77.0	25.0		SW								0	0		
Helder	29.99	761.8	29.99	761.8	66.0	18.9		SSW			4					0	0		
Hellevoetsluis	30.02	762.6	30.02	762.6	80.4	26.9	63	W			1					0	0		
Utrecht	29.98	761.5	30.03	762.7	85.6	29.8	41	SW			2		2			0	0	L'tly cloudy	H. v. d. Brink.

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

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Bergen	29.65	753.2	29.71	754.6	50.0	10.0	84	S	33.3	14.9			10			0.256	6.5	Raining	
Brönö	29.70	754.4	29.74	755.4	49.6	9.8	74	WSW	9	4			7			0.039	1.0		
Christiania	29.76	755.9	29.91	759.6	59.0	15.0	52	S	11	5			10			0	0		
Tromsö	29.65	753.2	29.71	754.6	37.6	3.2	85	NE	4	2			10			0.169	4.3		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer
Angra (Azores)	30.01	762.3	30.22	767.6	68.4	20.2	83	NNE			3		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.09	738.9	30.09	764.3	59.7	15.4	91	ESE	8.7	3.9			10			0.480	12.2		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.07	763.8	30.16	766.0	67.8	19.9	56	SW	8.0	3.6			2			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.71	754.5	30.07	763.6	67.6	19.8	70	SSW	18.6	8.3			9			0.020	0.5		The Staff.
Ponta Delgada (Azores)	30.13	765.4	30.21	767.2	66.9	19.4	68	WNW	8.7	3.9			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Novo Redondo, Benguela			29.93	760.1	73.4	23.0		NW			1		5		NW	2	NW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello Mossamedes, Benguela			29.97	761.2	71.6	22.0		NNW			2		1			1			Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.90	759.5	80.6	27.0		E			3		10		E	2	SE	10	Rain storm	J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer
Archangel	29.33	745.0	29.35	745.5	49.5	9.7	91	WSW	9	4			10						Capt. Sselliwerstow.
Astrakhan	30.07	763.8	29.99	761.7	73.9	23.3	29	WNW	34	15			6ks			Blank	Blank		Capt. Wisganow.
Barnaul	29.17	740.8	29.63	752.7	73.8	23.2	43	SSW	0	0			8					Light clouds	Meteorological Obs.
Dorpat	29.62	752.3	29.85	758.3	59.0	15.0	87	NW	13	6			3k						Prof. Dr. Weihrauch.
Ekaterinburg	28.39	721.0	29.32	744.6	56.8	13.8	94	NE	9	4			10					Raining	Meteorological Obs.
Irkutsk																			
Kasan	29.17	740.9	29.43	747.6	55.0	12.8	57	WSW	7	3			8kn						Physical Cabinet.
Kertch	30.24	768.1	30.26	768.6	74.5	23.8	53	NW	2	1			0						Lagorio.
Kieff	29.41	746.9	30.02	762.5	70.0	21.1	40	WNW	9	4			5ks						Physical Cabinet.
Krotkowo*	29.24	742.6	29.70	754.4	55.9	13.3	53	NW	10.1	4.5			2k						Cand. Fatjanow.
Lugan	29.84	757.9	30.04	763.0	70.0	21.1	29	WNW	22	10			0						Meteorological Obs.
Moscow	29.21	741.8	29.75	755.7	49.8	9.9	62	W	10 1	4.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.14	765.5	30.21	767.3	73.9	23.3	56	SSW	9	4			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.75	755.7	29.84	757.9	34.5	1.4	87	Calm	0	0			6s						
Nukuss																			
Orenburg																			
Pekin (China)	29.55	750.6	29.69	754.2	68.9	20.5	75	SE	4	2			5ks					Thunder-storm	Physical Observatory.
St. Petersburg	29.65	753.1	29.67	753.5	52.9	11.6	57	WNW	22	10			3k						Central Physical Obs.
Tashkend	28.47	723.2	29.98	761.6	74.1	23.4	55	Calm	0	0			2					Light clouds	Teich, A. M.
Tiflis	28.83	732.3	30.21	767.4	70.7	21.5	38	N	9	4			1ks						Physical Observatory.
Vladivostock																			
Warsaw	29.74	755.4	30.15	765.9	70.0	21.1	49	NW	2	1			6k						Astronomical Obs.
Wilna	29.66	753.4	29.68	753.9	61.3	16.3	46	WNW	16	7			7					Light clouds	Astronomical Obs.
Yeniseisk	29.63	752.6	29.91	759.6	64.8	18.2	29	SSE	7	3			1						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer
Barcelona, Met. Obs'y	30.11	764.8	30.21	767.4	68.7	20.4	60	ESE	3.4	1.50			0			0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.93	760.3	29.99	761.7	88.5	31.4	35	S	4.9	2.20		1	8	SE		0	0	Almost cov'd	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.15	689.6			76.1	24.5	54	SW	10.4	4.66			6			0	0	Cloudy..	Domingo Martiny Peres.
Madrid, Royal Observatory	27.88	708.2	30.02	762.4	77.4	25.2	45	SE	4.5	2.00		8	0	S		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	30.00	762.1	30.15	765.8	75.0	23.9	62	SE	5.5	2.47		4	4	NE		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.09	738.8	29.97	761.2	63.1	17.3	83	WSW	8.0	3.6			10			0.075	1.9	Covered	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.92	760.0	29.99	761.7	78.2	25.7	80	E	7.2	3.2		2ck;cs	1s;k	NW		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.79	756.7	29.84	758.0	86.7	30.4	65	ESE	0.7	0.3						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.08	764.1	30.18	766 6	66.2	19.0	82	E	8.2	3.7		0	10		E	0.063	1.6		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.90	759.5	29.99	761.8	79.9	26.6	91	SE	0	0		6k	6kn	SE	SE	0.787	20.00	Cloudy	Enrique Gades, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.52	749.8	29.56	750.8	44.2	6.8	.....	NW	.....	.....	4	.....	10	.....	.....	0.354	9.0	.....	
Umea	29.67	753.6	29.72	754.9	58.6	14.8	26	NW	.....	.....	7	.....	5	.....	.....	0	0	.....	
Hernosand	29.78	756.4	29.83	757.7	64.4	18.0	73	W	.....	.....	6	.....	2	.....	.....	0	0	.....	
Stockholm	29.82	757.3	29.99	761.8	59.4	15.2	33	W	.....	.....	6	.....	1	.....	.....	0.106	2.7	.....	
Wisby	29.93	760.2	29.99	761.7	57.6	14.2	49	W	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.80	757.0	29.89	759.2	61.5	16.4	31	W	12.5	5.6	.....	.....	4	.....	WNW	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.77	730.7	30.15	765.8	69.8	21.0	58	N	.....	.....	2	.....	0	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.57	725.6	30.11	764.9	82.4	28.0	45	N	.....	.....	1	.....	0	.....	.....	0	0	Clear.	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +5.1 mm.; Thermometer, +2.9 Cent. Relative Humidity, +2 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.18	766.5	68.9	20.5	43	ENE	17	7.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.17	766.4	74.7	23.7	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.84	758.0	76.1	24.5	75	NE	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	56.0	13.3	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	29.90	759.4	29.96	761.0	59.6	15.3	76	NW	1	0.4	.....	7ck	0	NW	.....	0.07	1.8	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	48.9	9.4	95	N	8	3.6	.....	.....	10n	.....	.....	0.045	1.15	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.72	754.9	29.90	759.4	75.0	23.9	75	W	.....	.....	2	0	0	.....	.....	0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. A. Johnson.
Father Point, Quebec	29.99	761.7	30.01	762.2	44.5	6.9	80	W	1	0.4	.....	0	0	.....	.....	Inap	Inap.	Clear	J. McWilliams.
Fredericton, N. B.	29.91	759.7	29.97	761.2	61.6	16.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	28.94	735.1	29.76	755.9	50.0	10.0	89	NE	4	1.8	.....	.....	10n	.....	.....	0.850	21.59	Light rain	James Stewart.
Granton, Ontario	28.99	736.3	30.04	763.0	73.0	22.8	76	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.86	758.4	29.99	761.7	43.2	6.2	98	SE	3	1.3	.....	.....	Fog	.....	.....	0.028	0.71	Foggy	A. Allison.
Hamilton, Ontario	29.65	753.1	30.02	762.5	74.2	23.4	80	S	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.67	753.6	30.00	762.0	63.8	17.7	84	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.96	761.0	30.00	762.0	37.4	3.0	90	SE	4	1.8	.....	.....	10n	.....	.....	0.07	1.8	Raining	C. H. Rigby.
Montreal, Quebec	29.73	755.1	29.92	760.0	73.0	22.8	77	W	4	1.8	.....	2c;cs	0	W	.....	0	0	Clear.	C. H. McLeod, C. E
Moose Factory, Ontario	29.82	757.4	29.86	758.4	48.8	9.3	94	NE	.....	.....	2	.....	10n	.....	.....	0.02	0.5	Cloudy	J. R. Nason.
Norwood, Ontario	29.30	744.2	29.96	761.0	76.2	24.6	72	W	3	1.3	.....	0	7ks	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.31	744.5	29.98	761.5	67.5	19.7	82	W	1	0.4	.....	2cs	0	W	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.29	744.0	30.00	762.0	74.4	23.6	79	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.38	746.2	30.05	763.3	66.1	18.9	95	S	6	2.7	.....	0	0	.....	.....	0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.44	747.8	30.06	763.5	69.5	20.8	85	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.69	754.1	30.01	762.2	54.0	12.2	87	NE	.....	.....	1	0	5s	.....	.....	0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.48	748.8	29.93	760.2	59.0	15.0	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.81	757.2	29.98	761.5	51.0	10.6	100	E	5	2.2	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.35	744.5	29.99	761.7	72.4	22.4	74	SW	17	7.6	.....	7k	0	.....	.....	Inap.	Inap.	Fair	K. Stewart.
Stratford, Ontario	28.78	731.0	30.01	762.2	70.2	21.2	82	SW	4	1.8	.....	1cs	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.95	760.7	29.99	761.7	39.4	4.1	94	E	1	0.4	.....	.....	10n	.....	.....	0.04	1.0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.65	753.1	30.02	762.5	69.7	20.9	78	SW	3	1.3	.....	0cs	Haze	W	.....	0	0	Fair	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.98	736.1	29.98	761.5	78.5	25.8	65	SW	7	3.1	.....	1ck	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.90	759.4	29.97	761.2	54.1	12.3	87	SW	4	1.8	.....	8k	Fog	S	.....	0	0	Light fog	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.91	759.7	30.17	766.3	42	5.6	83	E	0	0	.....	5k	5s	.....	.....	0	0	Fair	John Delany.
St. Pierre, N. F., Pilopital Maritime	.....	.....	29.98	761.5	41.0	5.0	.....	SE	.....	.....	2	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.96	761.0	30.04	763.0	77	25.0	69	S	4	1.8		2c	0	Calm		0	0	Fair	
Alpena, Michigan	29.29	744.0	29.91	759.7	63	17.2	83	S	5	2.2		8cs	0	S		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.99	736.3	30.10	764.5	71	21.7	71	SE	9	4.0		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.02	762.5	30.04	763.0	80	26.7	74	W	4	1.8		5c	Fog	Calm	Calm	0	0	Fair	
Augusta, Georgia	30.02	762.5	30.22	767.6	70	21.1	80	Calm	0	0		5cs	Haze	Calm	Calm	0	0	Fair	
Baltimore, Maryland	30.02	762.5	30.07	763.8	81	27.2	67	S	2	0.9		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	30.01	762.2	30.03	762.7	78	25.6	73	NW	4	1.8		5c	Haze	Calm	Calm	0	0	Fair	
Bismarck, Dakota	28.08	713.2	29.93	760.2	48	8.9	92	N	28	12.5		5cs	5s	Calm	N	0.91	23.1	Cloudy	
Boerne, Texas	28.38	720.8	29.61	752.1	76	24.4	86	S	8	3.6			10ks		S	0	0	Cloudy	
Boise City, Idaho	27.38	695.4	30.34	770.6	50	10.0	65	N	6	2.7		0	0			0	0	Clear	
Boston, Massachusetts	29.82	757.4	29.97	761.2	82	27.8	60	Calm	0	0		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.65	727.7	29.65	753.1	74	23.3	95	SE	13	5.8			10s		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.66	728.0	29.61	752.1	56	13.3	94	SW	14	6.3			10s		W	2.97	75.4	Cloudy	
Brownsville, Texas	29.72	754.9	29.76	755.9	83	28.3	75	SE	8	3.6		0	8ks		SE	0	0	Fair	
Buffalo, New York	29.36	745.7	30.03	762.7	68	20.0	79	SW	6	2.7		5c	Haze	Calm	Calm	0	0	Fair	
Burkes, Arizona					58	14.4	27	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.68	753.9	29.95	760.7	77	25.0	69	S	3	1.3		2ck	0	N		Inap.	Inap.	Fair	
Cairo, Illinois	29.66	753.4	30.03	762.7	78	25.6	69	S	10	4.5		0	0			0	0	Clear	
Campo, California	27.32	693.9	29.88	758.9	45	7.2	84	E	12	5.4		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.15	765.8	30.16	766.1	75	23.9	81	W	10	4.5		0	0			0	0	Clear	
Cape Henry, Virginia	30.16	766.1	30.18	766.6	75	23.9	68	SW	12	5.4		0	Haze		Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.17	766.3	30.18	766.6	73	22.8	81	W	13	5.8		5k	0	W		0	0	Fair	
Cape May, New Jersey	30.01	762.2	30.04	763.0	73	22.8	81	W	4	1.8		0	0			0	0	Clear	
Castroville, Texas	29.02	737.1	29.68	753.9	78	25.6	82	SE	5	2.2			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.08	764.0	30.10	764.5	75	23.9	86	E	12	5.4		8cs	0	W		0.11	2.8	Fair	
Charleston, South Carolina	30.12	765.0	30.18	766.6	75	23.9	77	Calm	0	0		0	2ks		SE	0	0	Clear	
Charlotte, North Carolina	29.33	745.0	30.12	765.0	74	23.3	68	SW	6	2.7		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.34	745.2	30.12	765.0	68	20.0	84	NE	5	2.2		5ck	1s	S	Calm	Inap.	Inap.	Fair	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	36	2.2	61	N	6	2.7		0	2s		NW	Inap.	Inap.	Clear	
Chicago, Illinois	29.23	742.4	29.88	758.9	74	23.3	72	S	7	3.1		1c	0	Calm		0.03	0.8	Clear	
Chincoteague, Virginia	30.06	763.5	30.08	764.0	76	24.4	81	SW	10	4.5		0	0			0	0	Clear	
Cincinnati, Ohio	29.48	748.8	30.11	764.8	73	22.8	72	SE	3	1.3		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.37	746.0	30.06	763.5	74	23.3	68	SE	6	2.7		0	0			0	0	Clear	
Coleman City, Texas	28.02	711.7	29.58	751.3	75	23.9	77	S	15	6.7			10s		S	0	0	Cloudy	
Columbus, Ohio	29.27	743.4	30.05	763.3	82	27.8	52	S	3	1.3		0	0			0	0	Clear	
Concho, Texas	27.93	709.4	29.50	749.3	74	23.3	76	S	12	5.4		8k	0	S		0	0	Fair	
Corsicana, Texas	29.45	748.0	29.90	759.4	73	22.8	81	S	8	3.6		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.22	742.2	29.82	757.4	73	22.8	81	S	18	8.0			10s		S	0.36	9.1	Cloudy	
Dayton, Washington T'y					43	6.1	83	SE			1	0	0			0	0	Clear	
Deadwood, Dakota	25.37	644.4			41	5.0	74	Calm	0	0			10s		SW	0.36	9.1	Cloudy	
Decatur, Texas	28.68	728.5	29.79	756.7	74	23.3	86	SE	11	4.9			10s		SE	0	0	Cloudy	
Delaware Breakwater, Del.	30.06	763.5	30.08	764.0	76	24.4	77	W	5	2.2		0	Haze			0	0	Clear	
Denison, Texas	29.08	738.6	29.84	757.9	71	21.7	85	S	6	2.7			10ks		S	Inap.	Inap.	Cloudy	
Denver, Colorado	24.77	629.2	29.99	761.7	40	4.4	82	S	1	0.4		0	0			0.24	6.1	Clear	
Des Moines, Iowa	29.01	736.8	29.86	758.4	64	17.8	89	W	2	0.9			10n		Calm	0.36	9.1	Light rain	
Detroit, Michigan	29.38	746.2	30.02	762.5	69	20.6	75	SW	4	1.8		5ck	2s	SW	Calm	0	0	Fair	
Dodge City, Kansas	27.28	692.9	29.50	749.3	56	13.3	81	N	14	6.3		8ck	2s	W	Calm	1.61	40.9	Cloudy	
Dubuque, Iowa	29.15	740.4	29.81	757.2	72	22.2	76	S	11	4.9			10s		S	0	0	Cloudy	
Duluth, Minnesota	29.02	737.1	29.69	754.1	48	8.9	100	NE	4	1.8			Fog		Calm	0.47	11.9	Foggy	
Eagle Pass, Texas	28.97	735.8	29.66	753.4	78	25.6	82	SE	6	2.7			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.89	759.2	29.96	761.0	46	7.8	100	S	2	0.9			Fog		Calm	0	0	Dense fog	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.36	745.7	30.04	763.0	77	25.0	65	NE	1	0.4			Haze		Calm	0	0	Clear	
Escanaba, Michigan	29.19	741.4	29.82	757.4	58	14.4	76	S	6	2.7			10s		SW	0	0	Cloudy	
Florence, Arizona	28.34	719.8	29.94	760.5	53	11.7	67	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.93	633.2	30.38	771.6	34	1.1	61	Calm	0	0		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.02	711.7	29.86	758.4	46	7.8	69	N	18	8.0		5cs	0	N		0.22	5.6	Fair	
Fort Custer, Montana	27.05	687.1			39	3.9	91	N	8	3.6			10s		N	2.00	50.8	Cloudy	
Fort Davis, Texas	25.10	637.5	30.06	763.5	61	16.1	45	W	2	0.9		0	0			0	0	Clear	
Fort Elliot, Texas	26.78	680.2	28.92	734.6	61	16.1	71	N	20	8.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.33	745.0	29.84	757.9	75	23.9	72	SE	12	5.4		2cs	0	SW		0	0	Fair	
Fort Grant, Arizona	25.09	637.3	29.89	759.2	55	12.8	12	N	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.54	724.9	29.74	755.4	75	23.9	78	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.39	695.7			47	8.3	85	NW	14	6.3		0	8ks		NW	1.50	38.1	Fair	
Fort McKavett, Texas	27.55	699.8	29.36	745.7	74	23.3	72	S	12	5.4			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	28.09	713.5			47	8.3	85	N	20	8.9			10s		N	0.62	15.6	Cloudy	
Fort Verde, Arizona					50	10.0	45	NW			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.84	757.9	29.88	758.9	80	26.7	87	SE	9	4.0		0	2ks		SE	0	0	Clear	
Grand Haven, Michigan	29.30	744.2	29.91	759.7	76	24.4	69	S	20	8.9		2ck	0	W		0	0	Clear	
Helena, Montana					55	12.8	56	N	1	0.4		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.26	743.2	30.00	762.0	76	24.4	69	S	8	3.6		2ck	0	S		0.07	1.8	Clear	
Indianola, Texas	29.82	757.4	29.84	757.9	80	26.7	87	SE	12	5.4		2ck	2ks	S	S	Inap.	Inap.	Fair	
Jacksboro, Texas	28.76	730.5	29.84	757.9	75	23.9	77	SE	16	7.2		0	0			0	0	Clear	
Jacksonville, Florida	30.12	765.0	30.14	765.5	78	25.6	69	E	1	0.4		0	0			0	0	Clear	
Keokuk, Iowa	29.25	742.9	29.83	757.7	71	21.7	85	S	6	2.7			10s		Calm	0.20	5.1	Cloudy	
Key West, Florida	29.99	761.7	30.03	762.7	79	26.1	74	E	14	6.3		2k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	30.09	764.3	30.12	765.0	73	22.8	63	W	18	8.0		0	0			0	0	Clear	
Knoxville, Tennessee	29.19	741.4	30.17	766.3	71	21.7	73	Calm	0	0		5cs	0	SW		0	0	Fair	
La Crosse, Wisconsin	29.01	736.8	29.70	754.4	70	21.1	85	S	12	5.4			10s		S	0.24	6.1	Cloudy	
La Mesilla, New Mexico	25.96	659.4	30.11	764.8	55	12.8	33	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	28.32	744.7	29.64	752.8	82	27.8	71	SE	8	3.6			10s		SE	0	0	Cloudy	
Leavenworth, Kansas	29.01	736.8	29.81	757.2	69	20.6	79	E	4	1.8			10n		SW	2.64	67.1	Light rain	
Lewiston, Idaho																			
Little Rock, Arkansas	29.64	752.8	29.94	760.5	73	22.8	90	SE	4	1.8			10s		Calm	0.18	4.6	Cloudy	
Los Angeles, California	29.53	750.0	29.87	758.7	56	13.3	81	N	2	0.9		0	0			0	0	Clear	
Louisville, Kentucky	29.52	749.8	30.06	763.5	76	24.4	60	SE	6	2.7		2cs	0	Calm		Inap.	Inap.	Clear	
Lynchburg, Virginia	29.45	748.0	30.09	764.3	80	26.7	59	S	2	0.9		0	0			0	0	Clear	
Madison, Wisconsin	28.86	733.0	29.79	756.7	71	21.7	80	S	13	5.8		2cs	0	S		0	0	Fair	
Marquette, Michigan	29.08	738.6	29.74	755.4	71	21.7	75	SW	8	3.6			10s		SW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.17	715.5	29.82	757.4	76	24.4	77	S	10	4.5	.....	2k	5ks	SW	.....	0	0	Fair	
Memphis, Tennessee	29.65	753.1	29.98	761.5	73	22.8	81	SE	8	3.6	.....	2cs	Haze	Calm	Calm	Inap.	Inap.	Clear	
Milwaukee, Wisconsin	29.17	740.9	29.86	758.4	69	20.6	85	S	16	7.2	.....	8cs	1ks	S	S	0.02	0.5	Cloudy	
Mobile, Alabama	29.95	760.7	30.00	762.0	76	24.4	86	SE	10	4.5	.....	.....	10s	.....	SE	1.54	39.1	Cloudy	
Montgomery, Alabama	29.86	758.4	30.09	764.3	73	22.8	81	E	8	3.6	.....	9cs	0	SE	.....	0.02	0.5	Cloudy	
Morgantown, West Virginia	29.14	740.1	30.08	764.0	78	25.6	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.95	608.3	30.31	769.9	53	11.7	93	NW	20	8.9	.....	.....	Fog	.....	NW	0.04	1.0	Foggy	
Nashville, Tennessee	29.56	750.8	30.08	764.0	74	23.3	68	SE	2	0.9	.....	1k	0	Calm	.....	0	0	Clear	
New Haven, Connecticut	29.91	759.7	30.02	762.5	81	27.2	59	N	8	3.6	.....	5cs	0	N	.....	0	0	Fair	
New London, Connecticut	29.95	760.7	30.00	762.0	80	26.7	62	NW	2	0.9	.....	3c	Haze	W	Calm	Inap.	Inap.	Fair	
New Orleans, Louisiana	29.88	758.9	29.93	760.2	75	23.9	90	E	7	3.1	.....	2c	2s	W	E	0.76	19.3	Fair	
Newport, Rhode Island	29.93	760.2	29.98	761.5	75	23.9	68	NW	2	0.9	.....	5c	Haze	NW	.....	0	0	Fair	
New River, North Carolina	.....	.....	.....	.....	73	22.8	76	W	.....	.....	1	0	0	.....	.....	.....	.....	Clear	
New York, New York	29.88	758.9	30.05	763.3	79	26.1	57	NW	1	0.4	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	30.05	763.3	30.11	764.8	81	27.2	59	W	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.02	686.3	29.54	750.3	52	11.1	79	NW	10	4.5	.....	.....	10s	.....	W	0.01	0.3	Cloudy	
Olympia, Washington Ter.	30.39	771.9	30.44	773.2	36.0	2.2	90	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	28.64	727.4	29.69	754.1	64	17.8	89	W	8	3.6	.....	.....	10s	.....	SW	1.37	34.8	Cloudy	
Oswego, New York	29.74	755.4	30.04	763.0	75	23.9	64	S	3	1.3	.....	1c	0	Calm	.....	0	0	Clear	
Pembina, Dakota	28.75	730.2	29.56	750.8	50	10.0	100	NE	36	16.1	.....	.....	10u	.....	Calm	1.17	29.7	Light rain	
Pensacola, Florida	30.00	762.0	30.03	762.7	77	25.0	82	SE	16	7.2	.....	.....	10k	.....	SE	0.03	0.8	Cloudy	
Philadelphia, Pennsylvania	30.00	762.0	30.05	763.3	80	26.7	70	W	2	0.9	.....	0	Fog	.....	Calm	0	0	Clear	
Phœnix, Arizona	28.72	729.5	30.46	773.7	70	21.1	40	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.60	447.0	29.81	757.2	10	—12.2	58	SW	16	7.2	.....	5ck	0	SW	.....	0.03	0.8	Fair	
Pilot Point, Texas	29.08	738.6	29.89	759.2	74	23.3	81	S	16	7.2	.....	.....	10ks	.....	S	0	0	Cloudy	
Ploche, Nevada	24.07	611.4	29.84	757.9	38	3.3	38	NW	7	3.1	.....	0	2s	.....	NW	0	0	Fair	
Pittsburg, Pennsylvania	29.31	744.5	30.09	764.3	69	20.6	85	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Dense fog	
Port Huron, Michigan	29.38	746.2	30.01	762.2	68	20.0	84	S	8	3.6	.....	.....	10ks	.....	W	Inap.	Inap.	Cloudy	
Portland, Maine	29.90	759.4	29.95	760.7	75	23.9	68	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	30.35	770.9	30.42	772.7	43	6.1	87	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Portsmouth, North Carolina	.....	.....	.....	.....	73	22.8	81	SW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.68	626.9	30.04	763.0	32	0.0	69	W	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	76	24.4	73	E	12	5.4	.....	8c	0	W	.....	0.95	24.1	Fair	
Red Bluff, California	29.78	756.4	30.14	765.5	65.5	18.6	32	N	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.59	751.6	29.80	756.9	81	27.2	83	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.43	747.5	30.02	762.5	72	22.2	67	W	6	2.7	.....	1c	0	W	.....	0	0	Clear	
Roseburg, Oregon	29.83	757.7	30.42	772.7	39.5	4.2	91	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.95	760.7	30.02	762.5	61	16.1	50	N	14	6.3	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.39	746.5	29.94	760.5	73	22.8	81	S	16	7.2	.....	1cs	0	Calm	.....	0.04	1.0	Clear	
St. Paul, Minnesota	28.84	732.5	29.61	752.1	69	20.6	90	S	24	10.7	.....	.....	10ks	.....	S	0.02	0.5	Threatening	
Salt Lake City, Utah	25.70	652.8	30.03	762.7	42	5.6	66	Calm	0	0	.....	5k	0	W	.....	0.12	3.0	Fair	
San Antonio, Texas	29.13	739.9	29.80	756.9	77	25.0	86	SE	2	0.9	.....	2c	5ks	Calm	SE	0	0	Cloudy	
San Diego, California	29.84	757.9	29.91	759.7	53	11.7	93	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sandusky, Ohio	29.40	746.7	30.04	763.0	75	23.9	72	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.01	762.2	30.04	763.0	73	22.8	63	NW	5	2.2	.....	1c	0	Calm	.....	0	0	Clear	
San Francisco, California	29.96	761.0	30.02	762.5	63	17.2	54	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.18	588.8	29.72	754.9	44	6.7	23	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.09	764.3	30.18	766.6	78	25.6	73	Calm	0	0	.....	1k	0	Calm	.....	0	0	Clear	
Shreveport, Louisiana	29.71	754.6	29.92	760.0	74	23.3	86	SE	6	2.7	.....	2k	2ks	S	S	0.40	10.2	Fair	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.30	744.2	29.94	760.5	72	22.2	83	S	12	5.4	.....	0	2s	.....	S	Inap.	Inap.	Fair	
Springfield, Massachusetts	29.89	759.2	30.01	762.2	81	27.2	59	Calm	0	0	.....	2cs	0	Calm	.....	0	0	Fair	
Stockton, Texas	26.76	679.7	29.76	755.9	74	23.3	72	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass.	29.92	760.0	29.98	761.5	73	22.8	85	NW	12	5.4	.....	5c	Haze	NW	.....	0	0	Fair	
Toledo, Ohio	29.34	745.2	29.98	761.5	75	23.9	72	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Tucson, Arizona	27.42	696.5	29.97	761.2	71	21.7	29	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	30.05	763.3	30.56	776.2	44	6.7	68	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	28.85	732.8	29.63	752.6	77	25.0	86	SE	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.72	754.9	29.97	761.2	73	22.8	90	E	4	1.8	.....	5k	2ks	SE	E	0	0	Fair	
Virginia City, Montana	24.48	621.8	29.96	761.0	35	1.7	80	Calm	0	0	.....	5ck	0	NE	.....	0.03	0.8	Fair	
Visalia, California	29.55	750.6	29.91	759.7	55	12.8	62	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.97	761.2	30.08	764.0	78	25.6	78	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	62	16.7	41	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.12	765.0	30.19	766.8	74	23.3	76	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.85	656.6	30.21	767.3	34	1.1	61	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	29.94	760.5	29.98	761.5	69	20.6	80	NW	4	1.8	.....	5c	0	Calm	.....	0	0	Fair	
Yankton, Dakota	28.53	724.6	29.78	756.4	57	13.9	94	NW	10	4.5	.....	.....	10s	.....	Calm	0.40	10.2	Cloudy	
Yuma, Arizona	29.72	754.9	29.86	758.4	64	17.8	25	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.01	559.0	.....	.....	55.5	13.1	72	N	1	0.4	.....	8cs;k	.....	.....	.....	0.08	2.0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	78	25.6	82	SE	2.4	1.1	.....	2cs	0	Calm	.....	0	0	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	78	25.6	87	Calm	0	0	.....	8c	2s	Calm	.....	0	0	Fair	James Gall.
Navassa, W. I.	29.87	758.7	29.95	760.7	79	26.1	82	NE	2	0.9	.....	.....	10	.....	NE	1.54	39.1	Raining	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	80	26.7	87	E	.....	.....	2	5k	5ks	E	.....	0	0	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.39	746.5	29.95	760.7	76	24.4	100	N	.....	.....	1	.....	Fog	.....	.....	0	0	Foggy	Francesco J. Cisneros.
Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	SE	.....	.....	.....	2c	1d	NE	SE	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I.	29.95	760.7	29.98	761.5	77	25.0	82	N	1.2	0.5	.....	8cs	0	W	.....	0.16	4.1	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	29.89	759.2	30.04	763.0	31.0	— 0.6	95	N	13	5.8	.....	3ck	0	NW	.....	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.8 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,523 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.05	763.3	78	25.6	86	SE	16	7.2			8		SE	0	0			Cloudy	
§ Navy Yard, Portsmouth, N. H.	29.98	761.5	76	24.4	73	NW	2	0.9			0			0	0			Clear.	
Naval Hospital, Yokohama, Japan	29.99	761.7	67.5	19.7	60	Calm			0		0			0	0			Clear.	
§ Adams, Punta Arenas, Costa Rica	29.97	761.2	79	26.1	86	N			1		5		N					Fair	
§ Alaska, Callao, Peru *	29.99	761.7	63	17.2	94	ESE			1		10					Long	SW	Hazy	
§ Alert, Yokohama, Japan	29.97	761.2	71	21.7	71	Calm			0		0			0	0	Smooth		Hazy	
Alliance, Norfolk, Va.	30.12	765.0	75	23.9	81	SW			1		0			0	0			Clear.	
§ Ashuelot, Shanghai, China	29.87	758.7	70	21.1	85	SE			2		0							Clear	
Colorado, New York, N. Y.	30.02	762.5	79	26.1	66	Calm	0	0			5		Calm	0	0			Misty	
§ Constitution, New York, N. Y.	30.04	763.0	70	21.1	80	Calm	0	0			5		SW					Foggy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.14	765.5	75	23.9	72	W	6	2.7			0			0	0			Clear	
Independence, § Mare I'd, Navy Yard, Cal.	29.98	761.5	67	19.4	100	NNE	4.8	2.1			8		NNE	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	30.30	769 6	47	8.3	92	ENE			2		10					Smooth		Cloudy	
Kearsarge, N. 23° 40′, W. 83° 30′	29.98	761.5	79	26.1	86	E			3		5		E			Mod'ate	ESE	Fair	
§ Lackawana, Acapulco, Mexico †	29.98	761.5	83	28.3	75	W			2–3		5		W					Fair	
§ Marion, S. 45° 38′, W. 60° 05′	29.61	752 1	51	10.6	86	NW			4		5			0	0	Mod'ate	NW	Fair	
§ Michigan, Erie, Pa.	30.03	762.7	79	26.1	70	SW			1		2		S					Hazy.	
§ Monocacy, Shanghai, China	29.84	757.9	70	21.1	85	SE			2		0			0	0			Clear	
§ New Hampshire, Port Royal, S. C.	29.93	760.2	77	25.0	77	SE	5	2.2			2		Calm	0	0			Clear.	
Nipsic, Villafranca, France	30.28	769.1	69	20.6	75	SSW			1		0					Smooth		Blue sky	
§ Onward, Ancon Bay, Peru †	29.97	761.2	64	17.8	89	SSW			1		10		S			Long	W	Cloudy	
§ Palos, Shanghai, China	29.76	755.9	76	24.4	73	ESE			2		5							Fair	
§ Passaic, Washington, D. C.	30.13	765.3	77	25.0	91	W			1		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.90	759.4	63	17.2	72	NNW			2		0					Smooth		Clear	
§ Portsmouth, N. 32° 25′, W. 68° 42′	30.20	767.1	68	20.0	84	WNW			4		2			0	0	Smooth		Clear	
§ Powhatan, N. 37° 34′, W. 76° 13′	30.09	764.3	74	23.3	90	WSW			2		0							Hazy	
§ Richmond, Shanghai, China	29.83	757.7	71	21.7	90	SSE			3		1		SSE					Clear	
§ Rio Bravo, Brownsville, Texas †	29.96	761.0	79	26.1	100	SE	2	0.9			8		SE	0.05	1.3			Cloudy	
§ Saratoga, Lisbon, Portugal	30.06	763.5	70	21.1	70	WSW			3		8		E	0	0			Cloudy	
§ Shenandoah, Montevideo, Uruguay	30.09	764.3	60	15.6	82	NNE			3		2					Mod'ate	NNE	Fair	
§ St. Louis, League Island, Pa.	30.05	763.3	74	23.3	90	Calm	0	0			2			0	0			Clear.	
Swatara, Bangkok, Siam †	29.76	755.9	87	30.6	88	SSW			4		5		Calm			Smooth		Fair	
§ Tennessee, N. 31° 49′, W. 79° 21′	30.19	766.8	74	23.3	100	E	6	2.7			8		E	0	0	Smooth		Cloudy	
Ticonderoga, Yokohama, Japan	30.00	762.0	70	21.1	90	WNW			1		2		Calm			Smooth		Clear	
§ Trenton, Villafranca, France	30.31	769.9	68	20.0	79	Var.			1		0			0	0	None		Clear	
§ Vandalia, New York Harbor, N. Y	30.04	763.0	72	22.2	85	Calm			0		8		Calm					Cloudy	
§ Wabash, Boston, Mass.	29.96	761.0	76	24.4	73	Calm	0	0			2			0	0			Fair	
§ Wachusett, S. 49° 37′, W. 66° 20′	29.22	742.2	48	8.9	92	WNW			6		2		W	0	0	Mod'ate	N	Clear	
Wyoming, Villafranca, France	30.28	769.1	69	20.6	85	S			1		2		S			Smooth	S	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md																			
S. S. Caispian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hbernian, F. Archer, N. 37° 08′, W. 76° 11′	30.09	764.3	68	20.0		WSW			3		0					Smooth		Clear.	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			A. Christie & F. W. Erskine
S. S. Sardinian, J. E. Dutton																			A. D. Air.
S. S. Sarmatian, A. D. Air.																			
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng.*†	29.91	759.7	63	17.2	94	SE			2		10		SE	3 h'rs	3 h'rs			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 49° 16′, W. 24° 54′*†	29.95	760.7	53	11.7	86	W			4		5		W	2 h'rs	2 h'rs	Heavy	W	Squally	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			H. Buckland.
S. S. Scythia, W. H. O. Haine																			
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			C. Undütsch.
S. S. Braunschweig, C. Undutsch,																			S. Risius.
S. S. Leipzig, F. Pfeiffer																			
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 24° 24′, E. 118° 31′††	29.87	758.7	74	23.3	90	NE			4		8		NE			Mod'ate	NE	Cloudy	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 18′, W. 140° 49′††	30.53	775.4	62	16.7	88	SE			3	0		SW		0	0	Smooth	W	Light haze	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 32° 53′, W. 117° 32′††	29.97	761.2	60	15.6		SE			2		0					Light	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Delney, Portland, Oregon†	30.39	771.9	48	8.9		Calm			0									Clear.	

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Champerico, Guatemala†	29.83	757.7	81	27.2	83	ENE			1		5		Calm			Mod'ate	SW	Fair	F. A. Johnston.
§S. S. Australia																			Banneman.
§S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb' S. 14° 58′, W. 170° 35′ . . †.	29.87	758.7	82	27.8	100	ESE			2		8		SE	0	0	Light	SE	Cloudy	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 19° 40′, W. 105° 35′....†	29.94	760.5	75	23.9	100	NE			1-2		8		NE	0	0	Mod'ate	W	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 35° 56′, E. 137° 18′....†	29.96	761.0	69	20.6	80	WSW			4		5		SW			Smooth		Fair	
§ S. S. City of Sidney, H. C. Dearborn S. 33° 27′, E 177° 58′....*†	29.81	757.2	57	13.9		WSW			5		8		WSW	0	0	Smooth		Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 42° 54′, W. 154° 45′...†	30.54	775.7	57	13.9	75	E			2		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 27° 43′, W. 115° 10′....†	29.91	759.7	64	17.8	100	NW			2		10		NW	0	0	Mod'ate	NW	Misty	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J. M Cavarly																			
§ S. S. Idaho, Port Townsend, Washington Ter..†	30.41	772.4	62	16.7		Calm			0		0			0	0				
§ S.S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 50′, W 58° 16′.....†	29.66	753.4	64	17.8		Calm			0		0			Light	Light			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S S. Adriatic, J. W. Jennings,																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 44° 12′, W. 46° 11′..... †	30.04	763.0	46	7.8		E			4		10		SE			Mod'ate	NE	Foggy	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving N. 47° 17′, W. 32° 26′....*†	30.13	765.3	51	10.6		E			2				E	0	0	Light	E	Clear.	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Bangor, Maine.....†	30.01	762.2	72	22.2		Calm			0		0			0	0			Fine	Mchaffey.
Schr Adale Fuller, J. Jorgensen, Satilla river, Georgia....	30.16	766.1	76	24.4	77	E	5	2.2			6k		E	0	0			Fair	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis. Arroyo, Porto Rico, W.I†	29.99	761.7	83	28.3		E			1		5		ESE	Show-ers.	Show-ers.	Mod'ate	SE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 29° 15′, E. 9° 18′.....*†	30.26	768.6	64	17.8		SSE			6		5		SSE	0	0	Mod'ate	SW; SSE	Fair	B. F. Woodbury.
Brigantine George, W. H Champlin, N. 19° 10′, W. 67° 25′.....†	30.15	765.8	78	25.6		ENE			6		10		ENE	Show-ers.	Show-ers.	Mod'ate	E	Rainy	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., BVT. ASSG'D, CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 27, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time

1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.17	766.4				NE			4		0			0	0	Clear	Dr. Ollive.
Nemours			30.16	766.0	74.7	23.7	72	E			3		6			0	0	Cloudy	Metge.
Algiers			30.14	765.6	72.7	22.6	64	W			5		0			0	0	Clear	Nicolas.
La Calle			30.15	765.8	68.9	20.5	81	SSE			1		4			0	0	Cloudy	Fonfrède.
Tunis			30.13	765.3															Jacques.
Sfax			30.23	767.8															Gau.
Saida			30.13	765.3															Bernard.
Tebessa			30.18	766 6	84.4	29.1	13	Calm			0		5			0	0	Cloudy	Watrin.
Geriville					85.1	29.5	54	E			2		1			0	0	Very fair	Brugniaux.
Laghouat			30.12	765.1	85.3	29.6	15	SSE			1		3			0	0	Pretty fair	Suart.
Biskra			30.13	765.4	84.9	29.4	47	E			1		0			0	0	Clear	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.56	750.8	30.08	764.0	82.6	28.1	44	SE			3		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.43	747.4	30.17	766.2	74.5	23.6	39	ENE	8.1	3.6			0			0	0		Dr. Wierzbicki.
Eperies	29.28	743.6	30.12	765.0	76.3	24.6	36	N			2		0			0	0		Julius Mikolik.
Gratz	28.87	733.3	30.08	763.9	74.7	23.7	53	NW			3		0			0	0		Andreas Rospini.
Hermannstadt	28.69	728.7	30.04	763.0	81.1	27.3	36	E			1		2			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.73	729.7	30.00	761.9	81.5	27.5	58	NE			3		1			0	0		The Staff.
Lemberg	29.18	741.1	30.13	765.3	70.9	21.6	53	W			1		2			0	0		Dr. T. Stanecki.
Pola	29.97	761.3	30.08	764.0	76.3	24.6	63	WNW			1		0			0	0		I.R. Hydrographic Office.
Szathmar	29.69	754.0	30.13	765.3	81.0	27.2	39	NW			2		1			0	0		Pet. Pancsics, S. J.
Szegedin	29.81	757.2	30.08	763.9	81.3	27.4	45	S			2		4			0	0		Karl Stancel.
Trieste	30.00	761.9	30.10	764.5	79.3	26.3	60	Calm			0		1			0	0	Fair	P. Busin.
Vienna	29.40	746.8	30.13	765.4	80.1	26.7	40	SE			3		0			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather [illegible] the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon	29.65	753.2	29.85	758.1	79.5	26.4	42	W			4	5		SSW		0.287	7.3		Prof. M. Passau.
Brussels	29.93	760.3	29.96	760.9	71.8	22.1	56	SW			5		3			0.083	2.1		Royal Observatory
Furnes																			M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 26, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Corrected for instru-m'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.68	753.9	29.77	756.1	53.6	12.0		SE	11	4.9			9			0.110	2.79	Overcast	W. Boswell.
Ardrossan	29.78	756.4	29.80	756.9	54	12.2		SW			3		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.63	752.6	29.86	758.4	49.3	9.6		WNW	7	3.1			10					Showery	S. Call.
Bidston (Liverpool Obs)			29.84	757.9	50	10 0		NW	15	6.7			10					Overcast	John Hartnup.
Bolton (Sharples)	29.28	743.7	29.79	756.7	48.0	8.9		NNW	10	4.5			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.42	747.3	29.81	757.2	48.7	9.3	86	NE			2		10			0.28	7.1	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	29.99	761.7	78	25.6		NE			1		8					Overcast	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.67	753.6	29.76	755.9	60.5	15.8		NW			1		10			Blank	Blank	Overcast	H. Todd.
Cardington			29.77	756.1	57.6	14.2		NW			1		10					Raining	John McLaren.
Chatham (School M. E.)	29.69	754.1	29.82	757 4	68.9	20.6		SW			2		7k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	29.80	756.9	29.84	757.9	58	14.4		W			3		8					D. clouds	J. Mac Gowan.
Dover	29 83	757.7	29.86	758.4	61	16.1		SW			5		2					¼ clouded	J. Costello.
Falmouth (Observatory)	29.73	755.1	29.96	761.0	54.8	12.7		NNW			4		7					Overcast	The Staff.
Fort Napier, Natal	27.76	705.1	29.97	761.2	69.2	20.7		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	86	30.0		SW			1		8					D. clouds	
Galway (Queen's College)			29.87	758.7	57	13.9		W			4		6					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.07	763.8	30.12	765.0	73.1	22.8		SW			5		6					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.59	751.6	29.80	756.9	53.1	11.7		WNW			3		10k					Gloomy	D. G. Maclean.
Great Yarmouth	29.69	754.1	29.70	754.4	74	23.3		SW			4		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.63	752.6	29.80	756.9	66.0	18.9		SW			6		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.66	753.4	29.88	758.9	61	16.1		SW			2		7					Showery	Dr. S. E. Hoskins, F.R.S.
Helston	30.17	766.3	30.29	769.4	54	12.2		NW			6	3ck				0.80	20.3	Fine	M. P. Moyle.
Holyhead	29.84	757.9	29.88	758.9	53	11.7		NNW			3		5					D. clouds	John Tilston.
Jersey	29.64	752.8	29.93	760.2	59.0	15.0		SW			4		10					Showery	J. Fisher.
Kew (Observatory)	29.78	756.4	29.81	757.2	65.0	18.3		SW	25	11.2			8					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.53	750.0	29.78	756.4	51.5	10.8		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.97	761.2	30.05	763.3	75	23.9		N			2		0					Blue sky	A. King.
Nairn	29.64	752.8	29.73	755.1	60	15.6		SW			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.04	763.0	80.0	26.7		E			2		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.66	753.4	29.85	758.2	48.8	9.3		N			3		10d		N	0.732	18.59	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.30	744.2	29.82	757.4	47.1	8.4		NW			3		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.57	751.1	29.83	757.7	54	12.2		WNW			1		10					Raining	The Staff, for E. J. Stone, Esq
Plymouth	29.82	757.4	29.90	759.4	57.0	13.9		NW			4		10					Overcast	John Merrifield.
*Roche's Point	29.89	759.2	29.99	761.7	53	11.7		WNW			4		10					Raining	Wm. Kennedy.
St. Ann's Head	29.76	755.9	29.92	760.0	52	11.1		NW			2		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.76	755.9	51.2	10.7		W	10	4.5			1					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.77	756.1	29.84	757.9	69.4	20.8		NE			3		8					D. clouds	Serg't W. H. Lyne.
Sheffield	29.56	750.8	29.84	757.9	49.2	9.6		N			1		10			0.47	11.9	Raining	W. F. Cooper.
Silloth Rectory	29.79	756.7	29.82	757.4	56.4	13.6	69	W			1		10			0.037	0.94	D. clouds	Rev. F. Redford, A.M.
Stonyhurst (Observatory)			29.83	757.7	50.2	10.1		NW	3	1.3			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.61	752.1	29.82	757.4	60.4	15.8		SW			2		10					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.91	759.7	30.11	764.8	58	14.4		NW			6		5					D. clouds	W. Newcombe.
Valencia Observatory)	29.96	761.0	29.99	761.7	54.6	12.6		W	19	8.5			5					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.21	767.3	30.25	768.3	61.0	16.1	60	SSW	14.5	6.5		8	9			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.14	765.5	52.0	11.1	71	S			2		10kn			0.05	1.3		
Leith (Restalrig Park) Se'tl'd			29.81	757.2	54.1	12.3		W			1		10s			0	0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.94	760.5	30.13	765.2	73.4	23.0	56	ESE	11.5	5.1		0	2		SE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.79	756.6	29.88	758.9	49.2	9.6	92	Calm	0	0			4			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.75	755.6	51	10.6		W			6	3	0	W		0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.72	754.9				SW			8	7	3	S		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points, the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather.	Observer
H. M. S. Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore. N. 39° 15′, W. 52° 50′			29.73	755.1	63	17.2		N			6		5			6	N	D. clouds	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German. S. 26° 20′, E. 11° 14′			30.08	764.0	65	18.3		ESE			6		8					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	71.2	21.8	89	Calm			0	9cs				0.91	23.	Cloudy.	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.82	757.3	29.86	758.5	79.2	26.2	44	SSW			4		0						
Faröe	29.73	755.1	29.75	755.6	70.5	21.4	65	WSW			4		5						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.83	757.6	29.87	758.7	36.1	2.3	94	NE			8		2						
Thorshavn (Faröe)	29.67	753.5	29.70	754.4	48.7	9.3	74	NW			3		5						
Vestervig	29.63	752.5	29.72	754.9	69.1	20.6	55	ENE			4		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.48	748.8	30.03	762.8	70.7	21.5	57	SW			3		5km		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	29.82	757.5	29.93	760.1	82.4	28	39	SSW			2		5		NE	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.67	753.6	29.92	760.0	71.2	21.8	62	WNW			3		6kn		W	0	0		Klein, Commandant.
Avignon, Normal School	30.13	765.2	30.21	767.2	81.8	27.4	43	S			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.46	748.2	29.98	761.6	80.6	27.0	43	W			1		5cn			0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.68	753.8	29.93	760.2	75.7	24.3	50	SW			3		8		SW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.19	741.5	30.04	763.1	77.7	25.4	36	SSW			1		0			0	0	Clear	A. Carré, Director.
Bordeaux	29.87	758.8	30.07	763.8	72.5	22.5	53	S			1		8		W	0.004	0.1	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.20	741.8	30.14	765.6	82.0	27.8	35	S			3	c		S	S	0	0		Mariot, Director.
Bourges, Normal School	29.52	749.8	30.05	763.3	77.4	25.2	56	SW			2	5ck			SW	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.76	756.0	30.01	762.2	57.6	14.2	84	NW			2		10		NW	0.049	1.25		Ch. de Kermaree, Dir.
Caen, Normal School	29.79	756.7	29.86	758.5	71.6	22	83	SW			1		5		SW	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.67	753.6	30.07	763.8	74.1	23.4	55	E			1		2	E	W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.67	753.5	29.97	761.2	81.7	27.6	61	SW			2		8		E	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.43	747.5	29.98	761.4	70.2	21.2	82	SE			3		10		SE	0	0	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.71	729.3	30.00	762.1	79.0	26.1	39	W			1		5			0	0		Alluard, Director.
Commercy, Normal School	29.14	740.2	29.96	760.9	78.1	25.6	33	W			4	2ck			W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	29.07	738.3	30.21	767.3	75.6	24.2	36	SW			2		5		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.30	744.1	30.08	762.8	77.4	25.2	51	WNW			2	c				0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.89	759.1	30.10	764.4	64.8	18.2	75	WSW			1		5		WSW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.74	755.5	30.05	763.2	70.7	21.5	54	W			4		5		W	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.3	30.06	763.5	82.6	28.1	46	SSW			2	2c						Slightly cl'dy	M. Cadoret, Director
Lorient, Naval Observatory	29.91	759.8	30.02	762.6	64.8	18.2	74	WSW			4		8	W	SW	0.039	1.00	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.44	747.7	30.02	762.6	82.9	28.3	15	S			3	1c				0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.89	759.1	30.15	765.9	73.6	23.1	43	WSW			1		6		WSW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.97	735.8	29.96	761.0	78.4	25.8	37	SW			3	ck			SW	0	0		Barbier, Director.
Mont-Louis	24.96	634.1	30.20	767.1	64.4	18.0	44	SW	15.0	6.7			6		NW	0	0		M. Cave, for Dr. Fines.
Nice	30.11	764.8	30.15	765.8	73.8	23.2	72	SW			1			SW	SW	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.92	760.0	30.12	765.0	79.3	26.3	39	SW			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.99	761.7	30.10	764.4	68.5	20.3	68	E	15.0	6.7			3	SW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.67	575.7			45.0	7.2							10		SW	0.154	3.9		M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.08	738.5	30.10	764.4	78.4	25.8	35	S			3		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Obs	25.30	642.6			56.7	13.7	62	W			4		8			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.08	764.0	30.11	764.8	69.8	21.0	65	SW			2		5	SW	SW	0	0	½ covered	Lt. E. Decante, Director
Rouen, Normal School	29.85	758.1	29.93	760.3	72.3	22.4	50	SW			1		8		SW	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.89	759.2	29.92	760.0	68.4	20.2	50	SW			4		1	SW	SW	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.82	757.5	29.99	761.7	74.8	23.8	45	SW			3		7	S	SSW	0	0		E. Renou, Director.
Tarbes, Normal School	29.04	737.5	30.11	764.7	79.7	26.5	49	SE											T. Huguet, Director
Toulouse, Observatory	29.43	747.5	30.16	766.0	70.3	21.3	63	SE			1		5			0.236	6.0	Cloudy	B. Baillaud, Dir.
Tours	29.87	758.8	30.07	763.8	71.6	22.0	51	SW			2		10		WSW	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.51	749.6	30.00	762.1	70.9	21.6	50	W			3					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.37	745.9	30.03	762.8	86.0	30.5	34	SW			3		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.10	764.5	30.13	765.2	79.2	26.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.71	754.6			74.5	23.6	55	SW			3		6		SW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.82	757.4	29.84	758.0	69.8	21.0	95	E	9.4	4.2			1			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.97	761.3	85.3	29.6	35	SE			6		0			0	0		Prof. Dr. Hoh.
Berlin	29.80	756.8	29.96	760.9	88.2	31.2	26	SE			6		0			0	0		Prof. Dr. Arndt.
Breslau	29.63	752.5	30.16	766.1	79.9	26.6	31	SE			3		0			0	0		Royal University Obs'y.
Carlsruhe	29.52	749.8	29.92	760.0	84.6	29.2	43	SW			3		0			0	0		Albert Senz.
Cassel	29.28	743.8	29.89	759.2	89.2	31.8	19	SW			4		0			0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.64	752.8	30.00	762.0	86.0	30.0	16	SW			1		0			0	0		Physical Society.
Friedrichshafen	28.61	726.8	29.99	761.7	74.5	23.6	60	SW			2		0			0	0		Chief Telegrapher. Wilhelm.
Hamburg	29.78	756.5	29.85	758.3	84.0	28.9	47	S			1		0			0	0		Dr. Reinhold Kleeman.
Kiel	29.79	756.7	29.81	757.1	79.2	26.2	37	SSW			3		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.07	763.7	30.15	765.7	77.5	25.3	40	SW			5		1	E		0	0		Prof. E. Luther.
Köslin			30.09	764.2	86.5	30.3		S			4		0			0	0		H. Müller.
Leipsic Observatory	29.58	751.2	29.97	761.2	87.1	30.6	26	SSE			4		0			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.72	754.6	29.94	760.5	88.3	31.3	27	ESE			4		0			0	0		Dr. Assmann.
Memel	30.06	763.4	30.10	764.6	70.9	21.6	48	SSW			3	2c							Reinbrecht & Issermann.
Munich	28.22	716.9	30.09	764.3	81.7	27.6	31	Calm			0		1	S		0	0		Dr. C. Lang.
Neufahrwasser	30.08	764.1	30.10	764.5	83.1	28.4	28	SSW			4		0			0	0		A. Lothes.
Neustadt (Palatinate)	29.42	747.3	29.95	760.6	85.3	29.6	47	SW			2					0	0		Reallehrer Dicknether.
Posen	29.83	757.7	30.10	764.6	82.6	28.1	28	S			6		0			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.65	753.0	30.17	766.2	86.7	30.4	24	S			4		0			0	0		Imp. University Observatory.
Stuttgart	29.03	737.3	29.86	758.4	86.0	30.0	29	NW					0			0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.54	724.8	30.11	764.9	84.4	29.1	47	SW	2.7	1.2						0	0		Reallehrer J. Hopfner.
Wustrow	29.86	758.5	29.89	759.1	87.8	31.0	33	S			5		8s			0 079	2.0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.7	29.94	760.4	77.4	25.2		NE			3.0		k					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.57	751.1	29.62	752.4	86.0	30.0	84	SW	35	15.6			1	W				Misty	
Deesa	29.10	739.1	29.55	750.5	103.6	39.8	20	WSW	17.5	7.8			0			0	0	Misty	
Bombay	29.69	754.1	29.73	755.0	86.8	30.4	74	WNW	12	5.4			5		W	0	0	D. clouds	
Poona (Yarrowda)	27.86	707.5	29.68	753.8	85.7	29.8	51	WNW	31	13.8			2		E	0	0	D. clouds	
Belgaum	27.20	690.7	29.70	754.4	79.3	26.3	66	W	12	5.4			9	E	NW	0	0	Threatening	
Lahore	28.69	728.7	29.38	746.4	105.8	41.0	23	Calm	4.1	1.8			0			0	0	Misty	
Roorkee	28.58	725.9	29.44	747.7	97.9	36.6	31	SE	4	1.8			0			0	0	Misty	
Agra	28.92	734.6	29.45	748.1	104.6	40.3	25	SW	5.6	2.5			0			0	0		
Nagpur	28.50	728.8	29.50	749.3	95.7	35.4	29	S	5.2	2.3			6		SW	0.34	8.6	D. clouds	
Jubbulpore	28.20	716.1	29.49	749.0	105.0	40.6	19	NE	4.7	2.1			4			0	0	D. clouds	
Lucknow	29.14	740.3	29.51	749.5	96.2	35.7	57	NE	1.2	0.5			0			0	0	Blue sky	
Allahabad	29.18	741.1	29.48	748.7	98.5	36.9	41	NE	3.0	1.3			0						
Patna	29.32	744.8	29.50	749.3	92.3	33.5	45	NE	1.5	0.7			2	NE	NE	0	0		
Hazaribagh	27.54	699.4	29.50	749.3	85.8	35.4	57	SE	9.4	4.2			2			0	0		
Cuttack	29.48	748.8	29.56	750.9	84.8	29.3	64	S	2.3	1.0			5			0	0	D. clouds	
Calcutta (Alipore)	29.51	749.6	29.64	752.7	88.7	31.5	54	WSW	8.0	3.6			0			0	0	Blue sky	
Goalpara	29.16	740.7	29.56	750.9	82.4	28.0	82	ESE	3.2	1.4			7	NW		0.03	0.8	D. clouds	
Chittagong	29.50	749.3	29.59	751.6	84.9	29.4	76	SE	4.8	2.2			8			0	0	D. clouds	
Sibsagar	29.26	743.1	29.59	751.5	85.3	29.6	76	E	2.5	1.1			7	SW	SW	0.11	2.8	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.09	754.0	30.09	764.2	67.1	30.6	22	SW	1.8	0.8			0			0	0		Prof. Giovanni Clodig.
Milan	29.58	751.2	30.07	763.6	84.6	29.2	31	E	11.9	5.3			1			0	0		Prof. Schiaparelli.
Padua	29.98	761.4	30.08	764.1	81.9	27.7	33	E	3.8	1.7			0			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.19	741.4	30.08	764.1	81.1	27.3	47	SE	2.5	1.1			2			0	0		Prof. P. F. Denza.
Genoa	29.94	760.5	30.13	765.3	71.2	21.8	52	SW	3.8	1.7			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.24	717.2	30.11	764.8	76.3	24.6	37	NW			2		2	NW.		0	0		Prof. D. C. Bruno.
Pesaro	30.05	763.3	30.10	764.5	74.5	23.6	62	N	9.4	4.2			0			0	0		Prof. Luigi Guidi.
Florence	29.83	757 7	30.08	764.1	80.6	27.0	50	W			2		0			0	0		Cav. F. Meucci.
Leghorn	30.06	763.4	30.14	765 5	72.3	22.4	66	W	3.1	1.4			1			0	0		Prof. P. Monte.
Rome	29.92	760.0	30.10	764 4	81.0	27.2	51	W	8.7	3.9			0			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.4	30.08	762.5	78.1	25.6	34	NNW	18.6	8.3			0			0	0		Prof. C. De Giorgi.
Cosenza	29.18	741.1	30.06	763.4	81.3	27.4	63	SE	6.9	3.1			0			0	0		Prof. D. Ot i.
Cagliari	29.99	759.4	30.09	764.2	75.9	24.4	35	S			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.88	759.0	30.14	765.5	73.2	22.9	44	ESE	6.3	2.8			0			0	0		Prof. G. Ciacciatore.
Syracuse	30.00	761.9	30.04	763.0	79.3	26.3	50	E	3.8	1.7			0			0	0		Prof. V.G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.56	750.9	30.07	763.8	76.1	24.5	73	E	1.3	0.6			0			0	0		Prof. F. Brioschi

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.7	19.8	79	WSW	1.8	0.8			0			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.81	757.2	30.01	762.2	66.6	19.2	75	SW	1.2	0.5			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.05	763.3	30.12	765.0	66.9	19.4	73	S	4.4	2.0		0	0			0	0	Fair	The Staff.
Wakayama	30.01	762.2	30.06	763.5	68.6	20.3	61	S	1.1	0.5			6s			0	0	Fair	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.3	30.04	762.9	51.8	11.0	35	Calm			0	0	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.61	599.9			65.3	18.5	35	SSE	Inap.	Inap.		2s	0	S		0	0	Fair	Vicente Fernandez.
Leon	24.35	618.6	29.92	760.0	66.9	19.4	58	NW			1	1c	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.64	752.8	29.90	759.4	70.7	21.5	97	NE			1	1c	1k	Calm	Calm	0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	28.03	584.9	29.90	759.5	60.6	15.9	43	Calm	0	0		9c	0	E		0	0	Hazy	The Staff
Morelia	28.91	607.2			72.7	22.6	35	E			2	4k	0	SE		0	0	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.89	606.9	29.85	758.2	61.9	16.6	37	Calm			0	1c	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.38	593.9	30.08	764.0	57.0	13.9	43	Calm	0	0		1c	0	NE		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.16	613.6	29.94	760.4	71.1	21.7	51	E			1	2	1	W	E	0	0	Clear	G. Barroeta, M. D.
Tacotalpam	29.76	755.8	29.77	756.1	80 6	27.0	89	S			1	3	1	E	W	0	0	Fair	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.53	572.3	30.16	766.0	61.9	16.6	40	Calm			0	1c	0	Calm		0	0	Clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.87	758.7	29.87	758.7	67.6	19.8		W			5					0	0		
Groningen	29.71	754.6	29.76	756.0	80.4	26.9		S								0	0		
Helder	29.78	756.3	29.78	756.3	65.5	18.6		SSW			5					0	0		
Hellevoetsluis	29.82	757.5	29.82	757.5	69.8	20.7	58	WSW			6					0	0		
Utrecht	29.77	756.1	29.82	757.3	85.5	29.7	42	SW			4		2					Lt'ly cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; they do not give the humidity; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.76	755.9	29.82	757.3	57.2	14.0	63	S	6.0	2.7	.....	.....	4	.....	.....	0.276	7.0	.....	
Brönö	29.57	751.0	29.61	752.0	48.9	9.4	69	SW	27	12	.....	.....	8	.....	.....	0	0	.....	
Christiania	29.67	753.7	29.82	757.4	57.0	13.9	69	SSW	18	8	.....	.....	10	.....	.....	0	0	.....	
Tromsö	29.48	748.7	29.53	750.1	48.6	9.2	57	SW	9	4	.....	.....	8	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.07	763.8	30.28	769.1	67.3	19.6	86	NNW	.....	.....	2	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.21	741.8	30.19	766.8	69.8	21.0	54	E	4.2	1.9	.....	.....	7	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.17	766.2	30.25	768.4	66.2	19.0	70	SW	8.0	3.6	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.90	759.4	30.25	768.4	68.2	20.1	64	SE	2.5	1.1	.....	.....	9	.....	.....	0.008	0.2	.....	The Staff.
Ponta Delgada (Azores)	30.21	767.3	30.28	769.1	69.1	20.6	73	SE	4.9	2.2	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Sea or swell: Height scale 0-9	Sea or swell: Direction form—	Rain-fall.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. S. 10° 19′, E. 13° 20′	.....	.....	29.93	760.2	74.8	23.8	.....	WNW	.....	.....	1	.....	2	.....	WNW	2	WNW	.....	D. clouds. C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello	.....	.....	29.93	760.3	69.8	21.0	.....	NW	.....	.....	2	.....	1	.....	W	2	NW	.....	D. clouds. A. Tito da Silva, Q. M.
Mossamedes, Benguela	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tejo, J. M. T. Guimaraes,	.....	.....	29.93	760.2	82.4	28.0	.....	SE	.....	.....	3	.....	10	.....	SSE	2	SSE	3	Squally. J. G. Felgos, 2nd Lieut.
Macao, China	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Archangel	29.70	754.4	29.72	754.9	47.7	8.7	80	WNW	18	8	.....	.....	2cs	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.97	761.1	29.88	759.0	61.7	16.5	72	W	7	3	.....	.....	9s;n	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Barnaul	29.24	742.7	29.72	754.8	71.1	21.7	54	SSW	18	8	.....	.....	9	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.84	757.9	30.08	763.9	64.9	18.3	46	WSW	11	5	.....	2c	.....	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.39	721.2	29.34	745.3	47.1	8.4	78	WSW	22	10	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.19	741.3	29.45	748.0	56.3	13.5	54	WSW	13	6	.....	.....	5kn	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	30.02	762.6	30.04	763.1	73.0	22.8	72	N	2	1	.....	.....	1	.....	.....	.....	.....	Light clouds	Lagorio.
Kieff	29.45	748.1	30.07	763.7	65.7	18.7	28	NW	9	4	.....	.....	0	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.12	739.7	29.59	751.5	55.9	13.3	88	WNW	7	3	.....	.....	4	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.72	755.0	29.93	760.1	71.8	22.1	27	NW	13	6	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.17	740.9	29.72	755.0	44.2	6.8	88	N	13	6	.....	.....	10s	.....	.....	.....	.....	Raining	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	30.03	762.7	30.10	764.5	75.6	24.2	47	NNW	18	8	.....	.....	4k;ks	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.85	758.3	29.94	760.5	37.9	3.3	83	NE	9	4	.....	.....	10n	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.77	756.1	29.91	759.7	74.5	23.6	66	SE	4	2	.....	.....	3cs	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.99	761.8	30.01	762.2	56.1	13.4	47	WNW	18	8	.....	1ck	.....	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.60	726.5	30.14	765.6	68.4	20.2	55	Calm	0	0	.....	.....	5	.....	.....	.....	.....	Light clouds	Teich, A. M.
Tiflis	28.65	727.7	30.01	762.3	75.4	24.1	39	S	4	2	.....	.....	2c	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.78	756.5	30.19	766.8	75.7	24.3	35	Calm	0	0	.....	1c	.....	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.79	756.7	30.20	767.1	66.6	19.2	38	WSW	2	1	.....	.....	7	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Yeniseisk	29.35	745.5	29.62	752.4	73.9	23.3	37	SSW	11	5	.....	.....	9	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	69.8	21	67	E	3.2	1.44	.....	.....	1	.....	.....	0	0	Hazy	Antonio Rave, Director
Bilbao, Met. Obs'y	30.11	764.7	30.16	766.1	70.5	21.4	67	NW	3.3	1.49	.....	2	1	SW	.....	0.150	3.8	Almost clear	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.22	691.4	.....	.....	64.4	18.0	71	SW	18.6	8.30	.....	.....	7	.....	.....	0.157	4.0	Cloudy	Domingo Martinez Perez.
Madrid, Royal Observatory	27.96	710.2	30.13	765.2	73.2	22.9	49	W	8.9	4.00	.....	0	3	.....	.....	0.024	0.6	Clouds	The Staff.
Murcia, Met. Obs'y	29.97	761.1	30.11	764.7	86.2	30.1	52	SE	3.2	1.42	.....	2	3	NE	.....	0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.25	742.9	30.13	765.4	63.5	17.5	79	SW	10.6	4.7	.....	.....	9	.....	.....	0.185	4.7	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.90	759.4	29.96	761.1	77.3	25.2	81	E	6.7	3.0	.....	6ck;cs	2s;k	W	.....	0.661	16.8	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.77	756.2	29.82	757.5	86.1	30.1	74	ENE	1.5	0.7	.....	.....	9kn	.....	E	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.09	764.3	30.19	766.8	71.4	21.9	69	WNW	12.7	5.7	.....	3	2	NW	NW	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	75.9	24.4	95	E	0	0	.....	2s	4k	E	E	0.010	0.25	Cloudy	Enrique Udes, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 665.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.6	29.71	754.6	44.2	6.8	.....	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.65	753.2	29.71	754.5	59.0	15.0	58	SW	.....	.....	4	.....	9	.....	.....	0.098	2.5	.....	
Hernosand	29.63	752.6	29.68	753.9	68.4	20.2	80	S	.....	.....	2	.....	3	.....	.....	0	0	.....	
Stockholm	29.70	754.4	29.88	758.9	73.0	22.8	43	SSW	.....	.....	2	.....	7	.....	.....	0.028	0.7	.....	
Wisby	29.83	757.6	29.89	759.1	66.2	19.0	63	SW	.....	.....	6	.....	5	.....	.....	0.024	0.6	.....	
Sub-Series.																			
Upsala	29.74	755.3	29.82	757.5	70.2	21.2	48	WSW	14.5	6.5	.....	.....	10	.....	.....	0.000	0.01	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction com-	fall. Rain-		
Barque Australia	.....	.....	.....	.....	J. P. Pahlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	727.7	30.00	761.0	82.4	28.0	21	SW	.....	.....	4	.....	5	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.43	722.1	29.97	761.2	84.9	29.4	46	W	.....	.....	4	.....	1	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.1 mm.; Thermometer, +0.8 Cent. Relative Humidity, —35 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.91	759.7	65.5	18.6	62	N	22	10.0	.....	.....	3	.....	N	0.047	1.2	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.11	764.9	76.1	24.5	.....	W	.....	.....	1	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.93	760.1	77.5	25.3	65	SW	.....	.....	3	c	9s	.....	SW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	55.0	12.8	.....	NE	1	0.4	.....	5k	0	.....	.....	0	0	Fair	Hon. J. Ferguson.
Chatham, N. B.	29.56	750.8	29.62	752.3	64.7	18.2	90	SW	9	4.0	.....	7ck	0	SW	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.69	754.1	29.73	755.1	52.3	11.3	86	S	12	5.4	.....	0	8s	.....	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.56	750.8	29.74	755.4	75.7	24.3	66	W	.....	.....	3	0	7s	.....	.....	0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.48	748.8	29.64	752.8	55.0	12.8	.....	E	.....	.....	1	5cs	0	.....	.....	0	0	Fair	H. A. Johnson.
Father Point, Quebec	29.59	751.6	29.62	752.3	49.5	9.7	86	NW	5	2.2	.....	4k	2ks	.....	.....	0	0	Clearing	J. McWilliams.
Fredericton, N. B.	29.65	753.1	29.71	754.6	66.0	18.9	69	S	4	1.8	.....	2c	0	.....	.....	0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.13	739.9	29.97	761.2	39.2	4.0	86	N	8	3.6	.....	2cs	4ks	N	.....	0.950	24.13	Fair	James Stewart.
Granton, Ontario	28.80	731.5	29.84	757.9	74.0	23.3	72	SW	.....	.....	1	2cs	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.73	755.1	29.86	758.4	44.7	7.1	90	SE	6	2.7	.....	.....	Fog	.....	.....	0	0	Foggy	A. Allison.
Hamilton, Ontario	29.49	749.0	29.86	758.4	74.8	23.8	75	S	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.48	748.8	29.80	756.9	64.3	17.9	78	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.78	756.4	29.82	757.4	52.7	11.5	73	SW	7	3.1	.....	.....	9n	.....	.....	0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.55	750.6	29.74	755.4	73.6	23.1	65	SW	16	7.2	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.62	752.3	29.66	753.4	35.0	1.7	97	N	.....	.....	4	.....	10n	.....	.....	Inap.	Inap.	Raining	J. R. Nason.
Norwood, Ontario	29.12	739.6	29.78	756.4	74.7	23.7	65	W	11	4.9	.....	4k	0	W	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.11	739.4	29.78	756.4	64.5	18.1	92	S	9	4.0	.....	1ck	5ks	W	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.10	739.1	29.80	756.9	74.7	23.7	65	W	.....	.....	1	3k	0	.....	.....	0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.24	742.7	29.91	759.7	63.1	17.3	94	S	8	3.6	.....	7ck	0	SW	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.28	743.7	29.90	759.4	68.0	20.3	90	SW	4	1.8	.....	7ck	0	W	.....	0.01	0.3	Cloudy	M. Payne.
Quebec, Quebec	29.38	746.2	29.68	753.9	69.0	20.6	85	NW	.....	.....	1	0	Haze	.....	.....	0	0	Hazy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.27	743.4	29.71	754.6	63.0	17.2	80	W	1	0.4	.....	2c	6ks	SW	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.62	752.3	29.78	756.4	54.0	12.2	86	S	10	4.5	.....	.....	9ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.09	738.9	29.76	755.9	73.1	22.8	66	SW	14	6.3	.....	5cs	0	.....	.....	0	0	Fair	K. Stewart.
Stratford, Ontario	28.62	726.9	29.84	757.9	69.8	21.0	78	W	8	3.6	.....	1cs	2s	W	.....	0.076	1.93	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.78	756.4	29.82	757.4	53.0	11.7	80	SW	6	2.7	.....	.....	10s	.....	.....	0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.50	749.3	29.86	758.4	69.0	20.6	81	SW	8	3.6	.....	4ck	2ks	W	.....	0	0	Fair	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.83	732.3	29.83	757.7	75.5	24.2	67	SW	17	7.6	.....	1c	1ks	W	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.64	752.8	29.70	754.4	59.6	15.3	82	SE	8	3.6	.....	4ck	0	S	.....	Inap.	Inap.	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.67	753.6	29.92	760.0	49	9.4	85	N	0	0	.....	5k	5s	.....	.....	0	0	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.80	756.9	48.2	9.0	.....	NW	.....	.....	2	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.82	757.4	29.90	759.4	80	26.7	62	S	7	3.1		0	0			0.55	14.0	Clear.	
Alpena, Michigan	29.10	739.1	29.70	754.4	70	21.1	80	SW	8	3.6		8k	0	SW		0	0	Fair.	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.96	735.6	30.07	763.8	68	20.0	84	E	6	2.7			10s		Calm	0	0	Cloudy	
Atlantic City, New Jersey	29.96	761.0	29.97	761.2	79	26.1	74	SW	5	2.2		5c	Haze	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.98	761.5	30.17	766.3	72	22.2	80	SE	1	0.4		1cs	0	Calm		0	0	Clear.	
Baltimore, Maryland	29.94	760.5	29.99	761.7	83	28.3	60	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	81	27.2	70	W	9	4.0		2c	0	Calm		0	0	Clear.	
Bismarck, Dakota	28.24	717.3	30.09	764.3	48	8.9	85	NW	8	3.6		0	0			0.19	4.8	Clear	
Boerne, Texas	28.40	721.3	29.64	752.8	74	23.3	95	S	6	2.7		0	5ks		S	0	0	Fair	
Boise City, Idaho	27.39	695.7	30.35	770.9	48	8.9	56	SE	2	0.9		0	0			0	0	Clear.	
Boston, Massachusetts	29.73	755.1	29.87	758.7	82	27.8	87	W	11	4.9		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.66	728.0	29.66	753.4	76	24.4	86	E	10	4.5			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	29.01	736.8	30.02	762.5	42	5.6	74	W	8	3.6			10s		W	0.06	1.5	Cloudy	
Brownsville, Texas	29.75	755.6	29.79	756.7	84	28.9	83	S	4	1.8		0	0			0	0	Clear.	
Buffalo, New York	29.21	741.9	29.88	758.9	65	18.3	78	W	8	3.6		1c	Haze	W	Calm	0	0	Clear.	
Burkes, Arizona					64	17.8	17	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.53	750.0	29.80	756.9	77	25.0	65	S	11	4.9		5c	0	W		Inap.	Inap.	Fair	
Cairo, Illinois	29.63	752.6	30.01	762.2	74	23.3	86	S	6	2.7		8ck	2s	Calm	Calm	0	0	Cloudy	
Campo, California	27.39	695.7	29.96	761.0	36	2.2	80	E	3	1.3		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.08	764.0	30.09	764.3	74	23.3	81	W	15	6.7		0	0			0	0	Clear.	
Cape Henry, Virginia	30.02	762.5	30.04	763.0	76	24.4	69	SW	9	4.0		0	Haze		Calm	0	0	Clear.	
Cape Lookout, N. Carolina	30.12	765.0	30.13	765.3	74	23.3	81	W	18	8.0		0	Haze		Calm	0	0	Clear	
Cape May, New Jersey	29.94	760.5	29.97	761.2	73	22.8	81	SW	7	3.1		2c	0	SW		0	0	Fair	
Castroville, Texas	29.05	737.9	29.72	754.9	80	26.7	74	S	6	2.7			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.05	763.3	30.07	763.8	75	23.9	81	E	15	6.7		8ck	0	SE		0.22	5.6	Fair	
Charleston, South Carolina	30.09	764.3	30.14	765.5	77	25.0	65	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.28	743.7	30.06	763.5	74	23.3	68	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.30	744.2	30.08	764.0	71	21.7	75	NE	3	1.3		2k	0	S		0	0	Fair	
Cheyenne, Wyoming	24.25	615.9	30.19	766.8	36	2.2	61	W	2	0.9		0	0			0.01	0.3	Clear.	
Chicago, Illinois	29.20	741.7	29.86	758.4	66	18.9	89	SW	10	4.5			10n		SW	0.74	18.8	Light rain	
Chincoteague, Virginia	29.99	761.7	30.01	762.2	72	22.2	90	SW	6	2.7		1c	0	Calm		0	0	Clear	
Cincinnati, Ohio	29.39	746.5	30.01	762.2	75	23.9	68	S	6	2.7		8k	0	W		0	0	Fair	
Cleveland, Ohio	29.23	742.4	29.92	760.0	75	23.9	56	S	10	4.5		2ck	1ks	Calm	SW	0	0	Fair	
Coleman City, Texas	28.03	711.9	29.59	751.6	76	24.4	73	SE	6	2.7		0	0			0	0	Clear	
Columbus, Ohio	29.16	740.7	29.97	761.2	71	21.7	75	S	3	1.3		5k	2s	SW		Inap.	Inap.	Fair	
Concho, Texas	27.94	709.7	29.52	749.8	75	23.9	77	SE	10	4.5		5k	0	S		0	0	Fair	
Corsicana, Texas	29.45	748.0	29.90	759.4	74	23.3	86	S	4	1.8		0	8s		Calm	0	0	Cloudy	
Davenport, Iowa	29.36	745.7	29.99	761.7	56	13.3	60	NW	14	6.3			10s		W	1.44	36.6	Cloudy	
Dayton, Washington T'y					53	11.7	79	SE			1	5c	0	NW		0	0	Fair	
Deadwood, Dakota	25.54	648.7			45	7.2	39	Calm	0	0		0	0			0.27	6.9	Clear.	
Decatur, Texas	28.73	729.7	29.85	758.2	72	22.2	83	SE	13	5.8		5k	0	SE		0.45	11.4	Fair	
Delaware Breakwater, Del.	29.95	760.7	29.97	761.2	74	23.3	76	SW	10	4.5		0	Haze			0	0	Clear	
Denison, Texas	29.19	741.4	29.95	760.7	68	20.0	100	W	10	4.5			10n		W	0.60	15.2	Light rain	
Denver, Colorado	25.02	635.5	30.24	768.1	42	5.6	83	W	4	1.8			10s		Calm	0.08	2.0	Cloudy	
Des Moines, Iowa	29.21	741.9	30.09	764.3	51	10.6	72	N	5	2.2		8cs	0	W		0.99	25.1	Fair	
Detroit, Michigan	29.22	742.2	29.86	758.4	68	20.0	79	SW	4	1.8		8cs	0	W		0.02	0.5	Fair	
Dodge City, Kansas	27.58	700.0	29.86	758.4	52	11.1	66	NE	22	9.8		10ck	0	E		Inap.	Inap	Cloudy	
Dubuque, Iowa	29.29	744.0	29.98	761.5	52	11.1	54	NW	9	4.0		8c	0	N		0.68	17.3	Fair	
Duluth, Minnesota	29.21	741.9	29.88	758.9	45	7.2	84	W	12	5.4		10k	0	W		0	0	Cloudy	
Eagle Pass, Texas	29.06	738.1	29.75	755.6	76	24.4	86	SE	6	2.7			10s		Calm	0	0	Cloudy	
Eastport, Maine	29.70	754.4	29.76	755.9	54	12.2	74	S	10	4.5		2cs	Haze	W	Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.23	742.4	29.90	759.4	76	24.4	56	S	8	3.6		0	5ks		SW	0	0	Fair	
Escanaba, Michigan	29.05	737.9	29.67	753.6	60	15.6	65	W	10	4.5		5c	0	SW		0.70	17.8	Fair	
Florence, Arizona	28.37	720.6	29.97	761.2	56	13.3	63	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.99	634.7	30.44	773.2	33	0.6	51	N	2	0.9		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.02	711.7	29.88	758.9	40	4.4	100	Calm	0	0		2cs	Fog	NW	Calm	0.10	2.5	Foggy	
Fort Custer, Montana	26.95	684.5			53	11.7	54	SW	6	2.7		5k	0	W		0	0	Fair	
Fort Davis, Texas	25.10	637.5	30.06	763.5	67	19.4	74	Calm	0	0		1cs	0	SW		0	0	Clear	
Fort Elliot, Texas	26.90	683.2	29.98	758.6	59	15.0	88	NE	40	17.9			10s		NE	1.22	31.0	Cloudy	
Fort Gibson, Indian Ter.	29.42	747.3	29.94	760.5	66	18.9	95	E	8	3.6			10s		SW	0.60	15.2	Cloudy	
Fort Grant, Arizona	25.13	638.3	29.93	760.2	54	12.2	10	N	10	4.5		0	0			0	0	Clear.	
Fort Griffin, Texas	28.61	726.7	29.83	757.7	67	19.4	89	Calm	0	0		0	5s		Calm	1.18	30.0	Fair	
Fort Keogh, Montana	27.36	694.9			48	8.9	85	Calm	0	0		0	0			Inap.	Inap.	Clear	
Fort McKavett, Texas	27.59	700.8	29.40	746.7	74	23.3	81	SE	10	4.5		0	1s		S	0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	28.21	716.5			45	7.2	76	W	4	1.8		0	0			0.08	1.5	Clear	
Fort Verde, Arizona					45	7.2	46	N			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.85	758.2	29.89	759.2	80	26.7	82	SE	4	1.8		0	5ks		S	0	0	Fair	
Grand Haven, Michigan	29.20	741.7	29.83	757.7	64	17.8	83	SW	18	8.0		10k	0	SW		0.08	2.0	Cloudy	
Helena, Montana					45	7.2	68	SW	2	0.9		0	0			0	0	Clear.	
Henrietta, Texas																			
Indianapolis, Indiana	29.20	741.7	29.94	760.5	73	22.8	81	W	2	0.9		2k	0	SW		0.70	17.8	Clear	
Indianola, Texas	29.84	757.9	29.87	758.7	80	26.7	87	S	5	2.2			10ks		S	0	0	Cloudy	
Jacksboro, Texas	28.76	730.5	29.86	758.4	65	18.3	94	SE	14	6.3			10s		SE	1.75	44.5	Cloudy	
Jacksonville, Florida	30.08	764.0	30.11	764.8	77	25.0	65	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.36	745.7	29.96	761.0	59	15.0	82	N	12	5.4			10s		Calm	1.80	45.7	Cloudy	
Key West, Florida	29.96	761.0	29.99	761.7	78	25.6	78	E	14	6.3			10s		E	0	0	Cloudy	
Kittyhawk, North Carolina	30.07	763.8	30.09	764.3	75	23.9	68	W	14	6.3		0	0			0	0	Clear	
Knoxville, Tennessee	29.13	739.9	30.10	764.5	70	21.1	80	SE	2	0.9		0	2ks		Calm	0	0	Fair	
La Crosse, Wisconsin	29.24	743.2	29.99	761.7	60	10.0	72	W	8	3.6		0	0			0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	59	15.0	13	N	1	0.4		0	5s		Calm	0	0	Fair	
Laredo, Texas	29.33	745.5	29.67	753.6	82	27.8	71	SE	6	2.7		0	5s		SE	0	0	Fair	
Leavenworth, Kansas	29.22	742.2	30.06	763.5	68	14.4	76	N	10	4.5		2k	5s	W	N	0.70	17.8	Fair	
Lewiston, Idaho																			
Little Rock, Arkansas	29.67	753.6	29.97	761.2	71	21.7	95	E	4	1.8			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.60	751.8	29.93	760.2	66	18.9	84	NE	3	1.3		0	0			0	0	Clear.	
Louisville, Kentucky	29.46	748.3	29.99	761.7	75	23.9	72	S	4	1.8		8k;ck	2s	Calm	Calm	Inap.	Inap.	Cloudy	
Lynchburg, Virginia	29.38	746.2	30.02	762.5	80	26.7	51	SW	3	1.3		0	0			0	0	Clear	
Madison, Wisconsin	28.92	734.6	29.89	759.2	54	12.2	74	NW	16	7.2			10s		W	0.56	14.2	Cloudy	
Marquette, Michigan	29.97	761.2	29.64	752.8	57	13.9	52	W	24	10.7		5c	0	W		0	0	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.20	716.3	29.86	758.4	76	24.4	86	SE	6	2.7		2k	5ks	S	S	0.02	0.5	Fair	
Memphis, Tennessee	29.64	752.8	29.97	761.2	74	23.3	81	E	6	2.7		8cs	0	SW		0.30	7.6	Fair	
Milwaukee, Wisconsin	29.11	739.4	29.81	757.2	62	16.7	77	W	18	8.0			10ks		W	0.54	13.7	Cloudy	
Mobile, Alabama	29.94	760.5	29.98	761.5	72	22.2	95	S	5	2.2			10n		Calm	1.11	28.2	Light rain	
Montgomery, Alabama	29.34	757.9	30.06	763.5	73	22.8	85	SE	6	2.7			10ks		SE	0.40	10.2	Cloudy	
Morgantown, West Virginia	29.06	738.1	29.99	761.7	79	26.1	70	Calm	0	0		0	0			0	0	Clear	
Mt. Washington, N. H.	23.83	605.3	30.19	766.8	50	10.0	100	NW	28	12.5			Fog		NW	0.11	2.8	Dense fog	
Nashville, Tennessee	29.54	750.3	30.05	763.3	73	22.8	72	SE	2	0.9		0			S	0	0	Fair	
New Haven, Connecticut	29.82	757.4	29.93	760.2	78	25.6	65	E	3	1.3		0	Haze		Calm	Inap.	Inap.	Dense haze	
New London, Connecticut	29.90	759.4	29.94	760.5	80	26.7	59	SW	3	1.3		les;hz'	Haze	NW;Calm	Calm	0	0	Dense haze	
New Orleans, Louisiana	29.86	758.4	29.92	760.0	75	23.9	90	E	3	1.3			10s		E	1.16	29.5	Cloudy	
Newport, Rhode Island	29.86	758.4	29.91	759.7	71	21.7	71	SW	6	2.7		5ck	0	Calm		0	0	Fair	
New River, North Carolina					74	23.3	76	W			1	0	0					Clear	
New York, New York	29.77	756.1	29.93	760.2	79	26.1	65	Calm	0	0		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	29.99	761.7	30.05	763.3	83	28.3	56	W	2	0.9		0	Sm'e		SW	0	0	Clear	
North Platte, Nebraska	27.31	693.7	29.93	760.2	46	7.8	80	NW	7	3.1		10cs	0	Calm		0	0	Cloudy	
Olympia, Washington Ter.	30.22	767.6	30.26	768.6	48.0	8.9	85	N	1	0.4		8cs	0	W		0	0	Fair	
Omaha, Nebraska	28.99	736.3	30.09	764.3	52	11.1	73	N	4	1.8			10s		W	0	0	Cloudy	
Oswego, New York	29.57	751.1	29.87	758.7	77	25.0	57	SW	9	4.0		0	0			0	0	Clear	
Pembina, Dakota	29.10	739.1	29.94	760.5	39	3.9	73	NW	12	5.4		0	0			1.62	41.1	Clear	
Pensacola, Florida	29.98	761.5	30.02	762.5	76	24.4	86	SE	12	5.4			10s		SE	2.54	64.5	Cloudy	
Philadelphia, Pennsylvania	29.91	759.7	29.96	761.0	80	26.7	70	W	4	1.8		0	Fog		Calm	0	0	Clear	
Phœnix, Arizona	28.63	727.2	30.47	773.9	72	22.2	38	W	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.77	451.4	29.98	761.5	13	—10.6	100	NE	7	3.1			10n		NE	0.80	20.3	Light snow.	
Pilot Point, Texas	29.15	740.4	29.97	761.2	68	20.0	90	SE	13	5.8			10n		SW	1.77	45.0	Light rain	
Ploche, Nevada	24.16	613.6	29.93	760.2	43	6.1	28	N	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.20	741.7	29.97	761.2	71	21.7	85	W	1	0.4		0	0			0	0	Clear	
Port Huron, Michigan	29.20	741.7	29.83	757.7	69	20.6	80	SW	12	5.4		8c	0	W		Inap.	Inap.	Fair	
Portland, Maine	29.75	755.6	29.81	757.3	77	25.0	65	W	10	4.5		0	0			Inap.	Inap.	Clear	
Portland, Oregon	30.20	767.1	30.28	769.1	48.5	9.2	89	Calm	0	0		8cs	0	NW		0	0	Fair	
Portsmouth, North Carolina					75	23.9	77	W	20	8.9		0	0			0	0	Clear	
Prescott, Arizona	24.67	626.6	30.03	762.7	35	1.7	53	NW	1	0.4		0	0			0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.02	762.5	77	25.0	73	E	14	6.3		8ck	0	N		0.01	0.3	Fair	
Red Bluff, California	29.77	756.1	30.13	765.3	61.0	16.1	50	NW	7	3.1		0	0			0	0	Clear	
Rio Grande City, Texas	29.58	751.3	29.79	756.7	80	26.7	82	SE	12	5.4		0	5s		SE	0	0	Fair	
Rochester, New York	29.27	743.4	29.85	758.2	75	23.9	64	SW	9	4.0		1k	0	SW		0	0	Clear	
Roseburg, Oregon	29.72	754.9	30.30	769.6	46	7.8	92	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.97	761.2	30.04	763.0	63	17.2	67	NW	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.38	746.2	29.94	760.5	70	21.1	80	SE	7	3.1			10ks		S	0.04	1.0	Cloudy	
St. Paul, Minnesota	29.14	740.1	29.97	761.2	49	9.4	71	W	14	6.3		0	0			0.02	0.5	Clear	
Salt Lake City, Utah	25.83	656.1	30.16	766.1	45	7.2	46	NE	2	0.9		0	0			0.03	0.8	Clear	
San Antonio, Texas	29.15	740.4	29.82	757.4	76	24.4	91	S	2	0.9		8cs	0	SE		0	0	Cloudy	
San Diego, California	29.90	759.4	29.97	761.2	54	12.2	67	NE	5	2.2			0			0	0	Clear	
Sandusky, Ohio	29.28	743.7	29.92	760.0	74	23.3	68	SW	13	5.8		5c	0	W		Inap.	Inap.	Fair	
Sandy Hook, New Jersey	29.92	760.0	29.95	760.7	81	27.2	67	W	8	3.6		1c	Haze	Calm	Calm	0	0	Fair	
San Francisco, California	30.00	762.0	30.06	763.5	62	16.7	77	NE	2	0.9		0	0			0	0	Clear	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	46	7.8	26	NE	2	0.9		0	8ks		S	0	0	Cloudy	
Savannah, Georgia	30.07	763.8	30.16	766.1	81	27.2	63	S	3	1.3		1k	0	Calm		0	0	Clear	
Shreveport, Louisiana	29.72	754.9	29.94	760.5	71	21.7	85	E	4	1.8			10s		Calm	0	0	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina																			
Socorro, New Mexico																			
Springfield, Illinois	29.30	744.2	29.94	760.5	67.5	19.7	84	W	3	1.3			10s		NW	0.34	8.6	Cloudy	
Springfield, Massachusetts	29.79	756.7	29.90	759.4	77	25.0	73	S	3	1.3		0	0			0.58	14.7	Clear	
Stockton, Texas	26.79	680.4	29.79	756.7	73	22.8	85	SE	12	5.4		5cs	0	Calm		0	0	Fair	
Thatcher's Island, Mass.	29.79	756.7	29.84	757.9	77	25.0	82	SW	10	4.5		Haze	Haze	SW		0	0	Light haze	
Toledo, Ohio	29.24	742.7	29.88	758.9	74	23.3	72	SW	8	3.6		5cs	0			0.08	2.0	Fair	
Tucson, Arizona	27.45	697.2	30.00	762.0	67	19.4	33	S	5	2.2		0	0			0	0	Clear	
Umatilla, Oregon	29.88	758.9	30.38	771.6	53	11.7	61	E	5	2.2		2c	0	N		0	0	Clear	
Uvalde, Texas	28.87	733.3	29.65	753.1	77	25.0	86	SE	6	2.7			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.73	755.1	29.98	761.5	71	21.7	95	E	5	2.2			10n		Calm	0.01	0.3	Light rain	
Virginia City, Montana	24.46	621.3	29.94	760.5	36	2.2	71	SE	1	0.4		0	0			0	0	Clear	
Yuba, California	29.62	752.3	29.98	761.5	58	14.4	61	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.90	759.4	30.01	762.2	80	26.7	74	SW	4	1.8		0	0			0	0	Clear	
Wickenburg, Arizona					70	21.1	44	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.06	763.5	30.14	765.5	76	24.4	73	W	10	4.5		0	0			0	0	Clear	
Winnemucca, Nevada	25.86	656.8	30.22	767.6	38	3.3	54	NE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.87	758.7	29.91	759.7	69	20.6	75	SW	4	1.8		1ck	0	SW		0	0	Clear	
Yankton, Dakota	28.85	732.8	30.15	765.8	52	11.1	79	W	6	2.7		10k	0	W		0	0	Cloudy	
Yuma, Arizona	29.70	754.4	29.84	757.9	72	22.2	19	N	10	4.5		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0			62.0	16.7	67	Calm	0	0		10cs;k	0			0	0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.94	760.5	29.99	761.7	77	25.0	82	Calm	0	0		8cs	0	Calm		0.68	17.3	Cloudy	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.90	759.4	29.91	759.7	79	26.1	87	Calm	0	0		8c	2s	Calm	Calm	0	0	Fair	James Gall.
Navassa, W. I.	29.84	757.9	29.92	760.0	79	26.1	82	E	5	2.2			10		E	0.76	19.3	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	82	27.8	79	E			2	5ck	5k	Calm		0.590	14.99	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.39	746.5	29.93	760.2	77	25.0	94	E			1		10s			0.04	1.0		Francesco J. Cisneros.
Rivas, Nicaragua					77	25		SE				1c	4k	NE	SE	0.20	5.	½ covered	Earl Flint.
Santiago de Cuba, W. I.	29.92	760.0	29.95	760.7	77	25.0	86	NNW	1.2	0.5		8cs				0.21	5.3		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.72	754.9	29.77	756.1	30.5	— 0.8	95	NE	14	6.3		2c	2s	E	E	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.07	763.8	76	24.4	86	SE	22	9.8	.....	.....	10	.....	SE	0	0	.....	.....	Threatening	
§ Navy Yard, Portsmouth, N. H.	29.83	757.7	76	24.4	73	NW	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Clear.	
Naval Hospital, Yokohama, Japan	30.09	764.3	67	19.4	84	Calm	.....	.....	0	.....	Haze	.....	Calm	0	0	.....	.....	Clear.	
§ Adams, Punta Arenas, Costa Rica	29.89	759.2	80	26.7	87	N	.....	.....	1	.....	8	.....	N	.....	.....	.....	.....	Cloudy	
§ Alaska, Callao, Peru *	29.93	760.2	63	17.2	83	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	SW	Misty	
§ Alert, Yokohama, Japan	30.08	764.0	71	21.7	80	Calm	.....	.....	0	.....	2	.....	Calm	0	0	.....	.....	Hazy	
Alliance, Norfolk, Va.	30.05	763.3	76	24.4	77	WSW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Ashuelot, Shanghai, China	29.86	758.4	72	22.2	95	SE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
Colorado, New York, N. Y.	29.94	760.5	72	22.2	85	NE	1	0.4	.....	.....	0	.....	.....	0	0	.....	.....	Misty	
§ Constitution, New York, N. Y.	29.94	760.5	74	23.3	72	W	1	0.4	.....	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.07	763.8	76	24.4	73	SW	7.2	3.2	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
Independence, § Mare I'd, Navy Yard, Cal.	30.06	763.5	60	15.6	??	WSW	1.2	0.5	.....	.....	9	.....	WSW	0	0	.....	.....	Cloudy	
§ Jamestown, Sitka, Alaska *	29.82	757.4	44	6.7	92	WSW	.....	.....	1	.....	10	.....	.....	.....	.....	Smooth	.....	Raining	
Kearsarge, Key West, Fla	29.98	761.5	79	26.1	82	E	.....	.....	4	.....	5	.....	E	.....	.....	.....	.....	Fair	
§ Lackawana, Acapulco, Mexico †	29.99	761.7	82	27.8	83	Calm	.....	.....	0	.....	8	.....	.....	.....	.....	.....	.....	Fair	
§ Marion, S. 47° 53′, W. 60° 35′	29.85	758.2	52	11.1	60	W	.....	.....	2	.....	2	.....	.....	0	0	Mod'ate	W	Clear	
§ Michigan, Erie, Pa.	29.84	757.9	74	23.3	68	S	.....	.....	2	.....	2	.....	S	.....	.....	.....	.....	Clear	
§ Monocacy, Shanghai, China	29.86	758.4	69	20.6	100	ESE	.....	.....	1	.....	5	.....	SE	0	0	.....	.....	Fair	
§ New Hampshire, Port Royal, S. C.	30.11	764.8	76	24.4	68	SSE	6	2.7	.....	.....	2	.....	SSE	0	0	.....	.....	Fair	
Nipsic, Villafranca, France	30.09	764.3	71	21.7	71	S	.....	.....	1	.....	2	.....	.....	.....	.....	Smooth	.....	D. clouds	
§ Onward, Ancon Bay, Peru †	29.95	760.7	63	17.2	80	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Cloudy	
§ Palos, Shanghai, China	29.75	755.6	77	25.0	??	ESE	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
§ Passaic, Washington, D. C.	30.02	762.5	78	25.6	95	SW	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Pensacola, San Francisco, Cal.	30.01	762.2	59	15.0	82	WSW	.....	.....	0–1	.....	1	.....	.....	.....	.....	Smooth	.....	Hazy	
§ Portsmouth, N. 32° 14′, W. 66° 18′	30.10	764.5	70	21.1	85	WNW	.....	.....	3	.....	5?	.....	.....	0	0	Smooth	.....	Clear?	
§ Powhatan, N. 37° 34′, W. 76° 13′	30.03	762.7	75	23.9	86	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§ Quinnebaug, N. 47° 34′, W. 9° 02′	30.10	764.5	55	12.8	62	NNW	.....	.....	3	.....	8	.....	NW	.....	.....	Long	N	Fair	
§ Richmond, Shanghai, China	29.83	757.7	74	23.3	95	SSE	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§ Rio Bravo, Brownsville, Texas †	29.97	761.2	78	25.6	100	SE	2	0.9	.....	.....	2	.....	NE	0	0	.....	.....	Clear	
§ Saratoga, Lisbon, Portugal	30.25	768.3	71	21.7	71	NW	.....	.....	1	.....	2?	.....	Calm	0	0	.....	.....	Cloudy?	
§ Shenandoah, Montevideo, Uruguay	30.09	764.3	60	15.6	94	NNE	.....	.....	3	.....	5	.....	.....	.....	.....	Smooth	.....	Fair	
§ St. Louis, League Island, Pa.	29.98	761.5	74	23.3	95	SW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
Swatara, Bangkok, Siam †	29.75	755.6	85	29.4	92	SSW	.....	.....	2	.....	8	.....	Calm	.....	.....	Smooth	.....	Fair	
Ticonderoga, Yokohama, Japan	30.10	764.5	71	21.7	95	SW	.....	.....	1	.....	2	.....	SW	.....	.....	Smooth	.....	Hazy	
§ Trenton, Villafranca, France	30.16	766.1	73	22.8	63	Calm	.....	.....	0	.....	0	.....	.....	0	0	None	.....	Clear	
§ Vandalia, New York Harbor, N. Y.	29.98	761.5	78	25.6	65	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§ Wabash, Boston, Mass.	29.88	758.9	80	26.7	95	W	4	1.8	.....	.....	10?	.....	.....	0	0	.....	.....	Clear	
§ Wachusett, S. 51° 19′, W. 16° 67′	29.61	752.1	48	8.9	92	NNW	.....	.....	4	.....	5	.....	N; W	0	0	Smooth	.....	Fair	
Wyoming, Villafranca, France	30.12	765.0	69	20.6	65	SSE	.....	.....	1	.....	2	.....	S	.....	.....	Smooth	S	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer,																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, Jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng.....*†	29.88	758.9	58	14.4	94	NE			3		10		NE	3 h'rs	3 h'rs			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 47° 50,' W. 31° 14'...*†	30.24	768.1	54	12.2	87	ESE			4		5		SE	1 h'r	1 h'r	High	N	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson,																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 26° 24', E. 122° 36'.....†	29.85	758.2	77	25.0	91	E			2		8		ENE			Smooth		Cloudy	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 25', W. 146° 11'.....†	30.50	774.7	60	15.6	88	SSE			3		8		SW	0	0	Smooth	S	Cloudy	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, N. 39° 52', W. 124° 12'.....	30.08	764.0	50	10.0	79	NNW			6		0					Very Heavy	NW	Hazy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, San Pedro, Cal.....†	30.02	762.5	60	15.6		NE			3		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, Portland, Oregon.....†	30.25	768.3	46	7.8		NW			1		2		NW					Fair	

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Anerod. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
S. S. Alaska, D. S. Austin, Champerico, Guatemala†	29.81	757.2	79	26.1	87	ENE			1		8		Calm			Mod'ate	SW	Cloudy	F. A. Johnston.
§ S. S. Australia,																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. S. 19° 31′, W. 172° 50′....†	29.87	758.7	78	25.6	82	ESE			2		8		SE	0	0	Light	SE	Cloudy	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 17° 35′, W. 101° 50′....†	29.91	759.7	79	24.1	91	NNE			0–1		8		NE	0	0	Mod'ate	W	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. O. Berry,... N. 32° 16′, E. 132° 54′....†	29.84	757.9	71	21.7	80	SE			3		2		SW					Fair	
§ S. S. City of Sidney, H. C. Dearborn S. 29° 11′, E 178° 55′....*†	29.90	759.4	68	20.0		NNE			3		10		NE	0	0	Smooth		Misty	E. LeSack.
§ S.S. City of Tokio, J. Maury N. 41° 03′, W. 148° 39′...†	30.74	780.8	61	16.1	77	ESE			2		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 31° 12′, W. 117° 38′....†	29.93	760.2	62	16.7	100	W			3		2		Calm	0	0	Small	WNW	Clear	
§ S.S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§ S.S. Granada, J. M Cavarly																			
§ S. S. Idaho, Port Townsend, Washington Ter..†	30.21	767.3	60	15.6		Calm			0		0			0	0			Clear	
§ S.S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 41° 08′, W 47° 26′.....†	29.64	752.8	69	20.6		SE			3		2		SSE	Light		Mod'ate swell	SSE	Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 51° 01′, W. 15° 21′.....†	29.85	758.2	51	10.6		WNW			3		8		NW			Mod'ate	W	Hailing	H. N. Goulden.
S. S. Britanic, H. Perry,... N. 42° 48′, W. 52° 10′.....†	29.90	759.4	52	11.1		N			2		10		NW			Smooth	N	Foggy	J. Jones.
S. S. Celtic, B. Gleadell.....																			
S. S. Republic, P. J. Irving N. 49° 23′, W. 24° 52′....*†	30.32	770.1	50	10.0		N			3				E	0	0	Light	E	Clear	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Mouth of Penobscot river, Maine..†	29.89	759.2	62	16.7		SSW			1		2		SW	0.04	1.0			Fine	Mehaffey.
Schr Addie Fuller, J. Jorgensen, St. Andrew Sound, Ga..	30.13	765.3	76	24.4	64	E	6	2 7			5k		E	0	0			D. clouds	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W.I.†	29.96	761.0	79	26.1		E			3		10		SSE	Heavy	Heavy	Mod'ate	SE	Raining	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 27° 30′, E. 7° 00′.....*†	30.24	768.1	64	17.8		ESE			4		10		SE	0	0	Smooth	SE	Threatening	B. F. Woodbury.
Brigantine George, W. H Champlin, N. 21° 30′, W. 68° 21′.....†	30.16	766.1	79	26.1		ENE			5		8		E	Showers.		Mod'ate	E	Showery	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 28, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.13	765.3				NE			3		1			0	0	Very fair	Dr. Ollive.
Nemours			30.15	765.8	70.5	21.4	78	N			2		5			0	0	Cloudy	Metge.
Algiers			30.19	766.8	71.6	22.0	66	NNE			3		0			0	0	Clear	Nicolas.
La Calle			30.21	767.2	73.4	23.0	66	NNW			2		2			0	0	Fair	Fonfrède.
Tunis			30.12	765.1															Jacques.
Sfax			30.20	767.0															Gau.
Saida			30.12	765.0															Bernard.
Tebessa			30.16	766.0	78.8	26.0	22	ESE			1		5			0	0	Cloudy	Watrin.
Geriville					88.7	31.5	93	WNW			1		1			0	0	Very fair	Brugniaux.
Laghouat			30.10	764.6	89.2	31.8	15	NE			1		9			0	0	Covered	Suart.
Biskra			30.11	764.9	94.3	34.6	32	E			2		5			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.48	748.9	30.00	762.1	83.3	28.5	44	E			2		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.31	744.4	30.04	763.0	79.5	26.4	46	E	6.3	2.8			0			0	0		Dr. Wierzbicki.
Eperies	29.19	741.5	30.03	762.8	78.8	26.0	48	S			2		0			0	0		Julius Mikolik.
Gratz	28.82	732.0	30.01	762.2	76.6	24.8	51	SW			3		0			0	0		Andreas Rospini.
Hermannstadt	28.68	728.5	30.05	763.2	77.0	25.0	32	ESE			2		0			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.69	728.8	29.97	761.3	76.3	24.6	58	WSW			2		5			0	0		The Staff.
Lemberg	29.15	740.4	30.10	764.5	73.0	22.8	40	SE			2		5			0	0		Dr. T. Stanecki.
Pola	29.93	760.3	30.04	763.0	80.6	27.0	46	WNW			1		0			0	0		I.R.Hydrographic Office.
Szathmar	29.64	752.8	30.08	763.9	84.2	29.0	43	SE			3		3			0	0		Pet. Pancsics, S. J.
Szegedin	29.76	755.9	30.02	762.6	82.0	27.8	41	Calm			0		3			0	0		Karl Stancel.
Trieste	29.95	760.8	30.06	763.4	80.6	27.0	52	Calm			0		10			0	0	Fair	P. Busin.
Vienna	29.30	744.3	30.05	763.2	83.3	28.5	34	SSE			3		0			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	30.06	763.5	30.26	768.7	50.9	10.5	80	W			1		10			0.120	3.05	Light rain	Royal Observatory
Furnes	30.26	768.7	30.29	769.8	52.2	11.2	78	WSW			4		10			0.028	0.7		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 27, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.89	759.2	29.99	761.7	47.7	8.7		SSE	11	4.9			6			0.410	10.41	D. clouds	W. Boswell.
Ardrossan	30.08	764.0	30.09	764.3	52	11.1		WNW			4		7					D. clouds	G. Carrick.
Armagh, (Observatory)	30.00	762.0	30.23	767.8	48.6	9.2		W	10	4.5			7			Blank	Blank	D. clouds	S. Call.
Bidston (Liverpool Obs)			30.22	767.6	51.7	10.9		W	34	15.2			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.66	753.4	30.18	766.6	49.4	9.7		W	40	17.9			5					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.77	756.1	30.17	766.3	55.3	12.9	54	W			2		6			0.01	0.3	D. clouds	J. McLandsborough.
Bridgetown, Barbadoes	29.95	760.7	29.98	761.5	82	27.8		NE			1		6					Gloomy	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.12	765.0	30.22	767.6	58.0	14.4		W			3		7					D. clouds	H. Todd.
Cardington			30.21	767.3	57.4	14.1		NW			3		5					D. clouds	John McLaren.
Chatham (School M. E.)	30.11	764.8	30.24	768.1	59.0	15.0		N			1		6k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.16	766.1	30.20	767.1	50	10.0		NW			3		5					D. clouds	J. Mac Gowan.
Dover	30.20	767.1	30.24	768.1	56	13.3		W			4		5					Drizzling	J. Costello.
Falmouth (Observatory)	30.19	766.8	30.42	772.7	56.6	13.3		NW			3		3					D. clouds	The Staff.
Fort Napier, Natal	27.93	709.4	30.14	765.5	57.5	14.2		NW			2		10					Overcast	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.95	760.7	86	30.0		Calm			0		8					D. clouds	
Galway (Queen's College)			30.28	769.1	53	11.7		WNW			4		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean ‖	30.08	764.0	30.14	765.5	72.6	22.6		E			3		7					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.87	758.7	30.07	763.8	51.1	10.6		W			3		5k					D. clouds	D. G. Maclean.
Great Yarmouth	30.18	766.6	30.18	766.6	53	11.7		NW			1		6					Raining	G. T. Watson.
Greenwich (Royal Obs'y)	30.06	763.5	30.22	767.6	62.5	16.9		W			4		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.16	766.1	30.38	771.6	57.5	14.2		NW			4		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.60	777.2	30.72	780.3	59	15.0		NW			4	3ck				0	0	Very fine	M. P. Moyle.
Holyhead	30.22	767.6	30.26	768.6	54	12.2		W			4		1					Blue sky	John Tilston.
Jersey	30.14	765.5	30.43	772.9	56.0	13.3		W			4		2					D. clouds	J. Fisher.
Kew (Observatory)	30.20	767.1	30.24	768.1	61.0	16.1		W	18	8.0			6					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.96	761.0	30.22	767.6	53.5	11.9		W			1		6					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.98	761.5	30.05	763.3	75.4	24.1		N			2		1					Blue sky	A. King.
Nairn	29.85	758.2	29.97	761.2	55	12.8		W			3		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.03	762.7	79.0	26.1		NE			3		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.04	763.0	30.23	767.8	57.7	14.3		WNW			3		7k;ksd		WNW	0.009	0.23	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.69	754.1	30.22	767.6	54.3	12.4		W			3		8					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.03	762.7	30.29	769.4	55	12.8		W			3		5					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	30.28	769.1	30.36	771.1	61.6	16.4		NW			3		4					D. clouds	John Merrifield.
*Roche's Point	30.29	769.4	30.40	772.1	56	13.3		NNW			5		5			Blank	Blank	½ clouded	Wm. Kennedy.
St. Ann's Head	30.17	766.3	30.34	770.6	51	10.6		W			4		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.97	761.2	48.3	9.1		W	17	7.6			1					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.85	758.2	29.92	760.0	65.2	18.4		NNE			2		9			Inap.	Inap.	Misty	Serg't W. H. Lyne.
Sheffield	29.91	759.7	30.19	766.8	57.8	14.3		W			3		3			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	30.11	764.8	30.14	765.5	55.7	13.2	63	W			4		2			0.024	0.61	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.20	767.1	52.2	11.2		W	22	9.8			4					Squally	Rev. S. J. Perry.
Stratfield Turgiss	30.05	763.3	30.27	768.8	57.5	14.2		NW			5		5					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.41	772.4	30.43	772.9	60	15.6		N			6		4					D. clouds	W. Newcombe.
Valencia (Observatory)	30.39	771.9	30.41	772.4	54.8	12.7		W	17	7.6			7			Blank	Blank	D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.93	760.2	29.97	761.2	66.5	19.2	55	NNW	2.3	1.0		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.02	762.5	54.0	12.2	81	S			2		10kn			0.18	4.6	Showery	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.07	763.8	52.8	11.6		W			4		4k			0.01	0.3	Heavy clouds	Andrew Gibb.
Mauritius (Observatory)	29.90	759.4	30.09	764.2	74.0	23.3	70	E	11.0	4.9			9			0	0	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.76	755.9	29.88	758.9	52.5	11.4	97	ESE	3	1.3			10			0.10	2.5	Light rain	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.09	762.0	49	9.4		NW			4	3	3	NW		0	0		J. Youngclause.
North Unst, Shetland I's			29.86	758.4				S			2	3	7	SW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points, the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert,				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Mommewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 39° 10′, W. 48° 45′	4	ESE;N	Misty	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma,				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German. S. 22° 05′, E. 7° 54′			Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra,				Capt. W. P. Hughes.
S. S. Strathleven,				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	69.4	20.8	95	NE			1	9ks	1d			Inap.	Inap.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	30.02	762.5	30.07	763.7	56.1	13.4	65	NW			2		10						
Fanöe	30.08	764.0	30.10	764.5	53.1	11.7	72	W			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.98	761.6	30.03	762.7	45.1	7.3	99	S			6		8						
Thorshavn (Faröe)	29.97	761.2	30.00	762.1	43.9	6.6	76	NE			3		7						
Vestervig	29.96	761.0	30.06	763.4	53.2	11.8	73	SW			4		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.83	757.6	30.38	771.6	62.6	17	43	SW			1		5k		SW	0.047	1.2	Cloudy	Collignon, Director.
Amiens, Normal School	30.22	767.5	30.33	770.3	63.3	17.4	46	NW			3		5		E	0.173	4.4	Cloudy	Vaillant, Director.
Arras, Engineer School	30.04	762.9	30.29	769.4	56.1	13.4	52	NW			4		8kn		NW	0.108	2.75		Klein, Commandant.
Avignon, Normal School	30.08	764.0	30.16	766.0	78.4	25.8	37	N			3		5			0	0	Cloudy	Giraud, Director.
Bar-sur-Seine	29.78	756.5	30.34	770.7	57.0	13.9	64	NE			1		10n		NW	0.079	2.0	Covered	C. Saillard, Director.
Beauvais, Normal School	30.10	764.4	30.32	770.2	61.0	16.1	41	W			3		8		WNW	0.037	0.95	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.44	747.8	30.29	769.3	59.9	15.5	69	WSW			1		10		WSW	0.220	5.6	Covered	A. Carré, Director.
Bordeaux	30.17	766.3	30.37	771.3	66.2	19.0	43	NNW			1		2		NW	0.161	4.1	Slightly cld'y	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.45	747.9	30.38	771.6	62.6	17	47	N			1		n	S	N	0.24	6.		Marlot, Director.
Bourges, Normal School	29.79	756.6	30.34	770.5	60.6	15.9	61	NNW			1		5k		NW	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	30.21	767.3	30.45	773.5	61.5	16.4	61	NW			1		5k		NW	0.020	0.50		Ch. de Rermaree, Dir.
Caen, Normal School	30.23	767.7	30.30	769.6	61.7	16.5	74	NW			1		5		W	0.16	4.	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.86	758.4	30.26	768.7	74.5	23.6	54	WNW			1		2		WNW	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch	30.02	762.4	30.34	770.6	58.3	14.6	58	W			3		8		SE	0.047	1.2	Very cloudy	Jadot, Director
Chartres, Normal School	29.73	755.1	30.28	769.2	64.4	18	90	SE			3		3		SE	0.20	5.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.97	735.8	30.32	770.2	60.8	15.7	64	N			2		10		W	0.134	3.4		Alluard, Director.
Commercy, Normal School	29.43	747.6	30.29	769.4	57.6	14.2	61	W			4		kn	W	W	0.240	6.1		Dr. Coullet, Director.
Commune de Gréasque*	29.04	737.7	30.19	766.7	74.5	23.6	37	NW			3		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.48	748.7	30.23	767.7	69.1	20.6	62	WNW			2		ckn			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	30.20	767.1	30.41	772.5	65.5	18.6	52	NW			1		8		NW	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	30.08	764.0	30.39	771.8	62.1	16.7	43	NNW			3		5		NW	0.012	0.3	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.45	747.9	30.35	770.9	62.1	16.7	72	W			1		10n		E			Covered	M. Cadoret, Director
Lorient, Naval Observatory	30.35	770.8	30.46	773.6	62.6	17.0	73	SW			6		5		N	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.67	753.6	30.28	769.1	68.2	20.1	54	N			1		5		NW	0.047	1.2	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.85	758.2	30.11	764.9	79.2	26.2	35	WNW			2		1		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.21	741.9	30.25	768.3	58.6	14.8	74	NW			3		n		NW	0.20	5.		Barbier, Director.
Mont-Louis	25.06	636.5	30.30	769.5	55.4	13.0	70	NW	26.2	11.7			3		SW	0	0		M. Cave, for Dr. Fines.
Nice	30.04	762.9	30.07	763.7	73.4	23.0	62	SE			2			S	SE	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.95	760.8	30.15	765.9	79.7	26.5	23	NW			3		2		NW	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	30.13	765.3	30.24	768.0	75.8	23.2	43	NW	22.4	10.0			1	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.76	578.2			38.7	3.7							10		SE	0	0	Covered	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.18	741.1	30.21	767.4	75.2	24	45	N			4	2c		N	N	0	0	Slightly cld'y	M. Tallieu
Puy de Dome (Summit) Obs	25.40	645.1			41.0	5.0	100	NNW			4		10			0.256	6.5	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.39	772.0	30.43	772.8	71.8	22.1	46	WNW			1		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	30.29	769.3	30.37	771.5	63.5	17.5	37	W			2		2		SW	0	0*	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.39	771.9	30.42	772.6	60.4	15.8	57	NW			4		1	NW	NW	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.17	766.3	30.34	770.5	63.7	17.6	35	NW			2		7		WNW	0.031	0.8		E. Renou, Director.
Tarbes, Normal School	29.26	743.1	30.28	769.2	64.4	18	80	SW											T. Huguet, Director
Toulouse, Observatory	29.66	753.4	30.39	772.0	64.6	18.1	71	NNW			4		5			0.035	0.9	Cloudy	B. Baillaud, Dir.
Tours	30.17	766.4	30.37	771.4	66.2	19.0	30	NW			2		3		NNW	0.004	0.1	½ covered	M. de Tastes.
Versailles, Observatory	29.85	758.2	30.34	770.6	61.5	16.4	30	N			3					0.004	0.09		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.47	748.6	30.17	766.2	72.5	22.5	41	NNW			3		5			0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.15	765.7	30.17	766.4	79.3	26.3										0.31	8.		L'Abbé Marchési
Paris, Montsouris Obs'y	30.05	763.3			63.1	17.3	29	WSW			2		3		WNW	0.016	0.4		Marié Davy, Director
Zi-Ka-Wei (near Shanghai)	29.84	757.8	29.83	758.4	68.4	20.2	95	ENE	13.0	5.8			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.27	743.4	30.13	765.3	73.0	22.8	56	W			6		6n	W		0.059	1.5		Prof. Dr. Hoh.
Berlin	29.92	759.9	30.09	764.3	58.6	14.8	98	NW			7		10			0.126	3.2	Raining	Prof. Dr. Arndt.
Breslau	29.49	749.1	30.02	762.6	84.0	28.9	32	SSE			2		1			0	0		Royal University Obs'y
Carlsruhe	29.74	755.5	30.17	766.2	68.4	20.2	74	SW			2		10	SW		0	0		Albert Senz.
Cassel	29.46	748.2	30.07	763.6	63.0	17.2	72	NW			4		6	SE		0.339	8.60		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.80	757.0	30.17	766.2	72.7	22.6	48	SW			2		7			0.031	0.8		Physical Society.
Friedrichshafen	28.73	729.8	30.12	765.1	71.8	22.1	55	SW			5		9	SW		0.461	11.7		Chief Telegrapher Wilhelm.
Hamburg	30.02	762.6	30.10	764.4	53.8	12.1	97	SW			3		10			0.106	2.7		Dr. Reinhold Kleeman.
Kiel	30.07	763.6	30.08	764.0	56.5	13.6	61	NW			2		10			0.007	0.18		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.91	759.7	29.99	761.7	84.7	29.3	28	S			6		0			0	0		Prof. E. Luther.
Köslin			29.99	761.7	72.1	22.3		NW			2		2			0	0		H. Müller.
Leipsic Observatory	29.68	753.8	30.09	764.3	64.6	18.1	75	W			1		10	WSW				Sprinkling	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.91	759.6	30.13	765.4	66.4	19.1	69	ESE			1		9ks	S		0.315	8.0		Dr. Assmann.
Memel	29.07	761.1	30.01	762.3	73.6	23.1	48	S			4–5		0						Reinbrecht & Issermann
Munich	28.33	719.5	30.20	767.1	71.8	22.1	44	W			2		6	W		0	0		Dr. C. Lang.
Neufahrwasser	29.95	760.6	29.96	761.0	86.4	30.2	32	SSE			2		1	N		0	0		A. Lothes.
Neustadt (Palatinate)	29.61	752.2	30.14	765.6	66.6	19.2	76	W			2		10			0.089	2.25		Reallehrer Dicknether.
Posen	29.69	754.1	29.96	761.0	83.5	28.6	40	S			4		2			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.68	753.8	30.21	767.4	68.4	20.2	59	SW			5		9			0.079	2.00	Raining	Imp. University Observatory.
Stuttgart	29.19	741.4	30.06	763.4	70.7	21.5	54	W					9	W		0.035	0.9	Light rain	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.67	728.1	30.25	768.4	70.2	21.2	67	WNW	3.4	1.5			8k		W	0	0		Reallehrer J. Hopfner.
Wustrow	30.08	763.9	30.10	764.5	54.1	12.3	91	NW			3		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.62	752.4	30.00	762.0	77.0	25.0		NE			3.0		5					½ clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.55	750.6	29.60	751.8	85.1	29.5	86	SW	40	17.9			7	WSW		0	0	Misty	
Deesa	29.09	738.8	29.54	750.2	101.2	38.4	32	W	18.8	8.4			0			0	0	Misty	
Bombay	29.69	754.0	29.72	755.0	87.0	30.6	72	WNW	15	6.7			4		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.85	707.5	29.67	753.6	87.8	31.0	47	W	25	11.2			4		E	0	0	D. clouds	
Belgaum	27.20	690.8	29.70	754.3	81.0	27.2	63	SW	12	5.4			8	NE	W	0.22	5.6	Thunder-storm	
Lahore	28.75	730.3	29.46	748.4	96.0	35.6	25	NE	8.1	3.6			0			0	0	Misty	
Roorkee	28.66	728.0	29.56	750.9	74.8	23.8	73	N	6	2.7			10			0.13	3.3	Hail-storm	
Agra	28.91	734.2	29.44	747.8	103.6	39.8	26	W	5.2	2.3			0			0	0		
Nagpur	28.50	723.8	29.49	749.1	99.7	37.6	23	SSE	6.4	2.9			9		SW	0	0	D. clouds	
Jubbulpore	28.15	715.1	29.45	748.0	102.2	39.0	17	NW	6.2	2.8			5			0	0	Misty	
Lucknow	29.10	739.0	29.46	748.2	98.6	37.0	44	ENE	2.3	1.0			0			0	0	Blue sky	
Allahabad	29.15	740.3	29.44	747.8	101.7	38.7	39	E	1.5	0.7			0			0	0	Blue sky	
Patna	29.30	744.3	29.48	748.7	96.8	36.0	43	E	2.0	0.9			2	E	E	0	0		
Hazaribagh	27.53	699.4	29.49	749.0	88.0	31.1	49	ENE	5.9	2.6			0			0	0	Blue sky	
Cuttack	29.44	747.7	29.52	749.7	93.1	33.9	61	Calm	3.0	1.3			4			0	0	D. clouds	
Calcutta (Alipore)	29.53	750.0	29.55	750.5	78.9	26.1	78	NNW	5.0	2.2			10			0.55	14.0	Thunder-showers	
Goalpara	29.17	740.9	29.57	751.2	83.2	28.4	67	SSW	1.7	0.8			0			0	0	Blue sky	
Chittagong	29.52	749.7	29.61	752.0	84.1	28.9	82	SSW	3.7	1.6			2			0	0		
Sibsagar	29.23	742.4	29.56	750.7	88.9	31.6	72	SW	1.4	0.6			6	E	E	0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563,3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.63	752.5	30.03	762.7	86.2	30.1	22	W	1.8	0.8			3			0	0		Prof. Giovanni Clodig.
Milan	29.51	749.5	30.00	761.9	84.9	29.4	40	S	3.8	1.7			1			0	0		Prof. Schiaparelli.
Padua	29.94	760.4	30.04	763.1	82.4	28.0	37	Calm	0	0			4			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.11	739.3	30.00	762.0	81.9	27.7	45	SE	4.9	2.2			5	N		0.236	6.0		Prof. P. F. Denza.
Genoa	29.90	759.4	30.09	764.3	71.6	22.0	70	SW	5.6	2.5			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.16	715.2	30.03	762.8	77.7	25.4	46	NE			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.99	761.7	30.04	762.9	75.2	24.0	74	NE	8.7	3.9			2			0	0		Prof. Luigi Guidi.
Florence	29.80	756.8	30.05	763.2	80.6	27.0	30	W			2		2			0	0		Cav. F. Meucci.
Leghorn	30.04	762.9	30.12	765.0	72.9	22.7	52	WNW	3.8	1.7			3			0	0		Prof. P. Monte.
Rome	29.92	759.9	30.09	764.3	78.3	25.7	46	W	12.5	5.6			1			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.5	30.04	762.9	78.8	26.0	57	NNE	4.3	1.9			2			0	0		Prof. C. De Giorgi.
Cosenza	29.16	740.7	30.04	763.0	84.2	29.0	68	SE	0.7	0.3			0			0	0		Prof. D. Ot[illegible]i.
Cagliari	29.90	759.4	30.09	764.2	74.1	23.4	51	S			2		1	S		0	0		Prof. A. Pacinotti.
Palermo	29.87	758.6	30.12	765.0	72.7	22.6	61	ENE	6.3	2.8			0			0	0		Prof. G. Cincciatore.
Syracuse	29.99	761.7	30.03	762.8	77.9	25.5	62	E	1.3	0.6			0			0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.58	751.2	30.08	764.1	76.6	24.8	68	ESE	3.8	1.7			4	SE		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.9	19.9	83	WSW	1.0	0.5			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.75	755.6	29.94	760.5	66.8	19.3	65	SW	0.3	0.1			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.95	760.7	30.02	762.5	66.9	19.4	86	S	7.7	3.4		0	0			0	0	Fair	The Staff.
Wakayama	29.94	760.5	29.99	761.7	69.6	20.9	82	S	7.5	3.3			5ck;s			0	0	Fair	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.98	634.4	30.04	763.0	51.8	11.0	42	Calm			0	1c	0			0	0	Hazy	Prof. L. Perez.
Guanaxuato	23.61	599.7			69.8	21.0	36	SSW	0.7	0.3		0	8ks		S	0	0		Vicente Fernandez.
Leon	24.35	618.6	29.93	760.3	66.0	18.9	56	NW			1	0	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.63	752.5	29.88	759.0	73.5	23.1	90	Calm			0	3ks	0	SW		0	0	Light fog	F. Quijano, C. E.
Mexico, Central Observatory	23.02	584.8	29.95	760.6	57.7	14.3	46	Calm	0	0		1c	0			0	0	Clear	The Staff
Morelia	23.87†	606.3†			75.0	23.9	34	E			4	6ck	0	NE		0	0	Almost cloudy	M. Fena, M. D.
Pabellon (Aguascallentes)	23.90	607.0	29.85	758.3	61.5	16.4	63	SW			1	3c	0			0	0	Hazy	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.38	593.8	30.00	764.3	56.3	13.5	73	Calm	0	0		1c	0	N		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.14	613.1	30.00	762.1	64.0	17.8	47	SE			1	1	6	W	E	0	0	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.80	756.8	29.81	757.1	80.2	26.8	51	W			1	3	6	N	NW	0.08	2.0	Cloudy	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.53	572.2	30.05	763.2	60.3	15.7	69	Calm			0	0	0			0	0	Fine	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft., Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.25	768.4	30.25	768.4	59.5	15.3		W			4					0.016	0.4		
Groningen	30.11	764.9	30.17	766.3	79.5	26.4		NNW								0.020	0.5		
Helder	30.17	766.2	30.17	766.2	56.1	13.4		WSW			2					0	0		
Hellevoetsluis	30.21	767.4	30.21	767.4	57.2	14.0	57	W			3					0	0		
Utrecht	30.17	766.2	30.21	767.4	56.7	13.7	71	W			2		8			0.087	2.2	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; they do not give the humidity; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Bergen	29.82	757.4	29.87	758.8	50.0	10.0	62	WNW	11.0	4.9			1			0.543	13.8		
Brönö	29.71	754.7	29.75	755.7	46.4	8.0	75	WSW	27	12			10			0.098	2.5	Raining	
Christiania	29.61	752.2	29.76	755.8	62.6	17.0	55	SSW	9	4			8			0.063	1.6		
Tromsö	29.50	749.4	29.56	750.8	48.6	9.2	60	SW	11	5			5			0.067	1.7		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.13	765.2	30.34	770.5	68.4	20.2	92	S			2		6			0	0		Dr. J. A. Sampaio.
Campo Major	29.18	741.1	30.15	765.8	75.6	24.2	39	ENE	3.8	1.7			7			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.17	766.3	30.26	768.5	67.6	19.8	71	SW	3.8	1.7			0			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.90	759.4	30.25	768.3	70.7	21.5	54	N	15.4	6.9			3	WSW		0	0		The Staff.
Ponta Delgada (Azores)	30.27	768.9	30.34	770.7	67.6	19.8	80	SSE	11.2	5.0			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, S. 10° 19′, E. 13° 20′			29.95	760.8	75.7	24.3		W			1				W	2	W		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello																				
Mossamedes, Benguela			29.95	760.8	70.5	21.4		WSW			3		1		W	2			D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.93	760.2	82.6	28.1		SW			3		10		SW	2	SW	6	Squally	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.78	756.5	29.80	757.0	52.7	11.5	65	WNW	13	6			2cs						Capt. Sselliwerstow.
Astrakhan	30.02	762.4	29.93	760.3	61.7	16.5	63	SSE	7	3			8ks;n			blank	Blank		Capt. Wisganow.
Barnaul	29.50	749.2	29.58	751.3	68.5	20.3	34	WNW	4	2			9					Light clouds	Meteorological Obs.
Dorpat	29.75	755.6	29.98	761.4	81.9	27.7	34	WSW	13	6			0						Prof. Dr. Weihrauch.
Ekaterinburg	28.62	726.9	29.56	750.8	54.0	12.2	66	N	9	4			9ks;n						Meteorological Obs.
Irkutsk																			
Kasan	29.47	748.4	29.74	755.3	51.6	10.9	75	NW	16	7			10n						Physical Cabinet.
Kertch	30.02	762.4	30.04	762.9	64.4	18.0	67	NE	7	3			0						Lagorio.
Kieff	29.51	749.6	30.02	762.6	70.2	21.2	39	N	7	3			c;ck	7ks					Physical Cabinet.
Krotkowo*	29.32	744.7	29.79	756.6	49.1	9.5	95	NW	9	4				10					Cand. Fatjanow.
Lugan	29.77	756.2	29.97	761.3	67.6	19.8	38	NNE	13	6				0					Meteorological Obs.
Moscow	29.52	749.8	30.05	763.3	70.0	21.1	50	W	7.8	3.5				6ks					Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.02	762.6	30.10	764.4	75.9	24.4	38	NNE	31	14				0					Kurdakof.
Nikolaievsk, on the Amoor	29.89	759.2	29.98	761.4	45.1	7.3	76	Calm	0	0				10ns					
Nukuss																			
Orenburg																			
Pekin (China)	29.84	757.9	29.98	761.5	71.2	21.8	67	Calm	0	0				6k					Physical Observatory.
St. Petersburg	29.87	758.8	29.89	759.2	75.6	24.2	45	WNW	4	2				0					Central Physical Obs.
Tashkend	28.52	724.5	30.05	763.2	71.4	21.9	45	Calm	0	0				3					Teich, A. M.
Tiflis	28.52	724.3	29.88	759.0	72.0	22.2	55	Calm	0	0				8s					Physical Observatory.
Vladivostock																			
Warsaw	29.67	753.5	30.07	763.7	79.9	26.6	33	SE	13	6				0					Astronomical Obs.
Wilna	29.73	755.2	30.13	765.2	81.3	27.4	47	S	7	3				2				Light clouds	Astronomical Obs.
Yeniseisk	29.63	752.6	29.91	759.6	64.4	18.0	65	W	13	6				10					Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.11	764.8	30.21	767.4	73.4	23	44	SW	4.5	2.03		1c				0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.38	771.7	30.44	773.1	61.3	16.3	78	NE	1.6	0.72			10			0.343	8.7	Rainy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.35	694.6			65.8	18.8	64	NE	13.6	6.09			5			0	0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.98	710.8	30.13	765.3	78.1	25.6	40	N	5.2	2.33		2	0	SW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	30.02	762.5	30.17	766.2	77.9	25.5	59	ESE	7.9	3.52		2	3	NW		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.43	747.6	30.33	770.4	61.7	16.5	68	NNE	26.6	11.9			4			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.90	759.5	29.97	761.2	78.5	25.8	80	ESE	6.3	2.8		1c	3k;ck	NW	E	0.382	9.7	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.75	755.6	29.80	756.9	85.7	29.8	70	SE	4.4	2.0			8			0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	763.1	30.14	765.6	75.4	24.1	71	WNW	8.5	3.8		0	8		NW	0	0		Capt. C. Pulgzon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.89	759.2	29.98	761.5	78.8	26.0	87	SE	0	0		8sk	5kn	SE	SE	0	0	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.62	752.4	29.66	753.4	45.0	7.2		S			2		10			0.236	6.0	Raining	
Umea	29.63	752.7	29.69	754.0	51.4	10.8	89	SW			2		10			0	0		
Hernosand	29.66	753.3	29.71	754.6	56.1	13.4	89	Calm			0		10			0.118	3.0		
Stockholm	29.60	751.9	29.78	756.4	73.6	23.1	38	WSW			6		1			0	0		
Wisby	29.78	756.5	29.84	758.0	73.9	23.3	51	WSW			6		0			0	0		
Sub-Series.																			
Upsala	29.65	753.0	29.73	755.2	70.5	21.4	95	SW	19.2	8.6			0			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pählson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Geneva	28.82	732.1	30.21	767.3	67.8	19.9	50	N			2		8			0	0	Cloudy	The Observatory.
Zurich	28.57	725.6	30.15	765.9	69.8	21.0	62	N			5		7			0.322	8.2	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.5 mm.; Thermometer, +1.6 Cent. Relative Humidity, —6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Constantinople			29.97	761.3	62.6	17.0	70	N	34	15.0			8		NE	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.10	764.5	75.4	24.1		W			1		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.91	759.6	75.9	24.4	56	W			2	2k		E		0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Barometer. Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.					50.0	10.0		SE	3	1.3			10n			Inap	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.54	750.3	29.61	752.1	50.0	13.8	97	E	2	0.9			Fog			0.42	10.7	Foggy	G. A. Blair.
Charlottetown, P. E. Island	29.58	751.3	29.62	752.3	60.1	15.6	94	SE	4	1.8		0	0			0.360	9.14	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.61	752.1	29.80	756.9	61.5	16.4	50	W			3		10s			0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.45	748.0	29.62	752.3	46.0	7.8		E			1		10s			0.11	2.8	Cloudy	H. A. Johnson.
Father Point, Quebec	29.69	754.1	29.71	754.6	45.0	7.2	84	SW	20	8.9			Fog			0.01	0.3	Foggy	J. McWilliams.
Fredericton, N. B.	29.58	751.3	29.64	752.8	69.2	20.7	83	W	1	0.4		9cs	0			Inap.	Inap.	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.01	736.8	29.83	757.7	60.0	10.0	96	SE	4	1.8		2cs	2ks	SE		0	0	Fair	James Stewart.
Granton, Ontario	28.95	735.3	30.04	763.0	55.0	12.8	68	NW			1	0	0			0	0	Clear	James Grant.
Halifax, N. S.	29.56	750.8	29.69	754.1	67.4	19.7	68	SE	2	0.9		0	0			0	0	Clear	A. Allison.
Hamilton, Ontario	29.57	751.1	29.96	761.0	61.5	16.4	75	SW			1	0	0			0.17	4.3	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.54	750.3	29.87	758.7	63.6	17.6	77	SW	4	1.8		8cs	0	Calm		Inap.	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.64	752.8	29.68	753.9	45.1	7.3	83	W	3	1.3		4k	0	W		0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.58	751.3	29.77	756.1	63.8	17.7	56	W	13	5.8			10ks			0	0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.78	756.4	29.81	757.2	32.0	0.0	82	NW			5		10n			0.44	11.2	Snowing	J. R. Nason.
Norwood, Ontario	29.20	741.7	29.88	758.9	59.6	15.3	54	NW	10	4.5		10k	0	NW		0.06	1.5	Cloudy	Rev. T. F. Fotheringham, M.'A
Parry Sound, Ontario	29.29	744.0	29.98	761.5	52.0	11.1	60	W	12	5.4		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.22	742.2	29.95	760.7	59.7	15.4	48	W			4	0	3ks			0.35	8.9	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.30	744.2	29.97	761.2	59.1	15.1	94	NW	4	1.8		6ck	0	W		0.33	8.4	Fair	H. Morgan.
Port Stanley, Ontario	29.36	745.7	30.00	762.0	58.7	14.8	72	W	4	1.8		2ck	0	W		0.01	0.3	Clear	M. Payne.
Quebec, Quebec	29.35	745.5	29.66	753.4	65.0	18.3	84	NW			6	0	2n			0.04	1.0	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.41	747.0	29.86	758.4	52.1	11.2	50	NW	10	4.5		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.52	749.8	29.68	753.9	57.0	13.9	75	S	6	2.7		5ck	0			0.003	0.08	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.33	745.0	30.04	763.0	47.1	8.4	73	NW	10	4.5		1ck	0			0	0	Clear	K. Stewart.
Stratford, Ontario	28.72	729.5	29.99	761.7	52.9	11.6	61	NW	8	3.6		0	0			0.051	1.30	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.64	752.8	29.68	753.9	58.8	14.9	71	Calm	0	0		1ck	0	W		0.03	0.8	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.60	751.8	29.98	761.5	57.8	14.3	42	NW	13	5.8		2cs	0	NW		0.05	1.3	Clear	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M.A
Woodstock, Ontario	28.93	734.8	29.98	761.5	59.2	15.1	59	NW	8	3.6		1k	0			0.03	0.8	Clear	Professor Wolverton.
Yarmouth, N. S.	29.65	753.1	29.72	754.9	63.6	17.6	78	SW	6	2.7		2ck	0	W		0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.66	753.4	29.92	760.0	47	8.3	80	S	0	0			10			0.10	2.5	Fair	John Delany.
St. Pierre, N. F., l'Hôpital Maritime			29.76	755.9	44.6	7.0		NW			2					0	0		The Commandant.

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**
Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.76	755.9	29.83	757.7	75	23.9	64	W	3	1.3		10cs	0	W		Inap.	Inap.	Cloudy	
Alpena, Michigan	29.37	746.0	30.02	762.5	50	10.0	58	NW	4	1.8		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.90	734.0	30.00	762.0	71	21.7	75	SE	7	3.1		10k	0	SE		0	0	Cloudy	
Atlantic City, New Jersey	29.88	758.9	29.89	759 2	68	20.0	90	SW	12	5.4		5c;ck	Haze	SW	Calm	0	0	Fair	
Augusta, Georgia	29.93	760.2	30.13	765.3	72	22.2	76	SE	2	0.9		Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	29.87	758.7	29.92	760.0	79	26.1	62	SW	2	0.9		5ck	Haze	W	Calm	0	0	Fair	
Barnegat, New Jersey	29.84	757.9	29.86	758.4	73	22.8	67	SW	8	3.6		2c	Haze	Calm	Calm	0	0	Hazy	
Bismarck, Dakota	28.04	712.2	29.89	759.2	55	12.8	80	SW	3	1.3		0	0			0	0	Clear	
Boerne, Texas	28.43	722.1	29.71	754.6	65	18.3	100	NE	20	8.9			10n		NE	2.50	63.5	Light rain	
Boise City, Idaho	27.20	690.9	30.16	766.1	52	11.1	54	Calm	0	0		2k	0	W		0	0	Fair	
Boston, Massachusetts	29.64	752.8	29.78	756.4	77	25.0	61	S	11	4.9		5k	0	SW		0	0	Fair	
Brackettville, Texas	28.69	728.7	29.70	754.4	70	21.1	100	NE	19	8.5			10n		Calm	5.36	136.1	Heavy rain	
Breckenridge, Minnesota	28.86	733.0	29.82	757.4	57	13.9	75	S	8	3.6		0	0			0	0	Fair	
Brownsville, Texas	29.76	755.9	29.80	756.9	84	28.9	71	SE	2	0.9		5k	0	SE		0	0	Fair	
Buffalo, New York	29.26	743.2	29.94	760.5	59	15.0	54	NW	5	2.2		5ck	2s	W	Calm	0.49	12.4	Fair	
Burkes, Arizona					57	13.9	25	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.52	749.8	29.79	756.7	66	18.9	59	NW	6	2.7			10s		W	0.01	0.3	Cloudy	
Cairo, Illinois	29.67	753.6	30.06	763.5	64	17.8	89	N	13	5.8			10s		N	1.15	29.2	Threatening	
Campo, California	27.40	696.0	29.97	761.2	36	2.2	80	NW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.06	763.5	30.07	763.8	74	23.3	81	W	19	8.5		2cs	0	Calm		0	0	Clear	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	75	23.9	64	SW	15	6.7		2cs	Haze	SW	Calm	0	0	Clear	
Cape Lookout, N. Carolina	30.09	764.3	30.11	764.8	73	22.8	76	W	16	7.2		5c	0	W		0	0	Fair	
Cape May, New Jersey	29.87	758.7	29.90	759.4	73	22.8	81	SW	10	4.5		2ck	Haze	S	Calm	0	0	Fair	
Castroville, Texas	29.09	738.9	29.75	755.6	78	25.6	82	SE	7	3.1			10s		SE	0	0	Threatening	
Cedar Keys, Florida	30.04	763.0	30.07	763.8	75	23.9	77	E	13	5.8		5ck	0	E		0	0	Fair	
Charleston, South Carolina	30.03	762.7	30.09	764.3	76	24.4	64	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.21	741.9	29.99	761.7	74	23.3	68	SW	5	2.2		2c	Haze	SW	Calm	0	0	Clear	
Chattanooga, Tennessee	29.23	742.4	30.00	762.0	71	21.7	90	Calm	0	0		10cs	Fog	SW	Calm	0.63	16.0	Cloudy	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	39	3.9	55	W	6	2.7		0	0			0	0	Clear	
Chicago, Illinois	29.35	745.5	30.03	762.7	59	15.0	70	W	2	0.9		0	0			0.01	0.3	Clear	
Chincoteague, Virginia	29.93	760.2	29.95	760.7	71	21.7	93	SW	18	8.0		5k	0	SW		0	0	Fair	
Cincinnati, Ohio	29.43	747.5	30.06	763.5	65	18.3	58	N	6	2.7			10ks;s		Calm	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.31	744.5	30 02	762.5	60	15.6	71	W	6	2.7		5c;cs	2s	W	W	1.03	26.2	Fair	
Coleman City, Texas	28.13	714.5	29.73	755.1	68	20.0	95	NE	6	2.7			10s		Calm	0.72	18.3	Cloudy	
Columbus, Ohio	29.21	741.9	30.02	762.5	67	19.4	64	NW	6	2.7		10cs	0	W		0.42	10.7	Cloudy	
Concho, Texas	28.00	711.2	29.60	751.8	68	20.0	90	NE	9	4.0			10ks		NE	Inap.	Inap.	Cloudy	
Corsicana, Texas	29.46	748.3	29.91	759.7	72	22.2	90	NE	4	1.8		0	8s		Calm	0	0	Cloudy	
Davenport, Iowa	29.43	747.5	30.06	763.5	60	15.6	71	W	4	1.8		0	0			0	0	Clear	
Dayton, Washington T'y					53	11.7	86	SW			1	5c	2s	W	SW	0	0	Fair	
Deadwood, Dakota	25.47	646.9			46	7.8	13	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.79	731.3	29.92	760.0	68	20.0	95	NE	10	4.5			10s		NE	0.28	7.1	Cloudy	
Delaware Breakwater, Del.	29.90	759.4	29.92	760.0	74	23.3	72	SW	18	8.0		2ck	0	SW		0	0	Clear	
Denison, Texas	29.18	741.1	29.95	760.7	67	19.4	95	N	4	1.8			10s		Calm	0.31	7.9	Cloudy	
Denver, Colorado	24.82	630.4	30.04	763.0	44	6.7	84	Calm	0	0		0	0			0	0	Clear	
Des Moines, Iowa	29.18	741.1	30.05	763.3	57	13.9	69	W	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.34	745.2	30.00	762.0	57	13.9	75	NW	5	2.2		2cs	0	W		0	0	Clear	
Dodge City, Kansas	27.47	697.7	29.73	755.1	56	13.3	75	Calm	0	0			10s		Calm	0.42	10.7	Cloudy	
Dubuque, Iowa	29.36	745.7	30.04	763.0	59	15.0	59	W	2	0.9		0	0			0	0	Clear	
Duluth, Minnesota	29.29	744.0	29.97	761.2	45	7.2	84	NE	5	2.2		5k	0	W		0.03	0.8	Fair	
Eagle Pass, Texas	29.02	737.1	29.70	754.4	80	26.7	78	SE	12	5.4			10s		SE	0	0	Cloudy	
Eastport, Maine	29.59	751.6	29.65	753.1	64	17.8	73	SW	4	1.8			10ks		W	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.27	743.4	29.96	761.0	62	16.7	61	N	8	3.6			10s		NW	0.37	9.4	Cloudy	
Escanaba, Michigan	29.37	746.0	30.02	762.5	53	11.7	73	Calm	0	0		0	0			0	0	Clear	
Florence, Arizona	28.36	720.3	29.96	761.0	58	14.4	64	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.99	634.7	30.44	773.2	38	3.3	45	E	5	2.2		1ck	0	Calm		0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.72	704.1	29.49	749.0	52	11.1	79	S	8	3.6		5cs	0	W		0.01	0.3	Fair	
Fort Custer, Montana	26.75	679.4			55	12.8	62	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765.3	56	13.3	87	NE	4	1.8			10s		Calm	0	0	Cloudy	
Fort Elliot, Texas	26.99	685.5	29.19	741.4	55	12.8	81	NE	14	6.3			10n		NE	0.12	3.0	Light rain	
Fort Gibson, Indian Ter.	29.45	748.0	29.97	761.2	67	19.4	89	N	4	1.8		10cs	0	NE		0.02	0.5	Cloudy	
Fort Grant, Arizona	25.13	638.3	29.93	760.2	54	12.2	15	E	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.70	729.0	29.93	760.2	68	20.0	90	NE	4	1.8			10s		Calm	2.11	53.6	Cloudy	
Fort Keogh, Montana	27.05	687.1			59	15.0	33	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.63	701.8	29.46	748.3	69	20.6	90	E	14	6.3			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	27.79	716.4			56	13.3	68	SW	6	2.7		2c	0	Calm		0	0	Fair	
Fort Verde, Arizona					49	9.4	37	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.86	758.4	29.90	759.4	80	26.7	82	SE	1	0.4			10ks		SW	0	0	Threatening	
Grand Haven, Michigan	29.39	746.5	30.01	762.2	64	17.8	58	NW	4	1.8		0	0			0	0	Clear	
Helena, Montana					55	12.8	81	SW	4	1.8		8cs	0	Calm		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.28	743.7	30.04	763.0	63	17.2	72	N	3	1.3		5c	2s	SW	Calm	0.53	13.5	Fair	
Indianola, Texas	29.87	758.7	29.89	759.2	79	26.1	87	SE	10	4.5			10s		Calm	Inap.	Inap.	Cloudy	
Jacksboro, Texas	28.83	757.7	29.93	760.2	67	19.4	89	NE	8	3.6			10s		NE	1.32	33.5	Cloudy	
Jacksonville, Florida	30.06	763.5	30.08	764.0	77	25.0	69	Calm	0	0		0	0			Inap.	Inap.	Clear	
Keokuk, Iowa	29.34	747.8	30.04	763.0	65	18.3	58	Calm	0	0		5c	0	SW		0	0	Fair	
Key West, Florida	29.97	761.2	30.00	762.0	78	25.6	73	E	12	5.4		2k	0	E		0.21	5.3	Fair	
Kittyhawk, North Carolina	30.00	762.0	30.03	762.7	73	22.8	55	W	20	8.9		2c	0	Calm		0	0	Clear	
Knoxville, Tennessee	29.05	737.9	30.02	762.5	70.5	21.4	80	W	3	1.3			10ks		SW	Inap.	Inap.	Cloudy	
La Crosse, Wisconsin	29.28	743.7	30.00	762.0	55	12.8	87	S	6	2.7			Fog		Calm	0	0	Foggy	
La Mesilla, New Mexico	26.06	661.9	30.21	767.3	54	12.2	61	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.35	745.5	29.67	753.6	83	28.3	71	SE	12	5.4		0	8s		S	0	0	Fair	
Leavenworth, Kansas	29.24	742.7	30.07	763.8	58	14.4	76	Calm	0	0		9k	Fog	SW	Calm	0.01	0.3	Cloudy	
Lewiston, Idaho																			
Little Rock, Arkansas	29.65	753.1	29.96	761.0	72	22.2	85	NE	6	2.7			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.59	751.6	29.93	760.2	54	12.2	55	NE	5	2.2		0	0			0	0	Clear	
Louisville, Kentucky	29.46	748.3	30.01	762.2	63	17.2	89	N	7	3.1			10n		Calm	0.02	0.5	Light rain	
Lynchburg, Virginia	29.30	744.2	29.95	760.7	77	25.0	61	SW	1	0.4		8ck	0	Calm		0	0	Fair	
Madison, Wisconsin	29.05	737.9	30.02	762.5	57	13.9	75	NW	3	1.3		0	0			0	0	Clear	
Marquette, Michigan	29.33	745.0	30.03	762.7	47	8.3	62	N	2	0.9		2k	0	NW		0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.24	717.3	29.93	760.2	71	21.7	90	E	11	4.9			10s		SE	0.99	25.1	Cloudy	
Memphis, Tennessee	29.58	751.3	29.91	759.7	71	21.7	95	N	5	2.2			10s		Calm	0.86	21.8	Cloudy	
Milwaukee, Wisconsin	29.30	744.2	30.02	762.5	56	13.3	63	W	7	3.1		1k	Haze	Calm		0	0	Clear	
Mobile, Alabama	29.93	760.2	29.97	761.2	77	25.0	91	SE	10	4.5		0	5s		SE	0.89	22.6	Fair	
Montgomery, Alabama	29.81	757.2	30.03	762.7	75	23.9	85	SE	6	2.7		8k	0	SE		0.38	9.7	Fair	
Morgantown, West Virginia	29.00	736.6	29.94	760.5	71	21.7	80	N	2	0.9			10ks		Calm	0	0	Cloudy	
Mt Washington, N H	23.67	601.2	30.03	762.7	49	9.4	100	NW	46	20.6			Fog		NW	0.41	10.4	Dense fog	
Nashville, Tennessee	29.49	749.0	30.00	762.0	68	20.0	100	NE	4	1.8			10n		Calm	0.65	16.5	Light rain	
New Haven, Connecticut	29.72	754.9	29.83	757.7	78	25.6	69	W	6	2.7			10s		W	Inap.	Inap.	Cloudy	
New London, Connecticut	29.78	756.4	29.83	757.7	79	26.1	58	W	6	2.7		Haze	Haze	Calm	Calm	0	0	Dense haze	
New Orleans, Louisiana	29.86	758.4	29.92	760.0	76	24.4	90	SE	7	3.1			10s		SE	2.14	54.4	Cloudy	
Newport, Rhode Island	29.78	756.4	29.83	757.7	69	20.6	77	SW	10	4.5		0	Haze			0	0	Hazy	
New River, North Carolina																			
New York, New York	29.69	754.1	29.86	758.4	74	23.3	81	SW	6	2.7		5k	0	W		0	0	Fair	
Norfolk, Virginia	29.93	760.2	29.98	761.5	81	27.2	52	SW	11	4.9		5c	Haze	Calm	Calm	0	0	Fair	
North Platte, Nebraska	27.14	689.3	29.69	754.1	52	11.1	63	NW	3	1.3		10k	0	W		0	0	Cloudy	
Olympia, Washington Ter	30.20	767.1	30.24	768.1	45.0	7.2	84	S	2	0.9			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	28.92	734.6	29.98	761.5	63	17.2	67	SW	5	2.2		2ck	1s	W	Calm	0	0	Fair	
Oswego, New York	29.59	751.6	29.90	759.4	58	14.4	64	W	8	3.6		5cs	5s	W	W	0.03	0.8	Cloudy	
Pembina, Dakota	28.95	735.3	29.76	755.9	50	10.0	93	Calm	0	0		5c	0	NW		0.19	4.8	Fair	
Pensacola, Florida	29.97	761.2	30.00	762.0	76	24.4	91	SE	16	7.2		4ck	4ks	Calm	SE	1.13	28.7	Fair	
Philadelphia, Pennsylvania	29.83	757.7	29.88	758.9	77	25.0	65	W	6	2.7		5c	Haze	Calm	Calm	0	0	Fair	
Phœnix, Arizona	28.71	729.2	30.48	774.2	63	17.2	42	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.97	761.2	18	—7.8	53	SW	16	7.2		10k	0	Calm		0.18	4.6	Clear	
Pilot Point, Texas	29.18	741.1	30.00	762.0	68	20.0	95	N	10	4.5			10s		Calm	0.08	2.0	Cloudy	
Pioche, Nevada	24.08	611.6	29.85	758.2	45	7.2	31	Calm	0	0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.17	740.9	29.96	761.0	64	17.8	89	NW	8	3.6			10s		NW	0.11	2.8	Cloudy	
Port Huron, Michigan	29.36	745.7	30.02	762.5	51	10.6	59	N	8	3.6		0	0			0	0	Clear	
Portland, Maine	29.65	753.1	29.69	754.1	76	24.4	56	W	9	4.0		10k	0	Calm		0	0	Cloudy	
Portland, Oregon	30.25	768.3	30.32	770.1	44.5	6.9	88	NW	4	1.8		1cs	0	Calm		0	0	Clear	
Portsmouth, North Carolina					74	23.3	72	SW	19	8.5		5cs	0	Calm		0	0	Fair	
Prescott, Arizona	24.75	628.6	30.11	764.8	37	2.8	38	NE	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.01	762.2	77	25.0	65	E	12	5.4		5c	0	Calm		0.11	2.8	Fair	
Red Bluff, California	29.57	751.1	29.92	760.0	67.0	19.4	46	NW	8	3.6		1c	0	Calm		0	0	Clear	
Rio Grande City, Texas	29.59	751.6	29.80	756.9	81	27.2	78	SE	14	6.3		0	0			0	0	Clear	
Rochester, New York	29.31	744.5	29.91	759.7	60	15.6	65	NW	13	5.8			10s		Calm	0.48	12.2	Cloudy	
Roseburg, Oregon	29.71	754.6	30.29	769.4	47	8.3	85	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.83	757.7	29.90	759.4	62.5	16.9	70	SE	2	0.9		0	0			0	0	Clear	
St. Louis, Missouri	29.60	749.3	30.07	763.8	61	16.1	71	N	7	3.1		5ck	0	W		0.20	5.1	Fair	
St. Paul, Minnesota	29.11	739.4	29.93	760.2	50	10.0	82	SE	2	0.9		5ck	0	W		0	0	Fair	
Salt Lake City, Utah	25.67	652.0	30.00	762.0	50	10.0	52	SE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.19	741.4	29.86	758.4	77	25.0	86	SE	4	1.8			10ks		SE	0.03	0.8	Cloudy	
San Diego, California	29.88	758.9	29.95	760.7	58	14.4	42	NE	4	1.8		0	0			0	0	Clear	
Sandusky, Ohio	29.37	746.0	30.02	762.5	62	16.7	67	W	10	4.5		8c	2ks	W	Calm	1.30	33.0	Cloudy	
Sandy Hook, New Jersey	29.83	757.7	29.86	758.4	82	27.8	60	SW	7	3.1		1ck	0	Calm		0	0	Clear	
San Francisco, California	29.89	759.2	29.95	760.7	57	13.9	75	SW	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.30	591.8	29.84	757.9	43	6.1	75	N	1	0.4			10ks		SE	0	0	Cloudy	
Savannah, Georgia	30.01	762.2	30.10	764.5	82	27.8	67	S	1	0.4		1k	0	Calm		0	0	Clear	
Shreveport, Louisiana	29.72	754.9	29.93	760.2	76	24.4	82	Calm	0	0			10s		Calm	0	0	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina																			
Socorro, New Mexico																			
Springfield, Illinois	29.43	747.5	30.10	764.5	61	16.1	71	NW	4	1.8		3c;ck	0	SW		0	0	Fair	
Springfield, Massachusetts	29.68	753.9	29.80	756.9	81	27.2	59	W	2	0.9		5cs	0	W		0	0	Fair	
Stockton, Texas	26.91	683.5	29.91	759.7	59	15.0	100	NW	14	6.3			10n		NW	0.33	8.4	Light rain	
Thatcher's Island, Mass	29.73	755.1	29.78	756.4	69	20.6	75	SW	7	3.1		5k	2s	SW	SW	0	0	Fair	
Toledo, Ohio	29.33	745.0	30.00	762.0	63	17.2	62	W	5	2.2		5c	0	W		0.01	0.3	Fair	
Tucson, Arizona	27.48	698.0	30.03	762.7	67	19.4	26	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.75	755.6	30.24	768.1	56	13.3	46	NW	10	4.5		2c	0	NW		Inap.	Inap.	Clear	
Uvalde, Texas	28.89	733.8	29.66	753.4	78	25.6	82	E	4	1.8			10s		SE	0	0	Threatening	
Vicksburg, Mississippi	29.70	754.4	29.95	760.7	77	25.0	82	SE	3	1.3		5c	0	W		0.17	4.3	Fair	
Virginia City, Montana	24.26	616.2	29.74	755.4	43	6.1	67	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.52	749.8	29.88	758.9	60	15.6	60	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C	29.82	757.4	29.93	760.2	77	25.0	69	S	3	1.3		5c	0	NW		0	0	Fair	
Wickenburg, Arizona					58	14.4	27	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.02	762.5	30.09	764.3	75	23.9	64	SW	8	3.6		2c	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.69	652.5	30.05	763.3	40	4.4	65	NE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.77	756.1	29.80	756.9	66	18.9	79	SW	12	5.4		1ck	Haze	SW		0	0	Clear	
Yankton, Dakota	28.70	729.0	29.95	760.7	63	17.2	52	W	7	3.1		0	0			0	0	Clear	
Yuma, Arizona	29.68	753.9	29.82	757.4	68	17.2	54	SW	1	0.4		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			60.0	15.6	69	Calm	0	0			8ks			0	0	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.95	760.7	30.00	762.0	78	25.6	82	SE	1.2	0.5		4ck	0	Calm		0.89	22.6	Fair	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.92	760.0	29.93	760.2	79	26.1	83	Calm	0	0		8c	2s	Calm		0	0	Hazy	James Gall.
Navassa, W. I	29.82	757.4	29.90	759.4	77	25.0	84	E	2	0.9			10		E	0.18	3.3		F. M. Everett.
Paramaribo, D. Guiana, S. A	29.97	761.2	29.97	761.2	80	26.7	82	E			2	3c	5k	E		0.540	13.72	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia‖	29.42	747.3	29.97	761.2	78	25.6	89	Calm			0		10ks			0.78	19.8		Francesco J. Cisneros.
Rivas, Nicaragua					77	25		SW				6ck		SW		0	0	ⅩX covered	Earl Flint.
Santiago de Cuba, W. I	29.90	759.4	29.93	760.2	77	25.0	86	N	2.4	1.1		8c	2ks	SE		0.39	9.9		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.68	753.9	29.73	755.1	32.0	0.0	95	NE	7	3.1		2c	0	N		0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,130.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.02	762.5	76	24.4	91	SE	10	4.5			8		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	29.74	755.4	74	23.3	86	W	10	4.5			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	30.05	763.3	68	20.0	84	SW			2		Haze		Calm	0	0			Fair	
§ Adams, Punta Arenas, Costa Rica	29.93	760.2	79	26.1	91	Calm			0		10							Cloudy	
§ Alaska, Callao, Peru *	29.95	760.7	63	17.2	83	Calm			0		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.99	761.7	71	21.7	80	S			3		2		Calm	0	0	Smooth		Fair	
Alliance, Norfolk, Va.	30.00	762.0	72	22.2	80	SW			1		2		NE	0	0			Clear.	
§ Ashuelot, Shanghai, China	29.96	761.0	70	21.1	90	E			1		10							Cloudy	
Colorado, New York, N. Y.	29.84	757.9	78	25.6	82	SW	3	1.3			2			0	0			Hazy	
§ Constitution, New York, N. Y.	29.84	757.9	75	23.9	72	SSW	9	4.0			5		W					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.02	762.5	74	23.3	72	WSW	16	7.2			2		SW	0	0			Fair	
Independence, § Mare I'd, Navy Yard, Cal.	30.01	762.2	67	19.4	??	WSW	1.2	0.5			1		WSW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.18	766 6	43	6.1	83	Calm			0		10					Smooth		Cloudy	
Kearsarge, Key West, Fla	30.01	762.2	77	25.0	82	ESE			3		5		E			Smooth		Fair	
§ Lackawana, N. 15° 56′, W. 98° 48′ †	29.97	761.2	84	28.9	79	W			1		10		W			Smooth	W	Cloudy	
§ Marion, S. 49° 27′, W. 60° 25′	29.87	758.7	46	7.8	100	E			1		5			0	0	Smooth		Hazy	
§ Michigan, Erie, Pa.	29.89	759.2	59	15.0	94	NNW					10		NW					Cloudy	
§ Monocacy, Shanghai, China	29.90	759.4	69	20.6	90	E			1-2		10			0	0			Overcast	
§ New Hampshire, Port Royal, S. C.	30.08	764.0	76	24.4	77	S	9	4.0			2		S	0	0			Fair	
Nipsic, Villafranca, France	30.07	763.8	71	21.7	75	ENE			1		0					Smooth		Blue sky	
§ Onward, Ancon Bay, Peru †	29.96	761.0	64	17.8	83	S			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.86	758.4	68	20.0	??	SE			3		10							Cloudy	
§ Passaic, Washington, D. C.	29.96	761.0	77	25.0	95	W			1		2			0	0			Clear.	
§ Portsmouth, Bermuda	30.12	765.0	71	21.7	85	NW			2		10			0	0	Smooth		Cloudy	
§ Powhatan, N. 37° 34′, W. 76° 13′	29.96	761.0	75	23.9	81	WSW			2		2		WSW					Fair	
§ Quinnebaug, N. 49° 01′, W. 5° 56′	30.44	773.2	53	11.7	73	NNW			3		8		NW			Long	NW	Fair	
§ Richmond, Shanghai, China	29.87	758.7	71	21.7	95	ESE			2		10		SE					Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.00	762.0	78	25.6	95	SE	5	2.2			5		SE	0	0			Cloudy?	
§ Saratoga, N. 38° 07′, W. 9° 17′	30.27	768.8	70	21.1	70	NNW			4		2		Calm	0	0	Smooth	N	Clear	
§ Shenandoah, Montevideo, Uruguay	30.01	762.2	62	16.7	94	NNW			7		8		N			Smooth		Fair	
§ St. Louis, League Island, Pa.	29.89	759.2	74	23.3	90	SW	7	3.1			5		W	0	0			Fair	
Swatara, Bangkok, Siam †	29.76	755 9	86	30.0	88	SSW			3		10		Calm			Smooth		Cloudy	
§ Tennessee, N. 36° 58′, W. 75° 58′	30.02	762.5	74	23.3	72	SW	7	3.1			5		Calm	0	0	Smooth		Fair	
Ticonderoga, Yokohama, Japan	30.01	762.2	70	21.1	95	SSW			1		2		SSW			Smooth		Clear	
§ Trenton, Villafranca, France	30.06	763.5	73	22.8	81	Calm			0		0			0	0	None		Clear.	
§ Vandalia, New York Harbor, N. Y	29.86	758.4	80	26.7	66	WSW			2		5		SW					Cloudy?	
§ Wabash, Boston, Mass.	29.79	756.7	78	25.6	65	WSW	4	1.8			8			0	0			Fair	
§ Wachusett, S. 52° 13′, W. 68° 00′	29.57	751.1	48	8.9	92	NNW			5		2		N; W	0	0	Smooth		Clear	
Wyoming, Villafranca, France	30.07	763.8	70	21.1	75	E			1-2		2		E			Smooth	E	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian,																			R. Carruthers.
S. S. Hibernian, F. Archer,																			
S. S. Moravian, J. Graham,																			John France.
S. S. Peruvian,																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, I. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng.....*†	30.28	769.1	59	15.0	88	NW			4		5		NW	1 h'r	1 h'r			Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 45° 56', W. 38° 37'...*†	29.86	758.4	62	16.7	94	WSW			1		5		W	1 h'r	1 h'r	Smooth	N	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson,																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 37° 01', W. 75° 29'	29.98	761.5	73	22.8	61	S			3		5		S	0	0	Mod'ate	S	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the 24 hours. Inches.	Rain-fall or melted snow in the 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 28° 17', E. 127° 16'.....†	29.90	759.4	77	25.0	86	E			5		2		E			Mod'ate	E	Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 28', W. 161° 41'.....†	30.18	766.6	63	17.2	89	SE			6		n		SW	Light	Light	Mod'ate Smooth	S	Overcast	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, N. 42° 28', W. 124° 38'	30.13	765.3	48	8.9	85	NNW			8	5c		WNW				Very Heavy	NW	Hazy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, N. 33° 58', W. 118° 42'....†	29.99	761.7	60	15.6		WNW			2							Light	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, Portland, Oregon.....†	30.27	768.8	48	8.9		NW			2		5		NW					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
S. S. Alaska, D. S. Austin, Champerico, Guatemala†	29.83	757.7	78	25.6	84	E			2		10		SE			Mod'ate	SSW	Cloudy	F. A. Johnston.
§S. S. Australia																			Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb S. 23° 20′, W. 175° 26′....†	29.74	755.4	74	23.3	100	SW			4		10		SW			Heavy	SW	Raining	W. H. Hawes.
§S. S. City of Panama, M. Connolly. N. 16° 20′, W. 99° 10′.....†	29.92	760.0	84	28.9	91	NE			1		10		NE	0	0	Mod'ate	SW	Cloudy	R. Thompson & J. Andersen.
§S. S. City of Peking, G. G. Berry,... N. 30° 14′, E. 128° 42′....†	29.90	759.4	72	22.2	85	ENE			2		2		ESE			Smooth		Fair	
§S. S. City of Sidney, H. C. Dearborn S. 25° 11′, W 176° 27′...*†	29.65	753.1	74	23.3		W			6		5		W	0	0	Mod'ate	W	Squally	E. LeSack.
§S. S. City of Tokio, J. Maury N. 39° 12′, W. 142° 43′...†	30.70	779.8	59	15.0	76	E			2		Fog		E	0	0	Smooth		Foggy	F. S. Doane.
§S. S. Colima, R. R. Searle, N. 34° 08′, W. 120° 43′....†	29.93	760.2	62	16.7	100	WNW			3		0			0	0	Mod'ate	WNW	Misty	
§S. S. Dakota, D. E. Griffiths																			D. E. Griffiths.
§S. S. Granada, J. M. Cavarly																			
§S. S. Idaho, Port Townsend, Washington Ter..†	30.30	769.6	58	14.4		Calm			0		0			0	0			Clear	
§S. S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 42° 16′, W 42° 11′.....†	29.84	757.9	64	17.8		E			1		5		E	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 50° 05′, W. 24° 14′.....†	30.20	767.1	52	11.1		W			3		2		W			Long	W	Squally	H. N. Goulden.
S. S. Britanic, H. Perry,... N. 41° 36′, W. 60° 33′.....†	29.92	760.0	56	13.3		WSW			4		8		W			Smooth	N	Foggy	J. Jones.
S. S. Celtic, B. Gleadell.....																			
S. S. Republic, P. J. Irving N. 50° 44′, W. 16° 06′....*†	30.51	774.9	56	13.3		W			1				E	0	0	Light	E	Clear	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Rockland, Maine..... ....†	29.81	757.2	78	25.6		WSW			1		8		W	0	0			Gloomy	Mehaffey.
Schr. Adule Fuller, J. Jorgensen, St. Andrew Sound, Ga†	30.11	764.8	76	24.4	73	Calm	0	0			2k		Calm	0	0			Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis. .. Arroyo, Porto Rico, W.I†	29.95	760.7	80	26.7		E			3		10		SE	Heavy	Heavy	Mod ate	SSE	Raining	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 26° 10′, E. 5° 10′.....*†	30.20	767.1	64	17.8		SE			4		10		SE	0	0	Smooth	SE	Fair	B. F. Woodbury.
Delia Hodgkins, Port Hastings, Nova Scotia†	29.80	756.9				SSE			3		2		S					Fair	
Brigantine George, W. H. Champlin. N. 24° 03′, W. 69° 05′.....†	30.23	767.8	74	23.3		ENE			5		10		ENE	Showers.		Mod'ate	E	Rainy	
Hippolyta																			
Iron Cross, W. Randall.....																			W. Randall.
Barque Syringa, E. Lewis...																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 29, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.13	765.2				NE			3		2			0	0	Fair	Dr. Ollive.
Nemours			30.11	764.8	68.9	20.5	80	Calm			0		0			0	0	Clear	Metge.
Algiers			30.16	766.1	67.6	19.8	83	NE			5		10			0	0	Covered	Nicolas.
La Calle			30.17	766.2	72.1	22.3	75	NW			3		4			0	0	Cloudy	Fonfrède.
Tunis			30.10	764.4															Jacques.
Sfax			30.18	766.5															Gau.
Saida			30.08	763.9															Bernard.
Tebessa			30.14	765.6	77.5	25.3	41	WNW			1		3			0	0	Pretty fair	Watrin.
Geriville					74.5	23.6	98	WNW			5		5			0	0	Cloudy	Brugniaux.
Laghount			30.11	764.9	85.3	29.6	18	S			5		10			Inap.	Inap.	Covered	Suart.
Biskra			30.11	764.7	84.9	29.4	59	E			1		4			0	0	Cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,366? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.46	748.3	29.99	761.7	72.3	22.4	57	N			6		6			0.618	15.7		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.35	745.6	30.11	764.8	61.0	17.8	76	NW	11.0	4.9			10			0	0		Dr. Wierzbicki.
Eperies	29.14	740.1	29.98	761.5	75.2	24.0	56	N			4		9ks		S	0	0		Julius Mikolik.
Gratz	28.84	732.4	30.05	763.2	67.3	19.6	59	NW			4		7			0.417	10.6		Andreas Rospini.
Hermannstadt	28.58	725.9	29 93	760.3	79.0	26.1	30	SE			2		1			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.90	734.0	30.26	768.5	60.4	10.2	95	WSW			2		10			0.740	18.8		The Staff.
Lemberg	29.00	736.6	29.94	760.5	74.5	23.6	41	SE			3		1			0	0		Dr. T. Stanecki.
Pola	29.78	756.5	29.89	759.2	80 2	26.8	44	ESE			4		5			1.358	34.5		I.R. Hydrographic Office.
Szathmar	29.54	750.2	29.98	761.4	81.7	27.6	47	S			3		2			0	0		Pet. Pancsics, S. J.
Szegedin	29.66	753.3	29.92	760.0	78.8	26.0	49	SW			1		5			0.368	9.35		Karl Stancel.
Trieste	29.81	757.2	29.91	759.8	75.0	23.9	68	E			1		10			0.815	20.7	Thunder-storm.	P. Busin.
Vienna	29.48	748.8	30.21	767.4	51.8	11.0	92	NW			5		10			0.331	8.4		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather in the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon																			Prof. M. Passau.
Brussels	30.23	767.7	30.43	772.8	58.1	14.5	44	WNW			3		5		W	0	0		Royal Observatory
Furnes	30.50	774.6	30.52	775.2	63.0	17.2	52	NW			2		1			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 29, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.29	769.4	30.39	771.9	49.2	9.6		S	14	6.3			6			Blank	Blank	D. clouds	W. Boswell.
Ardrossan	30.38	771.6	30.40	772.1	55	12.8		SSW			2		7					Raining	G.Carrick.
Armagh, (Observatory)	30.20	767.1	30.43	772.9	57.8	14.3		SW	7	3.1			6					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.47	773.9	54.6	12.5		WNW	14	6.3			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.90	759.4	30.42	772.7	55.3	12.9		W	12	5.4			5					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	30.03	762.7	30.42	772.7	55.1	12.8	60	W			4		7			0.01	0.3	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.97	761.2	30.00	762.0	82	27.8		NE			1		3					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	30.38	771.6	30.47	773.9	56.6	13.3		NW			1		7					D. clouds	H. Todd.
Cardington			30.44	773.2	58.4	14.7		NW			0-1		6					D. clouds	John McLaren.
Chatham (School M. E.)	30.33	770.4	30.46	773.7	60.0	15.6		Calm			0		6k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.40	772.1	30.44	773.2	55	12.8		S			3		10					Overcast	J. Mac Gowan.
Dover	30.44	773.2	30.47	773.9	55	12.8		S			3		7					¾ clouded	J. Costello.
Falmouth (Observatory)	30.29	769.4	30.53	775.4	57.8	14.3		NNW			1		8					Overcast	The Staff.
Fort Napier, Natal	27.67	702.8	29.88	758.9	76.2	24.6		W			3		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.71	754.6	29.94	760.5	88	31.1		W			1		8					Drizzling	
Galway (Queen's College)			30.35	770.9	59	15.0		SW			3		6					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.00	762.0	30.05	763.3	70.8	21.6		E			5		4					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	30.17	766.3	30.38	771.6	54 8	12.7		W			2		8k					Gloomy	D. G. Maclean.
Great Yarmouth	30.43	772.9	30.43	772.9	55	12.8		NNE			4		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	30.28	769.1	30.45	773.4	62.1	16.7		NNW			1		7					D. clouds	The Staff, for G.B.Airy.
Guernsey	30.29	769.4	30.51	774.9	57.5	14.2		NW			2		4					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.48	774.2	30.61	777.5	58	14.4		S			4		2k			0	0	Fine	M. P. Moyle.
Holyhead	30.46	773.7	30.48	774.2	56	13.3		WSW			2		1					Blue sky	John Tilston.
Jersey	30.26	768.6	30.56	776.2	57.0	13.9		NW			2		2					D. clouds	J. Fisher.
Kew (Observatory)	30.43	772.9	30.47	773.9	59.5	15.3		NW	12	5.4*			7					D. clouds	The Met'g'l Office.
Leicester (Museum)	30.19	766.8	30.44	773.2	55.6	13.1		N			1		8					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.92	760.0	29.99	761.7	75	23.9		W			2		0					Blue sky	A. King.
Nairn	30.24	768.1	30.33	770.4	59	15 0		W			2		2					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.01	762.2	80.0	26.7		NE			2		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.26	768.6	30.45	773.4	62.1	16.7		NNW			2		7k;ks		NNW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.97	760.2	30.45	773.4	57.6	14.2		NW			3		4					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.23	767.8	30.49	774.4	57	13.9		NW			1		6					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	30.42	772.7	30.50	774.7	60.1	15.6		SW			3		10					Overcast	John Merrifield.
*Roche's Point	30.42	772.7	30.53	775.4	57	13.9		SW			4		5					¾ clouded	Wm. Kennedy.
St. Ann's Head	30.35	770.9	30.51	774.9	54	12.2		NW			1		2					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.36	771.1	49.9	9.9		NW			3		9					D. clouds	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29 82	757.4	29.89	759.2	69.8	21.0		NNE			2		7					D. clouds	Serg't W. H. Lyne.
Sheffield	30.17	766 3	30.45	773 4	59.2	15.1		NW			2		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.40	772.1	30.43	772.9	59.1	15.1	61	NW			5		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.46	773.7	54.5	12.5							5					Squally	Rev. S. J. Perry.
Stratfield Turgiss	30.26	768.6	30.48	774.2	58.9	14.9		NW			3-4		6					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.51	774.9	30.52	775.2	64	17.8		N			4		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.42	772.7	30.44	773.2	55.8	13.2		S	29	13.0			7					Squally	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.05	763.3	30.09	764.3	63.0	17.2	66	NW	4.5	2.0		0	1			0	0	Clear	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.92	760.0	52.0	11.1	81	S			2		10kn			0.10	2.5	Showery	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			30.40	772.1	56.6	13.7		E			2	5ck		W		0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.89	759.2	30.08	764.1	75.0	23.9	70	SE	11.5	5.1		1	2		ESE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	29.72	754.9	29.81	757 2	51.7	10.9	94	E	2	0.9			6			0.24	6.1	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.30	769.6	52	11.1		S			3	5	5	S		0	0		J. Youngclause.
North Unst, Shetland I's			30.30	769.6				NW			4	2	5	S		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather	Observer
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Sommewyne				Capt. Jas. Buchan.
Ship British Commodore. N. 38° 55′, W. 46° 45′	3	ENE	Misty	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German. S. 18° 05′, E. 4° 51′			D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	69.4	20.8	97	Calm			0		10s;ϕ			0.20	5.	Cloudy.	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	30.23	767.7	30.27	768.9	54.0	12.2	74	WNW			2		9						
Fanöe	30.27	768.9	30.29	769.4	54.3	12.4	71	W			4		6						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.84	757.8	29.88	758.9	47.1	8.4	69	SE			4		2						
Thorshavn (Faröe)	30.22	767.5	30.25	768.4	47.8	8.8	54	SW			5		5						
Vestervig	30.14	765.6	30.24	768.0	55.6	13.1	78	WNW			2		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.96	761.0	30.51	775.0	59.9	15.5	48	NE			1		5k		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.37	771.3	30.48	774.1	64.4	18	44	NW			3		2		E	0	0	Slightly cld'y	Vaillant, Director.
Arras, Engineer School	30.19	766.8	30.45	773.4	57.4	14.1	36	N			2		8n		NW	0.043	1.1		Klein, Commandant.
Avignon, Normal School	30.04	763.1	30.12	765.1	68.4	20.2	46	N			7		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.84	758.0	30.40	772.2	61.5	16.4	31	NNE			3		8kn		NNE	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	30.21	767.2	30.47	774.0	60.3	15.7	32	N			2		8		N	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.48	748.8	30.37	771.4	61.9	16.6	40	NE			2		5		NE	0	0	Cloudy	A. Carré, Director.
Bordeaux	30.18	766.6	30.38	771.6	68.0	20.0	39	ENE			2		5	NW	WSW	0	0	Cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.41	747.1	30.36	771.2	63.7	17.6	40	N			4		kn	N	N	0	0		Marlot, Director.
Bourges, Normal School	29.84	757.8	30.39	771.8	61.2	16.2	85	NE			2		5k		NNE	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	30.28	769.2	30.53	775.4	64.4	18.0	67	W			1		5k		W	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	30.38	771.6	30.45	773.5	59.2	15.2	87	W					2		N	0	0	Slightly cl'dy	M. Bietrix, Director.
Carcassonne, N. School	29.86	758.5	30.27	768.8	71.2	21.8	31	WNW			3		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	30.13	765.2	30.45	773.4	58.6	14.8	61	W			3		8		N	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.83	757.8	30.40	772.1	62.2	16.8	92	N			1		6		S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	29.00	736.6	30.35	770.9	62.6	17.0	34	N			2		5		N	0	0		Alluard, Director.
Commercy, Normal School	29.55	750.5	30.41	772.4	58.6	14.8	47	W			4		k		W	0.043	1.1		Dr. Goullet, Director.
Commune de Gréasque*	28.92	734.5	30.06	763.5	67.3	19.6	30	NW			4		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.50	749.2	30.26	768.5	63.3	17.4	68	N			1		ckn			0	0		Ablard, Director.
La-Roche-sur-Yon, N. Sch'	30.26	768.6	30.48	774.1	67.1	19.5	32	N			1		2		N	0	0	Slightly cld'y	Mouillot, Director.
Le Mans, Normal School	30.19	766.7	30.50	774.6	60.8	16	40	NE			2		5		NE	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.45	748.1	30.36	771.1	58.1	14.5	52	NE			2		2	NW	S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	30.43	772.8	30.54	775.6	65.1	18.4	60	SSW			3		5	NE	NW	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.70	754.4	30.32	770.1	62.6	17.0	34	NE			3		1n		N	0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.76	755.8	30.02	762.6	69.3	20.7	26	NW			6		0			0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	29.30	744.3	30.35	770.9	60.1	15.6	53	NE			3		k		NE	0	0		Barbier, Director.
Mont-Louis	25.05	636.2	30.28	769.2	51.4	10.8	33	N	13.0	5.8			0			0.346	8.8		M. Cave, for Dr. Fines.
Nice	29.90	759.5	29.93	760.3	71.2	21.8	70	SE			3			SE	SE	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.94	760.4	30.14	765.5	70.0	21.1	27	NW			6		0			0	0	Clear	M. Boyer, Director.
Perpignan	30.17	766.2	30.27	768.9	69.4	20.8	17	NW	22.4	10.0			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.74	577.7			36.0	2.2							10		NE	0	0	Covered	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.18	741.1	30.23	767.9	63.7	17.6	24	N			6		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Ob	25.41	645.4			38.5	3.6	50	N			4		2		N	0.087	2.2	Light mist	Alluard, Director.
Rochefort, Naval Obs'y	30.45	773.4	30.48	774.2	70.9	21.6	38	N			1		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	30.39	772.0	30.48	774.2	60.1	15.6	43	NNW			2		2		NW	0	0	Slightly cl'dy	Platrier, Director.
Saint Malo (Port) Obs'y	30.48	774.3	30.52	775.1	60.4	15.8	59	NNW			3		0			0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.29	769.3	30.45	773.5	61.2	16.2	37	N			2		10		N	0	0		E. Renou, Director.
Tarbes, Normal School	29.30	744.1	30.35	770.9	71.6	22	43	E											T. Huguet, Director
Toulouse, Observatory	29.67	753.7	30.41	772.3	64.4	18.0	56	NW			3		2			0	0	Slightly cld'y	B. Baillaud, Dir.
Tours	30.24	768.2	30.44	773.2	65.8	18.8	31	NE			2		3		N	0	0	¼ covered	M. de Tastes.
Versailles, Observatory	29.96	761.0	30.45	773.5	63.0	17.2	32	N			3		9			0	0	Al. covered	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.52	749.9	30.23	767.8	65.8	18.5	39	NNW			3		2		NW	0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	80.6	27										0.20	5.		L'Abbé Marchési
Paris, Montsouris Obs'y	30.17	766.3			58.6	14.8	37	NNW			2		9		NNW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.69	754.2	29.72	754.8	71.6	22.0	85	SE	19.7	8.8		10ck		SW		0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 P instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.48	748.7	30.35	770.9	59.4	15.2	54	N			4		8k	NW		0	0		Prof. Dr. Hoh.
Berlin	30.18	766.6	30.35	770.9	62.4	16.9	37	W			1		9			0.024	0.6		Prof. Dr. Arndt.
Breslau	29.78	756.3	30.31	769.9	50.2	10.1	100	NNW			3		10			0.780	19.81	Raining	Royal University Obs'y
Carlsruhe	29.92	760.0	30.35	770.9	61.5	16.4	50	NE			0		5	N		0.035	0.9	Raining	Albert Senz.
Cassel	29.75	755.6	30.36	771.2	58.1	14.5	50	N			4		5	SW		0.005	0.12		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	30.07	763.6	30.43	772.9	64.9	18.3	26	N			2		7			Inap.	Inap.		Physical Society.
Friedrichshafen	28.93	734.9	30.40	772.2	48.4	9.1	83	N			3		10	NNE		0.236	6.0	Raining	Chief Telegrapher Wilhelm.
Hamburg	30.28	769.1	30.35	770.9	57.2	14.0	64	WNW			3		6			0.102	2.6		Dr. Reinhold Kleemann.
Kiel	30.30	769.5	30.31	769.9	57.6	14.2	50	W			3		6			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.19	766.7	30.27	768.8	55.9	13.3	59	N			4		10	W		0.035	0.9		Prof. E. Luther.
Köslin			30.29	769.4	61.7	16.5		NW			2		4			0.189	4.8		H. Müller.
Leipsic Observatory	29.96	760.9	30.38	771.6	59.2	15.1	67	WNW			1		9	NW		0.154	3.9		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	30.13	765.3	30.36	771.1	61.9	16.6	45	NW			3		7ks	NNW		0.079	2.0		Dr. Assmann.
Memel	30.19	766.7	30.23	767.9	51.1	10.6	89	NW			0–1		10k					Heavy rain	Reinbrecht & Issermann
Munich	28.51	724.2	30.40	772.1	46.2	7.9	83	NW			4		10	W		1.457	37.0	Raining	Dr. C. Lang.
Neufahrwasser	30.29	769.4	30.31	769.8	52.9	11.6	80	NNE			2		10			0.161	4.1		A. Lothes.
Neustadt (Palatinate)	29.84	757.8	30.37	771.4	60.8	16.0	45	N			1		9	N		0	0		Reallehrer Dicknether.
Posen	30.02	762.6	30.32	770.0	53.6	12.0	80	NW			4		10			0.043	1.1		Prof. Dr. Magener.
Strassburg (in Alsace)	29.84	758.0	30.39	771.9	63.1	17.3	36	NE			3		5	NE		0.017	0.42		Imp. University Observatory.
Stuttgart	29.41	746.9	30.30	769.7	58.1	14.5	41	NE					6	N		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.86	733.1	30.46	773.7	50.9	10.5	82		2.0	0.9			10		N	0.024	0.6	Light rain	Reallehrer J. Hopfner.
Wustrow	30.31	769.9	30.34	770.5	56.3	13.5	62	WSW			3		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.61	752.0	29.98	761.6	77.0	25.0		N			1.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.48	748.6	29.52	749.9	85.4	29.7	88	SSW	27	12.1			1	W		0	0	Misty	
Deesa	29.05	737.9	29.50	749.2	102.6	39.2	26	W	13.8	6.2			0			0	0	Misty	
Bombay	29.61	752.0	29.64	752.0	86.7	30.4	69	NW	16	7.2			4		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.77	705.4	29.58	751.2	89.1	31.7	43	WNW	27	12.1			4		ENE	0	0	D. clouds	
Belgaum	27.17	690.1	29.68	753.7	79.6	26.4	72	SW	8	3.6			9	SW	SW	0	0	Threatening	
Lahore	28.72	729.4	29.42	747.2	103.3	39.6	19	N	1.1	0.5			0			0	0	Misty	
Roorkee	28.57	725.7	29.43	747.6	94.8	34.9	37	Calm	3	1.3			0			0.07	1.8	Sultry	
Agra	28.89	733.7	29.42	747.3	101.6	38.7	29	NW	5.7	2.6			0			0	0		
Nagpur	28.44	722.3	29.43	747.4	102.2	39.0	19	SW	5.3	2.4			6		SW	0	0	D. clouds	
Jubbulpore	28.15	715.0	29.45	748.0	101.1	38.4	19	NW	5.3	2.4			10			0	0	Overcast	
Lucknow	29.09	738.9	29.45	748.1	94.8	34.9	46	NNE	3.0	1.3			0			0.10	2.5	Blue sky	
Allahabad	29.12	739.6	29.42	747.1	100.2	38.1	36	NNE	3.9	1.7			0			0	0	Blue sky	
Patna	29.27	743.4	29.44	747.8	98.6	37.0	42	NE	2.6	1.2			4	NE	NE	0	0	D. clouds	
Hazaribagh	27.52	698.9	29.49	749.1	81.8	27.7	59	ESE	7.5	3.4			7		NE	0.32	8.1	Thunder-storm.	
Cuttack	29.38	746.3	29.46	748.3	90.1	32.3	96	SSE	1.4	0.6			5			0.31	7.9	D. clouds	
Calcutta (Alipore)	29.48	748.8	29.50	749.4	82.0	27.8	91	SW	1.5	0.7			10	W	W	0	0	Overcast	
Goalpara	29.15	740.4	29.55	750.5	87.7	30.9	67	Calm	3.4	1.5			6			0	0	Blue sky	
Chittagong	29.45	748.1	29.54	750.4	80.4	26.9	89	E	5.2	2.3			10			0.19	4.8	D. clouds	
Sibsagar	29.18	741.3	29.51	749.5	89.3	31.8	69	SW	1.6	0.7			2			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.54	750.2	29.94	760.4	76.5	24.7	57	SE	6.9	3.1			9			0.020	0.5		Prof. Giovanni Clodig
Milan	29.39	746.6	29.89	759.2	79.3	26.3	43	ENE	8.7	3.9			4	SW		0	0		Prof. Schiaparelli.
Padua	29.78	756.4	29.89	759.1	80.6	27.0	37	SE	13.7	6.1			7			0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.98	736.1	29.87	758.8	73.6	23.1	49	NW	2.5	1.1			8	N		0	0		Prof. P. F. Denza.
Genoa	29.79	756.7	29.98	761.5	69.8	21.0	70	SW	6.9	3.1			4	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.02	711.6	29.89	759.2	74.5	23.6	44	NE			2		2			0.374	9.5		Prof. D. C. Bruno.
Pesaro	29.85	758.3	29.90	759.5	73.4	23.0	65	NE	8.7	3.9			8	E		0	0		Prof. Luigi Guidi.
Florence	29.67	753.7	29.93	760.2	78.8	26.0	53	SW			2		3			0	0		Cav. F. Meucci.
Leghorn	29.90	759.5	29.98	761.6	71.4	21.9	81	WSW	6.3	2.8			2			0	0		Prof. P. Monte.
Rome	29.83	757.6	30.00	762.0	75.7	24.3	54	W	14.3	6.4			6			0	0		Prof. P. S. Ferrari.
Lecce	29.70	754.4	29.95	760.8	79.7	26.5	33	NE	2.5	1.1			4			0	0		Prof. C. De Giorgi.
Cosenza	29.11	739.3	29.99	761.7	80.6	27.0	67	SE	13.0	5.8			9			0	0		Prof. D. Ot 1.
Cagliari	29.84	757.9	30.02	762.6	72.7	22.6	40	NW			6		3	W		0	0		Prof. A. Pacinotti.
Palermo	29.78	756.5	30.04	763.0	73.2	22.9	37	NE	6.5	2.8			0			0	0		Prof. G. Cinacciatore.
Syracuse	29.83	757.7	29.87	758.8	78.8	26.0	55	S	1.3	0.6			1	E		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.52	749.8	30.03	762.7	75.2	24.0	60	SSW	3.8	1.7			3	SW		0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.1	19.5	77	Calm	0	0			0			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.77	756.1	29.97	761.2	67.0	19.4	83	WSW	0.7	0.3			9s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.89	759.2	29.96	761.0	63.6	17.6	89	S	1.8	0.8		0	2cs			0	0	Fair	The Staff.
Wakayama	29.90	759.4	29.95	760.7	68.0	20.0	83	S	0.5	0.2			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.3	29.97	761.3	57.2	14.0	46	SE			1	7cs	0			0	0	Cloudy	Prof. L. Perez.
Guanaxuato	23.88	598.9			64.2	17.9	33	SSE	Inap.	Inap.		1s	0	NE		0	0	Misty	Vicente Fernandez.
Leon	24.36	618.8	29.94	760.2	66.9	19.4	58	N			3	1c	0			0	0	Hazy	Prof. M. Leal.
Mazatlan	29.02	752.4	29.88	758.9	72.0	22.2	88	NW			1	0	0			0	0	Very clear	F. Quijano, C. E.
Mexico, Central Observatory	29.02	584.7	29.91	759.8	59.4	15.2	61	Calm	0	0		2c	0			0	0	Hazy	The Staff
Morelia	23.87†	606.2†			75.9	24.4	32	S			2	3ck	3s	E	SE	0	0	Almost cld'y	M. Fena, M. D.
Pabellon (Aguascalientes)	23.90	607.1	29.86	758.4	68.8	14.9	40	SW			1	6c	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.37	593.7	30.01	762.1	61.0	16.1	44	Calm	0	0		2ck	0	SW		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.10	612.1	29.95	760.8	64.0	17.8	52	SE			1	6	2	W	E	0	0	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.75	755.6	29.76	755.9	80.8	27.1	82	S			3	4	1	SW	S	0	0	½ clouded	Prof. M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.52	572.0	30.01	762.2	63.5	17.5	70	Calm			0	0	0			0	0	Fine	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7.433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.47	774.0	30.47	774.0	55.8	13.2		W			4					0.028	0.7		
Groningen	30.32	770.2	30.38	771.6	55.4	13.0		NW								0.051	1.3		
Helder	30.40	772.1	30.40	772.1	52.2	11.2		W			4					0	0		
Hellevoetsluis	30.44	773.1	30.44	773.1	55.2	12.9	62	NW			4					0.020	0.5		
Utrecht	30.38	771.7	30.48	772.9	61.0	16.1	49	WNW			2		5			0	0	Cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; they do not give the humidity; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.11	764.8	30.17	766.2	50.4	10.2	70	NNW	13.9	6.2			1			0.126	3.2		
Brönö	29.97	761.2	30.01	762.2	39.2	4.0	84	W	18	8			10			0.079	2.0	Raining	
Christiania	29.92	759.9	30.07	763.6	62.8	17.1	27	SW	9	4			4			0	0		
Tromsö	29.65	754.0	29.74	755.4	43.7	6.5	70	SW	11	5			10			0.079	2.0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.20	767.1	30.41	772.4	69.8	21.0	83	SSE			3		4			0	0		Dr. J. A. Sampaio.
Campo Major	29.14	740.1	30.10	764.6	79.2	26.2	43	NNE	7.4	3.3			1			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.14	765.6	30.23	767.8	68.0	20.0	65	SW	7.4	3.3			0			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.82	757.4	30.17	766.2	77.5	25.3	49	NNE	11.2	5.0			1			0	0		The Staff.
Ponta Delgada (Azores)	30.33	770.4	30.40	772.2	67.6	19.8	77	SE	8.1	3.6			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE Naval Series. Vessels and Captains.															Sea or swell. Height scale 0–9	Direction form—	Rain-fall.		
Bartholomew Dias																			A. G. da Silva Costa, Com'd't.
D. Fernando																			A. M. de Sande, Com'd't.
Duque da Terceira																			J. C. M. Cabrate, 1st Lt.
Mindello [Costa																			J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, St. Paul de Loando			29.95	760.8	76.6	24.8		W			2		0			2	W		D. clouds C. J. de Senna Barcellos, Q. M.
Rio Duro																			J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																			Antonio Sarmento, Q. M.
Sá da Bandeira																			F. Teixeira da Silva, Com'd't.
Sado, J. A. de Brito Capello																			
Mossamedes, Benguela			29.97	761.2	68.7	20.4		WSW			2		1			2	W		D. clouds A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.88	759.0	84.2	29.0		ESE			3		4		ESE	2			D clouds J. G. Feigos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.64	752.9	29.66	753.4	62.2	16.8	73	NW	13	6			10						Capt. Sseliwerstow.
Astrakhan	30.14	765.5	30.06	763.4	72.9	22.7	41	NW	4	2			1s					Light clouds	Capt. Wisganow.
Barnaul	29.27	743.4	29.74	755.4	71.8	22.1	36	NE	0	0			8					Light clouds	Meteorological Obs.
Dorpat	29.87	758.7	30.11	764.8	58.3	14.6	72	WSW	11	5			9ks						Prof. Dr. Weihrauch.
Ekaterinburg	28.79	731.3	29.73	755.2	60.4	15.8	43	N	16	7			7k;ks;n						Meteorological Obs.
Irkutsk																			
Kasan	29.60	751.8	29.85	758.3	79.5	26.4	40	WNW	2	1			5k						Physical Cabinet.
Kertch	29.87	758.7	29.80	759.2	66.2	19.0	77	NE	9	4			3						Lagorio.
Kieff	29.40	746.7	30.00	762.0	75.9	24.4	44	ENE	2	1			0						Physical Cabinet.
Krotkowo*	29.57	751.0	30.02	762.4	76.6	24.8	34	W	7	3			4						Cand. Fatjanow.
Lugan	29.76	755.9	29.96	760.9	78.3	25.7	39	E	22	10			2						Meteorological Obs.
Moscow	29.54	750.2	30.05	763.2	84.7	29.3	40	NE	4	2			0						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.95	760.8	30.02	762.6	76.8	24.9	46	NE	31	14			3k;ks						Kurdakof.
Nikolaievsk, on the Amoor	30.00	761.9	30.08	764.1	42.3	5.7	79	Calm	0	0			10n						
Nukuss																			
Orenburg																			
Pekin (China)	29.79	756.7	29.93	760.3	62.2	16.8	96	Calm	0	0			10n					Raining	Physical Observatory.
St. Petersburg	29.96	761.0	29.98	761.4	56.5	13.6	80	WNW	20	9			6k						Central Physical Obs.
Tashkend	28.37	720.7	29.87	758.8	76.8	24.9	62	Calm	0	0			0						Teich, A. M.
Tiflis	28.62	726.9	30.00	762.1	68.4	20.2	67	Calm	0	0			10ks						Physical Observatory.
Vladivostock																			
Warsaw	29.70	754.3	30.11	764.8	66.9	19.4	58	NNW	20	9			9ks						Astronomical Obs.
Wilna	29.68	763.8	30.08	763.9	78.3	25.7	51	NW	7	3			2						Astronomical Obs.
Yeniseisk	29.70	754.3	29.97	761.3	70.7	21.5	37	Calm	0	0			1						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.12	765.0	30.22	767.6	70.3	21.3	56	SSE	4.7	2.11			0			0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.37	771.3	30.42	772.7	67.5	19.7	68	NW	2.0	0.87		2	4		SE	0	0	Cloudy	Prof. Manuel de Naveran
Burgos, Met. Obs'y	27.35	694.6			58.6	14.8	53	SE	20.5	9.16			0			0	0	Clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	27.99	711.0	30.14	765.6	77.5	25.3	43	SE	3.7	1.67		0	1			0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	30.06	763.4	30.20	767.1	75.7	24.3	64	E	8.1	3.64		3	3		NW	0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.34	745.1	30.21	767.3	70.9	21.6	53	E	8.1	3.6			1			0	0	Almost clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.88	759.0	29.95	760.7	78.7	25.9	81	E	8.1	3.6		0	2s;k		SE	Inap.	Inap.	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.77	756.2	29.82	757.5	85.5	29.7	68	E	3.3	1.5						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	763.0	30.14	765.5	74.3	23.5	51	ESE	21.8	9.8		0	0			0	0		Capt. C. Pulgzon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.91	759.8	30.00	762.1	78.8	26.0	89	SE	0	0		6sk	6kn		SE	0.059	1.50	Cloudy	Enriquetadas, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.75	755.7	29.79	756.7	53.6	12.0		SW			4		2			0.039	1.0		
Umea	29.86	758.5	29.91	759.8	60.8	16.0	39	NW			2		9			0	0		
Hernosand	29.87	758.8	29.93	760.1	61.9	16.6	75	WNW			4		8			0	0		
Stockholm	29.96	760.9	30.13	765.4	57.9	14.4	53	W			4		6			0	0		
Wisby	29.86	758.5	29.92	760.0	57.7	14.3	55	W			2		0			0.063	1.6		
Sub-Series.																			
Upsala	30.00	761.9	30.08	764.1	56.8	13.8	59	WNW	6.5	2.9			6		W	0	0		Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pählson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.86	733.0	30.27	768.9	57.7	14.3	87	N			7		7			0	0	Cloudy	The Observatory.
Zurich	28.73	729.6	30.37	771.3	52.9	11.6	72	E			3		9			0.071	1.8	Covered	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +7.3 mm.; Thermometer, —1.2 Cent. Relative Humidity, —19 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.95	760.7	67.3	19.6	43	N	15	6.5			8		N	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.05	763.2	77.4	25.2		S			1		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.90	759.5	78.4	25.8	57	SW			2		1k		SW	0	0		Prof. C. V. A. van Dyck

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					49.0	9.4		NW	7	3.1		3ck	0			0	0	Fair	Hon. J. Ferguson.
Chatham, N. B.	29.92	760.0	29.98	761.5	51.0	10.6	46	NW	11	4.9		0	0			0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	29.90	759.4	29.94	760.5	51.7	10.9	50	NW	11	4.9		0	0			0.155	3.94	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.98	761.5	30.17	766.3	56.5	13.6	63	E			2	0	0			0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.80	756.9	29.97	761.2	45.5	7.5		W			4	0	0			0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.03	762.7	30.06	763.5	44.5	6.9	92	NW	10	4.5		0	5ks			0.06	1.5	Clear	J. McWilliams.
Fredericton, N. B.	30.01	762.2	30.07	763.8	51.2	10.7	40	NW	10	4.5		0	0			0.075	1.91	Clear	Prof. Harrison.
Fort Garry, Manitoba	28.74	730.0	29.53	750.0	58.5	14.7	91	Calm	0	0		2k	2ks	SW		0	0	Fair	James Stewart.
Granton, Ontario	29.03	737.3	30.12	765.0	54.0	12.2	61	SE			1	3cs	0			0	0	Fair	James Grant.
Halifax, N. S.	29.85	758.2	29.97	761.2	60.9	16.1	61	N	7	3.1		0	0			Inap.	Inap.	Clear	A. Allison.
Hamilton, Ontario	29.80	756.9	30.19	766.8	55.7	13.2	77	N			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.84	757.9	30.16	766.1	61.4	16.3	80	NE	5	2.2		0	0			0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.52	749.8	29.86	758.4	53.1	11.7	67	NW	6	2.7		4ck	0	NW		0	0	Fair	C. H. Rigby.
Montreal, Quebec	30.00	762.0	30.20	767.1	53.9	12.2	43	N	2	0.9		0	0			0	0	Clear	C. H. McLeod, C. E
Moose Factory, Ontario	30.02	762.5	30.06	763.5	54.5	12.5	59	S			1	2ck	0			0	0	Fair	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.48	748.8	30.16	766.1	57.0	13.9	69	E	7	3.1		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.45	748.0	30.19	766.8	58.7	14.8	53	NE			1	0	0			0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.48	748.8	30.17	766.3	58.1	14.5	88	E	4	1.8		10ck	0	NW		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.50	749.3	30.13	765.3	59.1	15.1	69	E	10	4.5		5ck	0	W		0	0	Fair	M. Payne.
Quebec, Quebec	29.81	757.2	30.13	765.3	49.0	9.4	57	N			3	0	0			0	0	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.74	755.4	30.20	767.1	45.0	7.2	72	Calm	0	0		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.88	758.9	30.05	763.3	52.0	11.1	51	N	14	6.3		0	0			0.06	1.5	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.42	747.3	30.12	765.0	59.1	15.1	59	S	10	4.5		9cs	0			0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.87	733.3	30.14	765.5	53.9	12.2	65	SE	5	2.2		3cs	0			0	0	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.82	757.4	29.86	758.4	57.7	14.3	55	N	10	4.5		5c	0	W		0.23	5.8	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.84	757.9	30.22	767.6	53.5	11.9	71	SE	5	2.2		7cs	Haze			0	0	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.09	738.9	30.15	765.8	56.1	13.4	68	E	11	4.9		7c	0	W		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.98	761.5	30.05	763.3	56.6	13.7	63	NW	5	2.2		1c	0	W		0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.49	749.0	29.74	755.4	58	14.4	82	W	0	0		10k	10s			0	0	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime.			29.65	753.1	47.5	8.6		SW			1					0	0		The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.13	765.3	30.21	767.3	65	18.3	40	NE	4	1.8		0	0			0.04	1.0	Clear	
Alpena, Michigan	29.44	747.8	30.08	764.0	55	12.8	74	S	6	2.7		5k	0	S		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.86	733 0	29.96	761.0	74	23.3	81	SE	9	4.0		8k	0	SE		0	0	Cloudy	
Atlantic City, New Jersey	30.17	766.3	30.18	766.6	65	18.3	63	NE	15	6.7		5c	0	W		0.17	4.3	Fair	
Augusta, Georgia	29.91	759.7	30.11	764.8	72	22.2	80	Calm	0	0		0	8s		SE	0	0	Fair	
Baltimore, Maryland	30.14	765.5	30.19	766.8	68	20.0	51	NE	8	3.6		8cs	0	SE	E	0.33	8.4	Fair	
Barnegat, New Jersey	30.14	765.5	30.16	766.1	67	19.4	64	NE	10	4.5		2cs	0	Calm		0.16	4.1	Clear	
Bismarck, Dakota	27.86	707.6	29.72	754.9	55	12.8	87	NW	20	8.9			10s		Calm	0	0	Cloudy	
Boerne, Texas	28.39	721.1	29.64	752.8	72	22.2	100	Calm	0	0			10s		NW	4.02	102.1	Cloudy	
Boise City, Idaho	27.19	690.6	30.15	765.8	44	6.7	60	Calm	0	0		5cs	0	Calm		0	0	Fair	
Boston, Massachusetts	30.00	762.0	30.15	765.8	64	17.8	48	N	11	4.9		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.65	727.7	29.65	753.1	74	23.3	95	E	6	2.7			10s		Calm	7.12	180.8	Threatening	
Breckenridge, Minnesota	28 66	728.0	29.61	752.1	59	15.0	70	S	20	8.9		0	0			0	0	Clear	
Brownsville, Texas	29.71	754.6	29.75	755.6	83	28.3	75	SE	12	5.4		0	0			0	0	Clear	
Buffalo, New York	29.46	748.3	30.15	765 8	58	14.4	42	E	7	3.1			10s		W	0	0	Cloudy	
Burkes, Arizona					58	14.4	32	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29 92	760.0	30.21	767.3	55	12.8	83	N	10	4.5		0	0			Inap.	Inap.	Clear	
Cairo, Illinois	29.44	747.8	29.81	757.2	71	21.7	95	S	6	2.7			10s		S	Inap.	Inap.	Cloudy	
Campo, California	27.37	695.2	29.94	760.5	37	2.8	81	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.10	764.5	30.10	764.5	74	23.3	76	SW	16	7.2		0	0			0	0	Clear	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	73	22.8	85	N	9	4.0		5ck	5s	N	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.12	765.0	30.13	765.3	76	24.4	77	SW	8	3.6		5c	0	W		0	0	Fair	
Cape May, New Jersey	30.11	764.8	30.14	765.5	65	18.3	58	NE	11	4.9		2k	2s	W	Calm	0.38	9.7	Fair	
Castroville, Texas	29.02	737.1	29.68	753.9	78	25.6	78	S	1	0.4			10s		S	0.12	3.0	Cloudy	
Cedar Keys, Florida	30.04	763.0	30.06	763.5	76	24.4	77	E	10	4.5		0	0			0	0	Clear	
Charleston, South Carolina	30.05	763.3	30.10	764.5	78	25.6	61	SW	4	1.8		2c	2s	Calm	SW	0	0	Fair	
Charlotte, North Carolina	29.20	741.7	29.98	761.5	75	23.9	68	SW	6	2.7		5cs	Haze	SW	Calm	0	0	Fair	
Chattanooga, Tennessee	29.18	741.1	29.95	760.7	70	21.1	95	SE	2	0.9			10s		S	1.73	43.9	Cloudy	
Cheyenne, Wyoming	23.91	607.3	29.85	758.2	51	10 6	28	NW	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.26	743.2	29.93	760.2	61.5	16.4	73	E	5	2.2			10s		Calm	0	0	Cloudy	
Chincoteague, Virginia	30.11	764.8	30.13	765.3	66	18.9	55	NW	25	11.2		8k	0	NW		0.45	11.4	Cloudy	
Cincinnati, Ohio	29.35	745.5	29.98	761.5	66	18.9	59	E	6	2.7			10n		Calm	0.01	0.3	Light rain	
Cleveland, Ohio	29.38	746.2	30.09	764.3	60	15.6	65	SE	6	2.7		5ck	0	W		0	0	Fair	
Coleman City, Texas	28.04	712.2	29.66	753.4	62	16.7	88	N	4	1.8			10n		Calm	0.86	21.8	Light rain	
Columbus, Ohio	29.20	741.7	30.02	762.5	62	16.7	56	E	12	5.4		5cs	Sm'e	Calm	Calm	0	0	Fair	
Concho, Texas	27.97	710.4	29.60	751.8	61	16.1	94	NW	4	1.8			Fog			0	0	Foggy	
Corsicana, Texas	29.37	746.0	29.81	757.2	73	22.8	85	S	8	3.6			10n		Calm	0.69	17.5	Light rain	
Davenport, Iowa	29.24	742.7	29.86	758.4	62	16.7	72	E	9	4.0			10s		Calm	Inap.	Inap.	Cloudy	
Dayton, Washington T'y					41	5.0	82	S			1	0	2s		W	0	0	Clear	
Deadwood, Dakota	25.18	639.6			50	10.0	79	Calm	0	0		2k	0	W		0	0	Clear	
Decatur, Texas	28.65	727 7	29.78	756.4	66	18.9	100	SW	8	3.6			10s		SW	2.13	54.1	Cloudy	
Delaware Breakwater, Del.	30.12	765.0	30.15	765.8	66	18.9	69	E	20	8.9		0	5s		NW	0.27	6.9	Fair	
Denison, Texas	28.98	736.1	29.74	755.4	69	20.6	95	W	3	1.3			10s		W	3.04	77.2	Cloudy	
Denver, Colorado	24.64	626.8	29.86	758.4	56	13.3	40	S	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	28.92	734.6	29.77	756.1	60	15.6	82	SE	2	0.9			10n		Calm	0.02	0.5	Light rain	
Detroit, Michigan	29.42	747.3	30.07	763.8	60	15.6	71	E	7	3.1		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.16	689.8	29.38	746.2	54	12.2	93	W	4	1.8		10cs	0	W		0	0	Cloudy	
Dubuque, Iowa	29.18	741.1	29.85	758.2	63	17.2	67	E	7	3.1			10s		Calm	0	0	Cloudy	
Duluth, Minnesota	29.17	740.9	29.84	757.9	45	7.2	84	NE	6	2.7		1cs	0	Calm		Inap.	Inap.	Clear	
Eagle Pass, Texas	28.98	736.1	29.67	753.6	77	25.0	86	N	9	4.0			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.00	762.0	30.06	763.5	50	10.0	68	NW	12	5.4		0	0			0.45	11.4	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.43	747.5	30.13	765.3	63	17.2	52	SE	9	4.0		5c	0	W		0	0	Fair	
Escanaba, Michigan	29.31	744.5	29.95	760.7	56	13.3	69	S	6	2.7		5c	2s	SW	SW	Inap.	Inap.	Fair	
Florence, Arizona	28.37	720.6	29.97	761.2	64	17.8	63	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	38	3.3	45	E	6	2.7		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.74	704.6	29.53	750.0	48	8.9	56	NW	22	9.8		10cs	0	NW		0.11	2.8	Cloudy	
Fort Custer, Montana	26.70	678.2			52	11.1	60	NW	4	1.8		0	0			0.63	0.0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765 3	55	12.8	81	Calm	0	0		0	0			0	0	Clear	
Fort Elliot, Texas	26.78	680.2	28.95	735.3	54	12.2	61	S	4	1.8		0	0			0.48	12.2	Clear	
Fort Gibson, Indian Ter	29.16	740.7	29.67	753.6	66	18.9	95	W	8	3.6			10s		Calm	1.52	38.6	Cloudy	
Fort Grant, Arizona	25.18	639.6	29.98	761.5	57	13.9	10	W	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.57	725.7	29.81	757.2	63	17.2	94	N	4	1.8			10s		Calm	1.12	28.4	Cloudy	
Fort Keogh, Montana	27.11	688.6			50	10.0	37	N	12	5.4		0	8ks		NE	0	0	Fair	
Fort McKavett, Texas	27.60	701.0	29.45	748.0	66	18.9	84	E	1	0.4		4k	0	W		0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	27.87	707.9			54	12.2	73	W	4	1.8		2c	5ks	Calm	Calm	0	0	Clearing	
Fort Verde, Arizona					54	12.2	32	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.79	756.7	29.83	757.7	80	26.7	82	S	10	4.5		5cs	5ks	Calm	S	0	0	Cloudy	
Grand Haven, Michigan	29.35	745.5	29.98	761.5	61	16.1	66	E	6	2.7		0	8s		Calm	0	0	Fair	
Helena, Montana					46	7.8	40	SW	10	4.5		8cs	0	W		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.12	739.6	29.87	758.7	65	18.3	63	E	10	4.5			10s		S	0	0	Cloudy	
Indianola, Texas	29.78	756.4	29.80	756.9	79	26.1	87	S	11	4.9		2c	5ks	Calm	S	0	0	Fair	
Jacksboro, Texas	28.68	728.5	29.77	756.1	65	18.3	94	NE	4	1.8			10s		NE	2.12	53.8	Cloudy	
Jacksonville, Florida	30.06	763.5	30.09	764.3	78	25.6	65	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.17	740.9	29.76	755.9	61	16.1	88	E	8	3.6			10n		E	0.06	1.5	Light rain	
Key West, Florida	29.94	760.5	29.97	761.2	79	26.1	78	E	14	6.3		2k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.09	764.3	30.12	765.0	73	22.8	81	W	9	4.0		10k	Haze	W	Calm	0	0	Cloudy	
Knoxville, Tennessee	29.00	736.6	29.97	761.2	70	21.1	93	E	1	0.4			10ks		SW	0.23	5.8	Cloudy	
La Crosse, Wisconsin	29.16	740.7	29.87	758.7	62	16.7	67	S	2	0.9		Haze	2s	Calm	Calm	0	0	Fair	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	51	10.6	46	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.32	744.7	29.64	752.8	82	27.8	71	SE	7	3.1			10s		SE	0	0	Cloudy	
Leavenworth, Kansas	28.81	731.8	29.62	752.3	59	15.0	88	E	5	2.2			10s		SE	0.30	7.6	Cloudy	
Lewiston, Idaho	29.24	742.7	29.89	759 2	46	7.8	60	S	2	0.9		0	0			0	0	Clear	
Little Rock, Arkansas	29.41	747.0	29.71	754.6	74	23.3	90	S	9	4.0		0	8s			0	0	Fair	
Los Angeles, California	29.60	751.8	29.93	760.2	54	12.2	100	NE	1	0.4			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.34	745 2	29.89	759.2	62	16.7	94	E	6	2.7			10n		Calm	1.39	35.3	Light rain	
Lynchburg, Virginia	29.44	747.8	30.10	764.5	69	20.6	80	NE					10s		Calm	0.80	20.3	Cloudy	
Madison, Wisconsin	28.93	734.8	29.89	759.2	62	16.7	77	SE	7	3.1		8c	0	Calm		0	0	Fair	
Marquette, Michigan	29.19	741.4	29.86	758.4	62	16.7	61	SW	20	8.9		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.18	715.8	29.85	758.2	70	21.1	95	SW	2	0.9			10ks		W	0.42	10.7	Cloudy	
Memphis, Tennessee	29.45	748.0	29.77	756.1	73	22.8	95	SE	11	4.9			10s		S	Inap.	Inap.	Threatening	
Milwaukee, Wisconsin	29.24	742.7	29.95	760.7	58	14.4	76	SE	8	3.6		1c	8s	W	Calm	0	0	Cloudy	
Mobile, Alabama	29.92	760.0	29.96	761.0	79	26.1	82	SE	10	4.5			10s		SE	0.01	0.8	Threatening	
Montgomery, Alabama	29.73	756.4	30.00	762.0	75	23.9	85	SE	9	4.0		8k	0	S		0.08	2.0	Fair	
Morgantown, West Virginia	29.10	739.1	30.07	763.8	66	18.9	69	NE	3	1.3		1c	0	NW		Inap.	Inap.	Clear	
Mt Washington, N H	23.81	604.8	30.17	766.3	26	— 3.3	76	NW	40	17.9		0	0			0.19	4.8	Clear	
Nashville, Tennessee	29.38	746.2	29.89	759.2	73	22.8	85	S	7	3.1			10ks		SW	1.67	42.4	Cloudy	
New Haven, Connecticut	30.05	763.3	30.16	766.1	66	18.9	50	N	7	3.1		5cs	0	NW		0	0	Fair	
New London, Connecticut	30.09	764.3	30.14	765.5	67	19.4	50	N	5	2.2		1ck	0	W		Inap.	Inap.	Clear	
New Orleans, Louisiana	29.85	758.2	29.91	759.7	77	25.0	86	SE	6	2.7		10c;cs	0	W		0.31	7.9	Cloudy	
Newport, Rhode Island	30.08	764.0	30.13	765.3	65	18.3	49	N	12	5.4		2c	0	Calm		0.07	1.8	Clear	
New River, North Carolina					73	22.8	85	SW			1	5cs	1ks	W	SW			Cloudy	
New York, New York	29.99	761.7	30.16	766.1	66	18.9	45	N	4	1.8		5c	0	NW		0.09	2.3	Fair	
Norfolk, Virginia	30.04	763.0	30.10	764.5	74	23.3	76	NE	5	2.2		5k	5ks	SW	NE	0	0	Cloudy	
North Platte, Nebraska	26.84	681.7	29.32	744.7	55	12.8	74	S	4	1.8		5c	2s	W	Calm	0	0	Fair	
Olympia, Washington Ter	30.19	766.8	30.23	767.8	47.0	8.3	62	W	4	1.8		0	8s		N	0	0	Cloudy	
Omaha, Nebraska	28.62	726.9	29.67	753.6	61	16.1	88	E	7	3.1			10n		Calm	0.16	4.1	Light rain	
Oswego, New York	29.90	759.4	30.23	767.8	55	12.8	68	NW	2	0.9		Haze	0			0	0	Clear	
Pembina, Dakota	28.68	728.5	29.47	748.5	58	14.4	82	S	10	4.5		0	5ks		W	0.01	0.3	Fair	
Pensacola, Florida	29.97	761.2	30.00	762.0	77	25.0	82	SE	12	5.4		8k	0	S		0	0	Fair	
Philadelphia, Pennsylvania	30.12	765.0	30.17	766.3	64	17.8	48	NE	12	5.4		2c	0	W		0	0	Fair	
Phœnix, Arizona	28.72	729.5	30.43	772.9	79	26.1	27	SE	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.68	449.1	29.89	759.2	18	— 7.8	68	NW	54	24.1		1k	0	Calm		0.04	1.0	Clear	
Pilot Point, Texas	29.02	737.1	29.84	757.9	69	20.6	95	W	4	1.8			10s		Calm	0	0	Cloudy	
Pioche, Nevada	24.02	610.1	29.79	756.7	53	11.7	31	W	3	1.3		1ck	0	Calm		0	0	Clear	
Pittsburg, Pennsylvania	29.32	744.7	30.11	764.8	62	16.7	67	NW	3	1.3		0	0			0	0	Clear	
Port Huron, Michigan	29.44	747.8	30.10	764.5	60	15.6	49	SE	6	2.7		5c	0	NW		0	0	Fair	
Portland, Maine	30.07	763.8	30.12	765.0	62	16.7	32	NW	14	6.3		0	0			0.05	1.3	Clear	
Portland, Oregon	30.23	767.8	30.31	769.9	48	8.9	59	W	8	3.6			10s		N	0	0	Cloudy	
Portsmouth, North Carolina					73	22.8	81	SW	13	5.8		5k	0	SW		0	0	Fair	
Prescott, Arizona	24.76	628.9	30.12	765.0	50	10.0	39	SW	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.01	762.2	76	24.4	77	E	6	2.7		10ck	0	E		0	0	Cloudy	
Red Bluff, California	29.57	751.1	29.92	760.0	67.5	19.7	36	NW	10	4.5		0	1s		Calm	0	0	Clear	
Rio Grande City, Texas	29.56	750.8	29.76	755.9	80	26.7	82	SE	7	3.1		0	8s		SE	0	0	Fair	
Rochester, New York	29.58	751.3	30.19	766.8	57	13.9	68	E	2	0.9		9cs	0	W		0	0	Cloudy	
Roseburg, Oregon	29.74	755.4	30.33	770.4	41.5	5.3	78	Calm	0	0		1cs;hz	0	Calm		0	0	Clear	
Sacramento, California	29.78	756.4	29.86	758.4	68	20.0	70	N	8	3.6		2c	0	Calm		0	0	Clear	
St. Louis, Missouri	29.21	741.9	29.76	755.9	62	16.7	88	E	8	3.6			10n		Calm	0.32	8.1	Light rain	
St. Paul, Minnesota	28.97	735.8	29.77	756.1	60	15.6	71	E	5	2.2		8c	0	W		0	0	Fair	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	54	12.2	38	N	4	1.8		2k	0	Calm		0	0	Clear	
San Antonio, Texas	29.14	740.1	29.80	756.9	77	25.0	82	Calm	0	0			10s		S	0.01	0.3	Cloudy	
San Diego, California	29.89	759.2	29.96	761.0	61	16.1	82	W	1	0.4			10s		W	0	0	Cloudy	
Sandusky, Ohio	29.41	747.0	30.07	763.8	61	16.1	66	E	8	3.6		10ck	0	NW		0	0	Cloudy	
Sandy Hook, New Jersey	30.14	765.5	30.17	766.3	63	17.2	57	N	8	3.6		5c	0	NW		0	0	Fair	
San Francisco, California	29.87	758.7	29.93	760.2	56	13.3	81	W	1	0.4		2c	0	NW		0	0	Clear	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	43	6.1	59	NE	6	2.7		0	0			0.05	1.3	Clear	
Savannah, Georgia	30.02	762.5	30.11	764.8	79	26.1	70	S	2	0.9		2cs	Haze	Calm	Calm	0	0	Fair	
Shreveport, Louisiana	29.61	752.1	29.82	757.4	77	25.0	86	S	4	1.8			10s		Calm	0	0	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina																			
Socorro, New Mexico																			
Springfield, Illinois	29.15	740.4	29.80	756.9	64	17.8	60	E	12	5.4			10s		SE	0	0	Cloudy	
Springfield, Massachusetts	30.05	763.3	30.18	766.6	66	18.9	45	N	6	2.7		0	0			0.21	5.3	Clear	
Stockton, Texas	29.89	683.0	29.89	759.2	62	16.7	88	NW	5	2.2			10s		Calm	0.02	0.5	Cloudy	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	62	16.7	77	N	6	2.7		0	Haze			0.14	3.6	Clear	
Toledo, Ohio	29.36	745.7	30.02	762.5	64	17.8	58	SE	8	3.6		5c	0	SW		0	0	Fair	
Tucson, Arizona	27.47	697.7	30.02	762.5	68	20.0	26	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.80	756.9	30.30	769.6	48	8.9	67	W	10	4.5		0	0			0	0	Clear	
Uvalde, Texas	28.86	733.0	29.63	752.6	76	21.4	91	SE	4	1.8			10m		Calm	0.02	0.5	Light rain	
Vicksburg, Mississippi	29.63	752.6	29.88	758.9	75	23.9	90	S	8	3.6			10s		S	0	0	Cloudy	
Virginia City, Montana	24.15	613.4	29.63	752.6	43	6.1	56	W	6	2.7			10s		Calm	0	0	Cloudy	
Visalia, California	29.46	748.3	29.82	757.4	62	16.7	56	Calm	0	0		0	0			0	0	Clear	
Washington, D. C.	30.05	763.3	30.16	766.1	69	20.6	48	E	10	4.5		10k	0	E		0.04	1.0	Cloudy	
Wickenburg, Arizona					71	21.7	37	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.04	763.0	30.11	764.8	75	23.9	77	SW	3	1.3		5c	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	41	5.0	49	SW	3	1.3		2ck	0	SW		0	0	Clear	
Wood's Holl, Massachusetts	30.08	764.0	30.12	765.0	65	18.3	49	NE	14	6.3		2cs	0	NW		Inap.	Inap.	Fair	
Yankton, Dakota	28.48	723.4	29.72	754.9	61	16.1	66	S	4	1.8		10cs	0	W		0	0	Cloudy	
Yuma, Arizona	29.65	753.1	29.79	756.7	67	19.4	50	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.02	559.3			57.5	14.2	80	Calm	0	0		5k	2ks			0.30	7.6	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.94	760.5	29.99	761.7	78	25.6	82	Calm	0	0			0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.92	760.0	29.93	760.2	79	26.1	83	Calm	0	0		5c	2ks	Calm		0.20	5.1	Fair	James Gall.
Navassa, W. I.	29.85	758.2	29.93	760.2	78	25.6	86	E	7	3.1		5k	2s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.00	762.0	30.00	762.0	80	26.7	82	E			2	6ck	3s	E		0.760	17.78	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia"	29.41	747.0	29.96	761.0	79	26.1	95	Calm			0		10ks			0	0		Francesco J. Cisneros.
Rivas, Nicaragua‖					75	24		W					8k		W	0	0	Covered	Earl Flint.
Santiago de Cuba, W. I.	29.92	760.0	29.95	760.7	77	25.0	86	NNE	2.4	1.1		8cs	8s	SW		0.625	15.88		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.63	752.6	29.68	753.9	33.0	0.6	95	NW	4	1.8		2c	0	NW		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.8 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,500 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.03	762.7	78	25.6	86	SE	14	6.3			8d		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.15	765.8	63	17.2	83	N	4	1.8			0			0	0			Clear.	
Naval Hospital, Yokohama, Japan	30.02	762.5	66	18.9	89	SW			1		0			0	0			Clear.	
§ Adams, Punta Arenas, Costa Rica	29.93	760.2	79	26.1	91	Calm			0		8					Ground	SSE	Cloudy	
§ Alaska, Callao, Peru *	29.96	761.0	62	16.7	94	SSW			1		10					Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.95	760.7	70	21.1	80	SW			1		8		Calm	0	0	Smooth		Fair	
Alliance, Lynn Haven Bay, N. 37° W. 76°	30.12	765.0	73	22.8	90	NNE			1		10		Calm	0	0			Cloudy	
§ Ashuelot, Shanghai, China	29.76	755.9	72	22.2	85	E			2		10							Cloudy	
Colorado, New York, N. Y.	30.12	765.0	63	17.2	78	NNE	3	1.3			5		NW	0	0			Hazy	
§ Constitution, New York, N. Y.	30.16	766.1	61	16.1	55	N	9	4.0			8		NW					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.11	764.8	75	23.9	81	ENE	4.8	2.1			8		ENE	0	0			Fair	
Independence, § Mare Isl'd, Navy Yard, Cal.	29.92	760.0	59	15.0	100	W	1.2	0.5			1		W	0	0			Misty	
§ Jamestown, Sitka, Alaska *	30.32	770.1	43	6.1	92	NE			1		10					Smooth		Cloudy	
Kearsarge, Key West, Fla	30.00	762.0	78	25.6	86	E			4		0					Smooth		Clear	
§ Lackawana, N. 15° 25′, W. 96° 10′ †	29.98	761.5	80	26.7	87	NNW			4		10		NNW			Smooth	NNW	Cloudy	
§ Marion, S. 50° 54′. W. 57° 45′	29.53	750.0	45	7.2	100	N			4		10			Blank	Blank	Mod'ate	N	Dense fog	
§ Michigan, Erie, Pa	30.07	763.8	58	14.4	70	ESE			3		2		S					Clear	
§ Monocacy, N. 32° 05′, E. 122° 31′	29.81	757.2	66	18.9	79	ESE			3		10			0	0	Smooth		Foggy	
§ New Hampshire, Port Royal, S. C.	30.21	767.3	76	24.4	73	S	18	8.0			2		Calm	0	0			Fair	
Nipsic, Villafranca, France	29.92	760.0	69	20.6	75	ESE			3		2					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	29.97	761.2	64	17.8	89	SW			1		10		SW			Long	W	Cloudy	
§ Palos, Shanghai, China	29.75	755.6	72	22.2	90	SE			3		10							Cloudy	
§ Passaic, Washington, D. C.	30.14	765.5	70	21.1	61	NE			4		8		SW	0	0			Cloudy	
§ Portsmouth, Bermuda	30.19	766.8	71	21.7	85	NNW			3		10			0	0	Smooth		Cloudy	
§ Powhatan, N. 37° 13′, W. 76° 24′	30.10	764.5	74	23.3	90	ESE			2		10		ESE					Cloudy	
§ Quinnebaug, N. 50° 22′, W. 2° 03′	30.50	774.7	58	14.4	76	WNW			1		8		Calm			Long		Fair	
§ Richmond, Shanghai, China	29.72	754.9	72	22.2	95	SSE			5		10		ESE					Cloudy	
§ Rio Bravo, Brownsville, Texas †	29.91	759.7	78	25.6	??	SE	3	1.3			5		SE	0	0			Fair	
§ Saratoga, N. 35° 59′, W. 7° 39′	30.19	766.8	69	20.6	70	ENE			6–7		0			0	0	Rough	NE	Squally	
§ Shenandoah, Montevideo, Uruguay	29.93	760.2	58	14.4	100	W			3		10					Smooth		Foggy	
§ St. Louis, League Island, Pa	30.11	764.8	67	19.4	95	NE	7	3.1			2		NW	0	0			Clear	
Swatara, Bangkok, Siam †	29.68	753.9	81	27.2	96	SSW			2		10		SSW			Mod'ate	SW	Cloudy	
§ Tennessee, Hampton Roads, Va.	30.10	764.5	75	23.9	81	NNW	6	2.7			5		Calm	0	0	Smooth		Fair	
Ticonderoga, Yokohama, Japan	29.96	761.0	69	20.6	95	SSW			1		2		SSE			Smooth		Hazy	
§ Trenton, Villafranca, France	30.00	762.0	69	20.6	80	Calm			0		5			0	0	None		Fair	
§ Vandalia, Huntington, L. I.	30.16	766.1	62	16.7	56	NE			2		7		Calm					Cloudy	
§ Wabash, Boston, Mass.	30.13	765.3	62	16.7	51	NNW	7	3.1			2			0	0			Fair	
§ Wachusett, Possession Bay, Strait of Magellan.	29.25	742.9	41	5.0	91	SSW			2–3		8		N; W	0	0	Smooth		Cloudy	
Wyoming, Villafranca, France	29.91	759.7	67	19.4	79	ENE			2–4		5		E			Smooth	E	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	BAROMETER REDUCED TO SEA-LEVEL.		TEMPERATURE OF THE AIR.		RELATIVE HUMIDITY.	WIND.				CLOUDS.				RAIN-FALL OR MELTED SNOW IN THE 24 HOURS.		SEA-SWELL.		WEATHER.	OBSERVER.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	CHARACTER.	DIRECTION FROM—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
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S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng.*†	30.53	775.4	60	15.6	94	NW			3		1		NW	0	0			Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 44° 13', W. 44° 52'...*†	30.02	762.5	68	20.0	90	SW			1		5		NW	1 h'r	1 h'r	Smooth	SE	Foggy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			H. Buckland.
S. S. Scythia, W. H. O. Hains																			
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 37° 51', W. 63° 10'	30.00	764.3	74	23.3	95	N			4		8		NE	0	0	Smooth	W	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strasburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 30° 35', E. 131° 23'.....†	29.95	760.7	74	23.3	81	ESE			4		2		ESE			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 30° 35', W. 156° 58'.....†	29.90	759.4	61	16.1	88	SW			4		4k		SW	0	0	Mod'rate Smooth	SW	Fine	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, N. 44° 21', W. 124° 10'	30.27	768.8	49	9.4	60	NW			6		10k		WNW			Heavy	NNW	Cloudy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Port Harford, Cal.....†	29.96	761.0	53	11.7		Calm			0		Fog					Heavy	NW	Foggy	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California G. Debney, Astoria, Oregon.....†	30.25	768.3	46	7.8		NW			2		5		NW					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San Jose, Guatemala...†	29.79	756.7	77	25.0	91	ENE			1		10		Calm			Light	SW	Cloudy	F. A. Johnston. Banneman.
§ S. S. Australia																			
§ S. S. China, W. B. Seabury																			
§ S. S. City of Chester, J. M. Lacklan																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, S. 26° 50', W. 178° 30'... .†	29.76	755.9	70	21.7	90	SW			5		8		SW	Light	Light	Heavy	SSW	Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 16° 10', W. 95° 15'.....†	29.95	760.7	81	27.2	100	NW			2		8		NW	6½ h'rs	6½ h'rs	Smooth	SW	Rainy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 28° 05', E. 124° 17'....†	29.84	757.9	73	22.8	95	SE			5		5		SW			Smooth		Fair	
§ S. S. City of Sidney, H. C. Dearborn S. 21° 04', W 173° 40'...*†	29.78	756.4	76	24.4		SW			5		2		SW	0	0	Mod'ate	SW	Clear	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 38° 45', W 136° 37'...†	30.63	778.0	58	14.4	76	E			2		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle																			
§ S. S. Dakota, D. E. Griffiths																			
§ S. S. Granada, J. M Cavarty																			D. E. Griffiths.
§ S. S. Idaho, Seattle, Washington Ter.†	30.17	766.3	56	13.3		Calm			0		0			0	0			Clear	
§ S. S. Zealandia, R. C. Ghest																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes, N. 43° 19', W 36° 40'.....†	30.13	765.3	64	17.8		ESE			1		8		E	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 48° 21', W. 32° 04'.....†	30.05	763.3	56	13.3		Var.			2		Mist		W			Long	W	Drizzling	H. N. Goulden.
S. S. Britanic, H. Perry, N. 40° 44', W. 68° 21'..... †	30.16	766.1	50	10.0		Calm			0		8		W			Smooth		Misty	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving Mine Head, Eng.....*†	30.54	775.7	56	13.3		W			1				E	0	0	Light	E	Clear	G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 42° 33', W. 69° 35'.....†	30.21	767.3	62	16.7		NNE			1		0			0	0	Long	NE	Clear	Mehaffey.
Schr Adele Fuller, J. Jorgensen, N. 31° 28', W. 79° 37'.....†	30.11	764.8	77	25.0	65	SE	2	0.9			5k		Calm	0	0	swell	SE	D. clouds	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis Arroyo, Porto Rico, W.I†	29.87	761.2	81	27.2		E			3		10		SE	Heavy	Heavy	Rough	SE	Cloudy	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 25° 05', E. 3° 52'.....*†	30.12	765.0	68	20.0		ENE			4		0			0	0	Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Port Hastings, Nova Scotia†	30.00	762.0				NW			5		2		S					Fair	S. S. Miner.
Brigantine George, W. H Champlin, N. 26° 48' W. 69° 52'.....†	30.26	768.6	76	24.4		ENE			3		8		ENE	Showers.	Showers.	Smooth	SE	Squally	
Hippolyta																			
Iron Cross, W. Randall																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

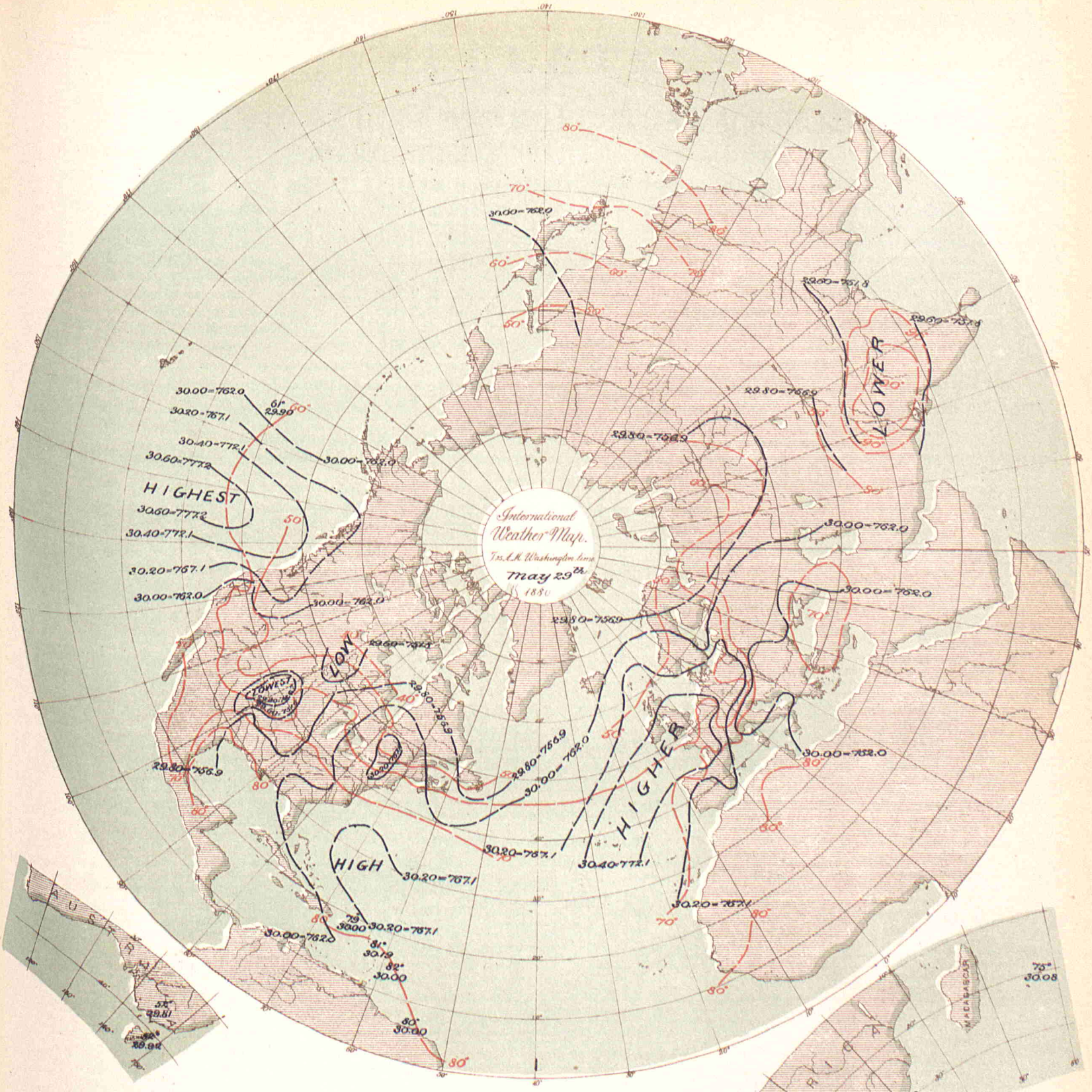
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 30, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time

1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco			30.05	763.3				NE			3		4			0	0	Cloudy	Dr. Ollive.
Nemours			30.02	762.6	70.5	21.4	75	Calm			0		0			0	0	Clear	Metge.
Algiers			30.07	763.8	68.7	20.4	64	ENE			4		0			0	0	Clear	Nicolas.
La Calle			30.12	765.0	72.1	22.3	75	NW			4		4			0	0	Cloudy	Fonfrède.
Tunis			30.07	763.7															Jacques.
Sfax			30.15	765.7															Gau.
Saida			30.01	762.2															Bernard.
Tebessa			30.10	764.6	67.6	19.8	54	ESE			2		7			0.146	3.7	Very cloudy	Watrin.
Geriville					78.8	26.0	92	ESE			1		1			0.118	3.0	Very fair	Brugniaux.
Laghouat			30.07	763.6	78.6	25.9	32	S			1		10			0.476	12.1	Covered	Suart.
Biskra			30.05	763.2	83.1	28.4	43	E			2		6			Inap.	Inap.	Very cloudy	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.46	748.2	30.01	762.2	54.5	12.5	77	N			3		10			0.118	3.0	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.32	744.7	30.09	764.3	51.1	10.6	85	NNW	4.0	1.8			10			0.016	0.4		Dr. Wierzbicki.
Eperies	29.05	737.8	29.91	759.6	63.0	17.2	59	N			5	c	6s		S	0	0		Julius Mikolik.
Gratz	28.79	731.3	30.04	763.0	55.8	13.2	68	NW			4		10			0.252	6.4		Andreas Rospini.
Hermannstadt	28.45	722.5	29.81	757.1	73.6	23.1	44	ESE			2		5			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.81	731.9	30.18	766.6	46.9	8.3	92	Calm			0		10			0.921	23.4		The Staff.
Lemberg	28.91	734.3	29.86	758.5	69.8	21.0	58	NE			1		8			Blank	Blank		Dr. T. Stanecki.
Pola	29.74	755.4	29.85	758.2	63.0	17.2	59	ENE			4		10			0	0		I.R. Hydrographic Office.
Szathmar	29.43	747.5	29.87	758.8	76.3	24.6	53	NW			3		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.61	752.1	29.88	758.9	71.2	21.8	67	S			2		8			0	0		Karl Stancel.
Trieste	29.82	757.3	29.92	759.9	66.8	19.8	85	ENE			3		10			0.697	17.7	Raining	P. Busin.
Vienna	29.40	746.7	30.07	763.6	48.2	9.0	86	NW			3		10			0.295	7.5		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon																			Prof. M. Passau.
Brussels	30.13	765.3	30.33	770.4	57.2	14.0	42	ENE			3		5		NE	0	0		Royal Observatory
Furnes	30.36	771.2	30.39	771.6	64.9	18.3	44	NNE			3		3			0	0		M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed November 30, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.04	763.0	30.13	765.3	55.3	12.9		SSE	25	11.2			3			0.010	0.25	Blue sky	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	29.80	756.9	30.03	762.7	53.3	11.8		S	19	8.5									S. Call.
Bidston (Liverpool Obs)			30.22	767.6	59.3	15.2		SW	16	7.2			10					Overcast	John Hartnup.
Bolton (Sharples)	29.68	753.9	30.20	767.1	59.5	15.3		SW	9	4.0			8					Overcast	Thomas Mackereth.
Bradford, Yorkshire																0.43	10.9		J. McLandsborough.
Bridgetown, Barbadoes	29.94	760.5	29.97	761.2	82	27.8		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.20	767.1	30.30	769.6	67.0	19.4		SSW			1		7					D. clouds	H. Todd.
Cardington			30.26	768.6	65.6	18.9		SW			0–1		8					Overcast	John McLaren.
Chatham (School M. E.)	30.20	767.1	30.34	770.6	59.0	15.0		Calm			0		8k					D. clouds	Sapper W. Gibson, R. E.
Donaghadee	30.05	763.3	30.09	764.3	51	10.6		SW			6		10					Gloomy	J. Mac Gowan.
Dover	30.28	769.1	30.31	769.9	56	13.3		ESE			2		0?					¼ clouded?	J. Costello.
Falmouth (Observatory)	30.10	764.5	30.33	770.4	55.9	13.3		S			2		10					Overcast	The Staff.
Fort Napier, Natal	27.79	705.8	29.99	761.7	65.0	18.3		NE			1		3					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.71	754.6	29.94	760.5	87	30.6		Calm			0		5					D. clouds	
Galway (Queen's College)			29.99	761.7	55	12.8		SW			3		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean ‖	29.93	760.2	29.99	761.7	71.5	21.9		E			3		3					D. clouds	Pvt. O Baldwin.
Glasgow, (Observatory)	29.89	759.2	30.10	764.5	51.2	10.7		S			4		10k					Gloomy	D. G. Maclean.
Great Yarmouth	30.35	770.9	30.35	770.9	53	11.7		SSE			4		0					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	30.14	765.5	30.32	770.1	61.8	16.6		SW			1		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.10	764.5	30.32	770.1	60	15.6		SSE			2		0					Blue sky	Dr. S. E Hoskins, F.R.S.
Helston	30.48	774.2	30.60	777.2	58	14.4		S			4		6k			0.29	7.4	Fair	M. P. Moyle.
Holyhead	30.16	766.1	30.20	767.1	54	12.2		SSW			5		10					Overcast	John Tilston.
Jersey	30.09	764.3	30.38	771.6	60.0	15.6		S			1	4ck						D. clouds	J. Fisher.
Kew (Observatory)	30.28	769.1	30.31	769.9	63.3	17.4		S	8	3.6			8					Threatening	The Met'g'l Office.
Leicester (Museum)	29.97	761.2	30.22	767.6	63.8	17.7		SW			1		5					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.88	758.9	29.95	760.7	74	23.3		NW			2		0					Blue sky	A. King.
Nairn	29.91	759.7	30.00	762.0	55	12.8		S			3		10					Overcast	W. D. Penny.
Nassau, Bahamas			30.04	763.0	80.0	26.7		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.08	764.0	30.27	768.8	66.3	19.1		SW			3	c	7k		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.74	755.4	30.25	768.3	63.2	17.3		SSW			4		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	30.06	763.5	30.32	770.1	63	17.2		SSW			1		3					Blue sky	The Staff, for E. J. Stone, Esq.
Plymouth	30.26	768.6	30.33	770.4	56.0	13.3		SE			3		10					Overcast	John Merrifield.
*Roche's Point	30.08	764.0	30.19	766.8	55	12.8		SSW			6		10					Raining	Wm. Kennedy.
St. Ann's Head	30.11	764.8	30.27	768.8	52	11.1		S			5		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys			30.05	763.3	54.9	12.7		S	31	13.9			10					Overcast	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.82	757.4	29.88	758.9	68.4	20.2		SSW			1		2					D. clouds	Serg't W. H. Lyne.
Sheffield	29.99	761.7	30.27	768.8	58.8	14.9		SW			2		4			0.19	4.8	D. clouds	W. F. Cooper.
Silloth Rectory	30.15	765.8	30.18	766.6	55.6	13.1	68	SW			6		9			0.207	5.26	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.23	767.8	58.4	14.7		SW	12	5.4			7					Misty	Rev. S. J. Perry.
Straifield Turgiss	30.10	764.5	30.32	770.1	64.3	17.9		SW			2–4		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.29	769.4	30.31	769.9	60	15.6		S			2		10					Gloomy	W. Newcombe.
Valencia (Observatory)	30.08	764.0	30.10	764.5	54.6	12.6		SW	13	5.8			10			Blank	Blank	Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)																			
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.02	762.5	57.0	13.9	86	SE			2		4k			0.01	0.3	Star light	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.15	765.8	53.2	11.2		SW			3		10cs			0.04	1.0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.90	759.4	30.09	764.4	75.4	24.1	68	E	19.0	9.5		0	4		E	0	0	Squally	C. Meldrum.
Melbourne (Observatory)	29.77	756.1	29.86	758.4	53.6	12.0	90	S	12	5.4			10			0.05	1.3	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.85	758.2	52	11.1		S			4		10			0.4	10.		J. Youngclause.
North Unst, Shetland I's			30.18	766.6				SE			6	3	2	S		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points, the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore. N 39° 10′, W. 46° 15′			30.03	762.7	69	20.6		SW			3		6			2	SW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German. S. 13° 51′, E. 1° 34′			30.07	763.8	72	22.2		SE			3		5					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	67.1	19.5	95	SE			1	10ck;s				0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	30.23	767.7	30.27	768.9	55.8	13.2	49	N			2		3						
Fanöe	30.31	769.8	30.33	770.3	54.5	12.5	65	WNW			4		7						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.65	753.0	29.69	754.1	48.9	9.4	82	SE			4		8						
Thorshavn (Faröe)	29.93	760.2	29.97	761.1	49.8	9.9	91	S			3		10						
Vestervig	30.21	767.2	30.30	769.6	50.7	10.4	71	NW			2		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.78	756.5	30.34	770.5	60.8	16	41	NE			1		2k		NE	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	30.22	767.6	30.33	770.4	66.2	19	32	NE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	30.08	763.9	30.33	770.4	60.6	15.9	34	E			1	1c				0	0		Klein, Commandant.
Avignon, Normal School	29.91	759.8	29.99	761.8	64.0	20	49	N			7		2n		N	0	0		Giraud, Director.
Bar-sur-Seine	29.70	754.3	30.25	768.4	60.1	15.6	33	E			2		5k		E	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	30.07	763.6	30.33	770.3	59.5	15.3	35	E			2		0			0	0	Clear	Frère Eugene Marie.
Besançon, Normal School	29.34	745.3	30.23	767.9	60.4	15.8	59	E			1		8		NE	0.08	2.	Very cloudy	A. Carré, Director.
Bordeaux	30.00	762.0	30.20	767.0	68.4	20.2	27	E			1		0			0	0	Clear	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.27	743.5	30.21	767.2	63.7	17.6	40	N			4		5kn	N	N	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.73	755.1	30.28	769.1	59.9	15.5	53	NNE			4		2k		NNE	0	0	Slightly cld'y	M. Gence, Director.
Brest, Naval Observatory	30.10	764.4	30.34	770.5	69.4	20.8	55	SW			1		1			0	0		Ch. de Rermaree, Dir.
Caen, Normal School	30.10	766.7	30.26	768.7	63.0	17.2	80	NW			1		5		E	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.70	754.3	30.10	764.5	70.9	21.6	37	W			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	29.93	760.1	30.24	768.2	64.2	17.9	43	NE			2		2		NE	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.71	754.7	30.27	768.9	64.4	18	91	E			1		1		W	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.83	732.3	30.17	766.4	62.6	17.0	50	NNE			2		5		N	0	0		Alluard, Director.
Commercy, Normal School	29.39	746.6	30.25	768.3	60.1	15.6	33	N			4		2k		N	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.82	731.9	29.96	760.9	68.0	20	31	NW			3		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.34	745.0	30.09	764.3	59.7	15.4	55	NNW			1		10kn			0	0	Covered	Ablard, Director.
La Roche-sur-Yon, N. Sch'l	30.10	764.4	30.31	769.8	65.5	18.6	39	NNE			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.03	762.7	30.34	770.5	63.0	17.2	34	NNE			1		2		E	0	0	Slightly cld'y	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.31	744.4	30.22	767.5	62.1	16.7	46	NE			2	2ck			S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	30.24	768.2	30.35	770.1	63.7	17.6	57	S			3		2		S	0	0	¼ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.53	750.1	30.15	765.7	63.7	17.6	34	N			4		1n		NW	0	0	Clear	Ch. André, Director.
Macon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.65	753.0	29.91	759.7	70.9	21.6	30	NW			4		0			0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	29.15	740.4	30.10	766.8	59.4	15.2	53	NE			3		k		NE	0	0		Barbier, Director.
Mont-Louis	24.91	632.8	30.15	765.8	55.4	13.0	29	NW	9.4	4.2			0			0	0		M. Cave, for Dr. Fines.
Nice	29.87	758.7	29.91	759.6	66.9	19.4	72	W			3		10	NW	W	0.106	2.7	Light rain	Capt. Boissiere, Director.
Nismes, Normal School	29.80	756.9	30.00	762.0	70.3	21.3	18	NW			7		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.98	761.4	30.08	764.1	69.3	20.7	16	N	18.6	8.3			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.63	574.7			43.3	6.3							1		NE	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	29.03	737.4	30.08	764.1	64.4	18	34	N			6		2k	N	N	0	0	Slightly cl'dy	M. Tallieu
Puy de Dome (Summit) Obs	25.28	642.1			39.2	4.0	57	NE			6		5			0	0		Alluard, Director.
Rochefort, Naval Obs'y	30.28	769.2	30.32	770.0	69.8	21.0	28	E			1		0			0	0	Clear	Lt E. Devante, Director
Rouen, Normal School	30.39	771.8	30.47	774.0	65.8	18.8	42	NNW			2		5		NNW	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.30	769.5	30.32	770.2	62.6	17.0	50	N			2		2	N	N	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.14	765.5	30.30	769.7	63.3	17.4	27	ENE			2		0f		NNE	0	0	Partly cld'y	E. Renou, Director.
Tarbes, Normal School	29.22	742.3	30.27	768.8	77.0	25	61	E											T. Huguet, Director
Toulouse, Observatory	29.50	749.3	30.23	767.8	64.8	18.2	34	NW			4		0			0	0	Clear	B. Baillaud, Dir.
Tours	30.08	764.0	30.28	769.0	65.1	18.4	28	NE			2		0			0	0	Clear	M. de Tastes.
Versailles, Observatory	29.81	757.2	30.30	769.6	62.2	16.8	25	NE			3		0			0	0	Clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.40	746.8	30.10	764.5	66.6	19.2	53	NNW			3		0			0	0	Clear	Nicot, Director.
SUN-SERIES.																			
Fort de France, Martinique	30.18	766.5	30.21	767.2	80.6	27										0.20	5.		L'Abbé Marchési
Paris, Montsouris Obs'y	30.03	762.7			63.0	17.2	29	ENE			1		0			0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.59	751.5	29.61	752.2	67.3	19.6	83	W	23.0	10.3			9			0 150	3.8	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.,) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,184.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.37	745.9	30.23	767.9	60.4	15.8	48	NE			6		6ks	E		0.008	0.2		Prof. Dr. Hoh.
Berlin	30.07	763.8	30.24	768.1	61.5	16.4	45	N			3		6			0	0		Prof. Dr. Arndt.
Breslau	29.67	753.6	30.21	767.2	51.6	10.9	76	NNW			3		10			0.530	13.44	Sprinkling	Royal University Obs'y
Carlsruhe	29.78	756.5	30.21	767.3	60.1	15.6	61	N			2		4	E		0.031	0.8	Raining	Albert Senz.
Cassel	29.65	753.2	30.26	768.7	59.4	15.2	63	N			3		2	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.96	760.9	30.32	770.2	64.0	17.8	25	NNE			2		5			0	0		Physical Society.
Friedrichshafen	28.75	730.3	30.20	767.0	53.6	12.0	72	NE			6		10	NE		0.024	0.6		Chief Telegrapher Wilhelm.
Hamburg	30.24	768.1	30.31	769.9	57.0	13.9	62	NNE			2		5			0.071	1.8		Dr. Reinhold Kleemann.
Kiel	30.30	769.5	30.31	769.9	55.8	13.2	41	N			3		3			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	30.07	763.8	30.15	765.9	53.6	12.0	73	N			3		9	W		0.008	0.2		Prof. E. Luther.
Köslin			30.23	767.9	56.8	13.8		N			4		4			0	0		H. Müller.
Leipsic Observatory	29.85	758.2	30.28	769.0	56.3	13.5	57	NNE			1		10	N		0	0		Prof. Dr. Brahms, Privy Counselor
Magdeburg	30.07	763.6	30.29	769.4	62.8	17.1	35	NW			3		8ck			0	0	Solar corona	Dr. Assmann.
Memel	30.11	764.8	30.16	766.0	57.4	14.1	65	NE			1		10n						Reinbrecht & Issermann.
Munich	28.37	720.6	30.24	768.2	46.6	8.1	82	NE			1		10	E		0.496	12.6		Dr. C. Lang.
Neufahrwasser	30.19	766.8	30.21	767.2	50.7	10.4	76	N			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.71	754.6	30.24	768.0	60.8	16.0	41	NNE			2		10			0	0		Reallehrer Dicknether.
Posen	29.89	759.3	30.18	766.6	56.7	13.7	45	N			6		10			0.039	1.0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.71	754.6	30.26	768.6	58.5	14.7	48	NE			5		6	ENE		0	0		Imp. University Observatory.
Stuttgart	29.26	743.1	30.15	765.8	56.8	13.8	54	E					9	N		0.161	4.1	Raining	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.72	729.5	30.31	769.9	55.8	13.2	72	E	2.9	1.3			10		E	0.024	0.6	Raining	Reallehrer J. Hopfner.
Wustrow	30.30	769.7	30.33	770.3	55.9	13.3	66	WSW			3		3s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.57	751.1	29.95	760.7	75.7	24.3		SW			3.0		0					Clear.	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.44	747.7	29.49	749.0	86.3	30.2	82	S	26	11.6			4	SW		0	0	D. clouds	
Deesa	29.00	736.7	29.45	748.1	103.2	39.6	19	W	12.7	5.7			0			0	0	Misty	
Bombay	29.54	750.4	29.58	751.3	87.0	30.6	73	WNW	15	6.7			7	WNW		0	0	D. clouds	
Poona (Yarrowda)	27.72	704.0	29.52	749.8	86.9	30.5	40	WNW	24	10.7			8		NNE	0	0	D. clouds	
Belgaum	27.13	689.1	29.68	753.8	71.1	21.7	88	SW	10	4.5			9	N	SW	1.19	30.2	Thunder-storm	
Lahore	28.64	727.5	29.34	745.2	105.8	41.0	21	Calm	0.7	0.3			0			0	0	Misty	
Roorkee	28.52	724.5	29.38	746.2	99.3	37.4	29	Calm	2	0.9			0			0	0	Sultry	
Agra	28.85	732.8	29.38	746.2	105.6	40.9	16	Calm	4.0	1.8			0			0	0		
Nagpur	28.40	721.2	29.38	746.3	102.9	39.4	21	Calm	2.5	1.1			8		S	0	0	D. clouds	
Jubbulpore	28.11	713.9	29.40	746.8	101.2	38.4	12	N	5.7	2.6			10			0	0	Overcast	
Lucknow	29.10	739.0	29.46	748.2	95.0	35.0	43	ENE	2.3	1.0			0			0.11	2.8	Blue sky	
Allahabad	29.09	739.0	29.39	746.5	101.5	38.6	37	NE	3.3	1.5			0			0	0	Misty	
Patna	29.27	743.4	29.44	747.8	95.8	35.4	49	NE	2.0	0.9			0			0	0	Blue sky	
Hazaribagh	27.51	698.8	29.47	748.6	86.0	30.0	64	ESE	7.6	3.4			0			0	0	Misty	
Cuttack	29.43	747.5	29.51	749.5	85.5	29.7	69	Calm	1.4	0.6			4			0	0	D. clouds	
Calcutta (Alipore)	29.49	748.9	29.51	749.5	80.8	27.1	87	SSE	5.0	2.2			9	SW	SE			Drizzling	
Goalpara	29.13	739.9	29.53	750.1	83.5	28.6	77	ESE	2.4	1.1			8			0	0	D. clouds	
Chittagong	29.47	748.4	29.56	750.7	84.1	28.9	83	S	5.1	2.3			10					Drizzling	
Sibsagar	29.25	743.0	29.59	751.5	82.2	27.9	86	ENE	3.0	1.3			8	SW	SW	0.25	6.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.56	750.9	29.97	761.1	57.4	14.1	74	SE	1.3	0.6			10			1.807	45.9		Prof. Giovanni Clodig.
Milan	29.43	747.6	29.95	760.7	59.5	15.3	81	ESE	4.9	2.2			10	SE		0.429	10.9		Prof. Schiaparelli.
Padua	29.82	757.5	29.93	760.2	61.2	16.2	65	ENE	15.4	6.9			10	SSE		0.402	10.2		Prof. Dott. Lorenzoni
Moncalieri	29.02	737.0	29.91	759.7	70.0	21.1	41	E	9.4	4.2			6	N		0.098	2.5		Prof. P. F. Denza.
Genoa	29.71	754.6	29.90	759.4	63.0	17.2	57	N	8.1	3.6			10	NW		0	0		Prof. G. M. Garibaldi.
Mondovi	28.04	712.1	29.91	759.8	62.8	17.1	50	NW			4		7			0	0		Prof. D. C. Bruno.
Pesaro	29.78	756.5	29.83	757.7	67.6	19.8	71	N	12.5	5.6			3	SE		0	0		Prof. Luigi Guidi.
Florence	29.68	751.2	29.83	757.6	71.2	21.8	46	NE			2		10	SSE		0	0		Cav. F. Meucci.
Leghorn	29.79	756.6	29.87	758.7	66.9	19.4	49	NNW	4.9	2.2			10	ENE		0	0		Prof. P. Monte.
Rome	29.73	755.1	29.90	759.5	70.7	21.5	50	SW	13.0	5.8			3			0	0		Prof. P. S. Ferrari.
Lecce	29.64	752.9	29.89	759.3	76.6	24.8	55	SSE	16.1	7.2			6	S		0	0		Prof. C. De Giorgi.
Cosenza	29.04	737.5	29.91	759.8	76.3	24.6	66	SW	6.9	3.1			3			0	0		Prof. D. Ot i.
Cagliari	29.71	754.7	29.90	759.5	68.0	20.0	38	NW			6		0			0	0		Prof. A. Pacinotti.
Palermo	29.71	754.5	29.96	760.9	75.2	24.0	32	WNW	9.8	4.4			7			0	0		Prof. G. Ciacciatore.
Syracuse	29.85	758.1	29.89	759.2	78.6	25.9	66	E	9.8	4.4			3	SW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.36	745.8	29.87	758.7	71.8	22.1	62	SE	4.3	1.9			1			0	0		Prof. F. Brioschi

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					70.1	21.2	87	NNE	2.2	1.0			10n			0.100	2.54	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.58	751.3	29.78	756.4	72.9	22.7	74	SSE	6.8	3.1			10s			0.540	13.72	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.81	757.2	29.88	758.9	67.1	19.5	85	S	5.8	2.6		0	0			0.020	0.51	Fair	The Staff.
Wakayama	29.84	757.9	29.89	759.2	70.1	21.2	77	S	5.9	2.6			10ck			0.015	0.38	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.1	29.98	761.6	55.4	13.0	55	SE			1	5cs	0			0	0	Fair	Prof. L. Perez.
Guanuxuato	23.62	599.9			64.4	18.0	66	ENE	7.3	3.3		9ps;s	1s	NE	Calm	0	0	Covered.	Vicente Fernandez.
Leon	24.35	618.4	29.91	759.7	66.9	19.4	68	SW			3	4c	0	NE		0	0	Fair	Prof. M. Leal.
Mazatlan	29.60	751.8	29.85	758.3	71.0	21.7	92	NE			2	5k	0		S	0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.03	584.9	29.93	760.3	58.6	14.8	72	NW	4.7	2.1		5c	0			0	0	Hazy	The Staff
Morelia	23.897	606.7†			74.8	23.8	28	SE			3	2c	3k	E	S	0	0	Fair	M. Fena, M. D.
Puebla (Aguascalientes)	23.93	607.8	29.84	757.8	66.7	19.3	65	NW			1	2c	0			0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.37	593.7	30.09	764.2	55.6	13.1	52	Calm	0	0		1ck	0	SW		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.1	29.92	759.9	74.3	23.5	63	E			1	5	0	E		0	0	Fair	G. Barroeta, M. D.
Tlacotalpam	29.77	756.2	29.78	756.5	81.1	27.3	85	Calm			0	2	7	NE	N	0	0	Threatening	Prof. M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.55	572.8	30.07	763.7	61.7	16.5	70	NE			3	0	0			0	0	Fine	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.38	771.6	30.38	771.6	62.6	17.0		S			1					0	0		
Groningen	30.30	769.7	30.36	771.1	56.3	13.5		NNE								0	0		
Helder	30.38	771.7	30.38	771.7	52.7	11.5		NW			1					0	0		
Hellevoetsluis	30.36	771.1	30.36	771.1	61.9	16.6	54	N			1					0	0		
Utrecht	30.33	770.4	30.36	771.6	59.5	15.3	45	N			2		2			0	0	L'ly cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; they do not give the humidity; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.19	766.8	30.24	768.2	52.9	11.6	59	NNW	7.8	3.5			1			0	0		
Brönö	30.28	769.2	30.32	770.2	45.3	7.4	66	WSW	18	8			8			0	0		
Christiania	30.11	764.7	30.25	768.4	62.6	17.0	40	WNW	9	4			5			0	0		
Tromsö	29.95	760.8	30.01	762.2	35.2	1.8	91	SSW	13	6			10			0.815	20.7	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.22	767.6	30.43	772.9	69.1	20.6	79	SSE			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.09	738.8	30.05	763.2	79.9	26.6	44	N	3.1	1.4			8			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.11	764.7	30.19	766.9	66.7	19.3	63	SW	6.9	3.1			3			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.73	755.2	30.08	764.1	75.6	24.2	49	NNW	18.1	8.1			7	WSW		0	0		The Staff.
Ponta Delgada (Azores)	30.32	770.1	30.39	771.9	66.2	19.0	66	SE	11.2	5.0			6	N		0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, [Costa Carlos Maria da Silva.																				
St. Paul de Loando			29.95	760.8	77.0	25.0		W			2		0			2	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Com'd't.
Sado, J. A. de Brito Capello																				
Mossamedes, Benguela			29.97	761.3	68.0	20.0		WSW			4		1			2	SW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães,																				
Macao, China			29.92	760.0	82.4	28.0		SSW			3		5		SSW	2			D. clouds	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	30.01	762.2	30.03	762.7	55.2	12.9	58	NW	13	6			9k						Capt. Sselliwerstow.
Astrakhan	30.21	767.3	30.13	765.2	71.2	21.8	48	ESE	20	9			3cs;s					Light clouds	Capt. Wisganow.
Barnaul	29.21	741.8	29.69	754.0	63.1	17.3	80	SE	4	2			10						Meteorological Obs.
Dorpat	30.00	761.9	30.24	768.0	60.1	15.6	53	NNE	9	4			10k						Prof. Dr. Weihrauch.
Ekaterinburg	28.85	732.9	29.76	756.0	76.5	24.7	39	NW	4	2			7k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.72	754.9	29.97	761.2	86.2	30.1	41	WNW	9	4			0						Physical Cabinet.
Kertch	29.85	758.2	29.87	758.7	62.4	16.9	100	NE	7	3			0						Lagorio.
Kieff	29.29	744.0	29.89	759.3	78.6	25.9	36	ESE	7	3			ck	7ks					Physical Cabinet.
Krotkowo*	29.62	752.4	30.07	763.6	88.3	31.3	37	N	2	1				2					Cand. Fatjanow.
Lugan	29.71	754.7	29.91	759.7	81.1	27.3	29	ESE	34	15				3				Light clouds	Meteorological Obs.
Moscow	29.50	749.4	30.02	762.4	87.4	30.8	40	S	4	2				3ks					Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.82	757.4	29.89	759.2	62.1	16.7	94	ENE	4	2				10n					Kurdakof.
Nikolaievsk, on the Amoor	29.98	761.5	30.07	763.7	36.1	2.3	89	Calm	0	0				10n				Raining	
Nukuss																			
Orenburg																			
Pekin (China)	29.71	754.6	29.85	758.2	66.7	19.3	60	Calm	0	0				9n					Physical Observatory.
St. Petersburg	30.21	767.2	30.22	767.6	57.4	14.1	46	NW	16	7				10kn					Central Physical Obs.
Tashkend	28.36	720.2	29.87	758.6	73.0	22.8	31	NW	7	3				0					Teich, A. M.
Tiflis	28.54	724.8	29.89	759.2	75.0	23.9	60	SE	4	2				8ks					Physical Observatory.
Vladivostock																			
Warsaw	29.64	752.8	30.07	763.6	52.0	11.1	86	NNE	13	6				10n				Light rain	Astronomical Obs.
Wilna	29.64	752.9	30.06	763.5	58.5	14.7	97	NE	2	1				10				Heavy clouds	Astronomical Obs.
Yeniseisk	29.61	752.0	29.89	759.1	63.1	17.3	66	S	2	1				10				Light clouds	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.00	762.0	30.10	764.6	68.9	20.5	64	SSW	4.2	1.89			0			0	0	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.19	766.8	30.24	768.2	70.3	21.3	46	SE	2.0	0.91		0	0			0	0	Clear.	Prof. Manuel de Naverán.
Burgos, Met. Obs'y	27.19	690.7			62.6	17.0	43	SE	12.7	5.69			0			0	0	Clear.	Domingo Martinez Peres.
Madrid, Royal Observatory	27.84	707.2	29.97	761.2	79.5	26.4	37	NW	14.9	6.67		0	1			0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	29.93	760.2	30.08	763.9	77.4	25.2	55	ESE	4.0	1.81		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.21	741.9	30.08	764.1	70.0	21.1	53	NE	13.7	6.1			2			0	0	Light clouds	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.91	759.6	29.97	761.3	80.7	27.1	74	E	4.5	2.0		0	0			0	0	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	29.77	756.1	29.82	757.4	87.1	30.6	63	ESE	3.3	1.5						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.95	760.7	30.04	763.1	77.2	25.1	45	ESE	10.8	4.8		0	5	NW	SE	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.92	759.9	30.01	762.2	75.2	24.0	98	SE	2.2	1.00		5sk	6kn	SE	SE	1.545	39.25	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.13	765.2	30.17	766.2	47.1	8.4		SW			4		4			0	0		
Umea	30.24	768.0	30.29	769.3	56.8	13.8	31	NW			4		7			0	0		
Hernosand	30.24	768.2	30.30	769.5	59.0	15.0	87	S			2		5			0	0		
Stockholm	30.13	765.3	30.31	769.8	56.5	13.6	49	ENE			2		9			0	0		
Wisby	30.13	765.3	30.19	766.8	61.2	16.2	51	ESE			2		7			0	0		
Sub-Series.																			
Upsala	30.21	767.2	30.29	769.4	57.0	13.9	36	E	8.7	3.9			8	SSW	SW	0	0		Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pâhlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 54° 37′, E. 3° 33′				Blue sky	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Geneva	28.71	729.3	30.14	765.5	54.0	12.2	52	NNE			7		8			0	0	Covered	The Observatory.
Zurich	28.57	725.7	30.22	767.5	51.3	10.7	75	E			3		8		E	0.028	0.7	Light rain	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +3.6 mm.; Thermometer, —6.4 Cent. Relative Humidity, —4 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Constantinople			29.93	760.2	68.5	20.3	45	SW	13	6.0			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.99	761.7	78.4	25.8		SW			3		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.98	761.6	79.0	26.1	56	SW			3		5ks		SW	0	0		Prof. C. V. A. van Dyck

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Stations.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bathurst, N. B.																			Hon. J. Ferguson.
Chatham, N. B.	30.23	767.8	30.29	769.4	57.0	13.9	52	SE	1	0.4		8c	0	NW		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.25	768.3	30.30	769.6	54.1	12.3	44	NW	4	1.8		1c	0	NW		0	0	Fair	H. J. Cundall, C. E
Cornwall, Ontario	29.72	754.9	29.91	759.7	55.9	13.3	92	E			1		10n			0.039	0.99	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.10	764.5	30.26	768.6	48.3	9.1		NE			1	0	0			0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.22	767.6	30.24	768.1	44.5	6.9	72	NE	5	2.2		1c	0	Calm		0	0	Clear.	J. McWilliams.
Fredericton, N. B.	30.24	768.1	30.30	769.6	57.0	13.9	53	SE	1	0.4		3c	0			0	0	Fair	Prof. Harrison.
Fort Garry, Manitoba	28.84	732.5	29.65	753.1	49.0	9.4	78	NW	1	0.4		2cs	2ks	W		0	0	Fair	James Stewart.
Granton, Ontario	28.63	727.2	29.68	753.9	64.0	17.8	94	S			2		10n			0.62	15.7	Cloudy	James Grant.
Halifax, N. S.	30.18	766.6	30.30	769.6	63.0	17.2	38	NE	5	2.2		2cs	0			0	0	Clear	A. Allison.
Hamilton, Ontario	29.28	743.7	29.65	753.1	54.9	12.7	94	SW			1	10cs	0	SW		0.56	21.8	Raining	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.54	750.3	29.86	758.4	56.7	13.7	81	E	9	4.0			10n			0.66	16.8	Heavy rain	S. Woods, M. A.
Little Glace Bay, N. S.	30.22	767.6	30.26	768.6	47.6	8.7	58	NW	6	2.7		0	0			0	0	Clear	C. H. Rigby.
Montreal, Quebec	29.83	757.7	30.02	762.5	58.0	14.4	61	SE	10	4.5			10s			0	0	Cloudy	C. H. McLeod, C. E
Moose Factory, Ontario	29.72	754.9	29.75	755.6	57.8	14.3	69	SW			1		8s			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.12	739.6	29.81	757.2	53.2	11.8	98	SE	11	4.9			10s			0.10	2.5	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	28.95	735.3	29.62	752.3	56.2	13.4	94	SE	30	13.4			10n			0.26	6.6	Light rain	Rev. R. Mosley.
Peterboro, Ontario	29.03	737.3	29.76	755.9	54.7	12.6	100	E			1		10n			1.17	29.7	Raining	J. F. Jeffers, M. A.
Port Dover, Ontario	28.99	736.3	29.66	753.4	60.1	15.6	100	S	1	4.5			10n			0.01	0.3	Threatening	H. Morgan.
Port Stanley, Ontario	29.02	737.1	29.64	752.8	59.3	15.2	94	SE	12	5.4			10n			0.89	22.6	Cloudy	M. Payne.
Quebec, Quebec	29.88	758.9	30.20	767.1	55.0	12.8	74	NE			3	5ks	3n			0.01	0.3	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.41	747.0	29.87	758.7	51.0	10.6	86	E	6	2.7			10s			Inap	Inap.	Light rain	W. H. McIntyre.
St. John, N. B.	30.13	765.3	30.29	769.4	59.0	15.0	88	S	5	2.2		10ck	0			0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	28.90	734.0	29.59	751.6	59.6	15.3	95	S	18	8.0			10ks			0.33	8.4	Heavy rain	K. Stewart.
Stratford, Ontario	28.35	720.1	29.57	751.1	62.9	17.9	93	SW	10	4.5			10n			0.516	13.10	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.22	767.6	30.26	768.6	56.2	13.4	47	NW	3	1.3		0	0			0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.33	745.0	29.70	754.4	54.6	12.6	98	E	10	4.5			10n			0	0	Cloudy	Magnetic Observatory
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.59	726.2	29.61	752.1	64.2	17.9	92	SE	21	9.4			10s			0.97	24.6	Raining	Professor Wolverton.
Yarmouth, N. S.	30.20	767.1	30.26	768.6	58.6	14.8	69	SE	2	0.9		6cs	0	W		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.85	758.2	30.10	764.5	50	10.0	84	NE	2	0.9		5k	5s			0	0	Fair	John Delany.
St. Pierre, N. F., Pilopital Maritime			30.04	763.0	44.6	7.0		NW			3					0	0		The Commandant.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.02	762.5	30.10	764.5	60	15.6	77	S	8	3.6			10n		S	0.12	3.0	Light rain	
Alpena, Michigan	28.87	733.3	29.49	749.0	49	9.4	100	E	8	3.6			10n		Calm	0.90	22.9	Light rain	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.84	732.5	29.94	760.5	71	21.7	75	SE	10	4.5			10s		SE	0.02	0.5	Cloudy	
Atlantic City, New Jersey	30.04	763.0	30.05	763.3	67	19.4	95	SE	12	5.4			10s;fg		Calm	0	0	Cloudy	
Augusta, Georgia	29.88	758.9	30.07	763.8	73	22.8	76	S	3	1.3		8cs	0	S		0	0	Fair	
Baltimore, Maryland	29.93	760.2	29.98	761.5	71	21.7	90	E	4	1.8			10s		SE	0.10	2.5	Cloudy	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	66	18.9	95	SE	15	6.7			10s		Calm	0.05	1.3	Cloudy	
Bismarck, Dakota	28.02	711.7	29.88	758.9	47	8.3	69	NW	20	8.9		5c	0	SW		0.07	1.8	Fair	
Boerne, Texas	28.44	722.4	29.67	753.6	73	22.8	100	S	4	1.8			10ks		S	0	0	Cloudy	
Boise City, Idaho	27.30	693.4	30.26	768.6	43	6.1	67	W	10	4.5		0	5s		W	0	0	Fair	
Boston, Massachusetts	30.07	763.8	30.22	767.6	57	13.9	63	E	4	1.8			10ks		SW	0	0	Cloudy	
Brackettville, Texas	28.68	728.5	29.69	754.1	76	24.4	91	E	12	5.4			10ks		E	0.43	10.9	Cloudy	
Breckenridge, Minnesota	28.72	729.5	29.68	753.9	53	11.7	73	N	8	3.6		2k	2s	NW	N	0.05	1.3	Fair	
Brownsville, Texas	29.77	756.1	29.82	757.4	85	29.4	76	SE	2	0.9		5k	0	SE		0	0	Fair	
Buffalo, New York	29.01	736.8	29.67	753.6	66	18.9	84	S	16	7.2			10s		SW	0.72	18.3	Light rain	
Burkes, Arizona					63	17.2	33	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.78	756.4	30.06	763.5	58	14.4	76	SE	7	3.1			10n		SE	0.01	0.3	Light rain	
Cairo, Illinois	29.46	748.3	29.83	757.7	73	22.8	67	W	17	7.6		0	0			0.24	6.1	Clear	
Campo, California	27.28	692.9	29.85	758.2	36	2.2	80	W	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.21	767.3	30.21	767.3	76	24.4	82	S	16	7.2		Haze	5s	Calm	SW	0	0	Cloudy	
Cape Henry, Virginia	30.04	763.0	30.05	763.3	74	23.3	76	SW	18	8.0		5ck	Haze	SW	Calm	0	0	Fair	
Cape Lookout, N. Carolina	30.09	764.3	30.10	764.5	77	25.0	77	SW	9	4.0		2c	5ks	Calm	SW	0	0	Cloudy	
Cape May, New Jersey	29.98	761.5	30.01	762.2	68	20.0	84	S	17	7.6		5cs	2s	W	Calm	0	0	Fair	
Castroville, Texas	29.09	738.9	29.76	755.9	78	25.6	82	Calm	0	0			10s		S	0.45	11.4	Cloudy	
Cedar Keys, Florida	30.04	763.0	30.07	763.8	77	25.0	82	SE	11	4.9		0	5ks		SE	0	0	Fair	
Charleston, South Carolina	30.02	762.5	30.07	763.8	79	26.1	62	S	9	4.0		5k	2s	S	S	0	0	Cloudy	
Charlotte, North Carolina	29.18	741.1	29.96	761.0	69	20.6	80	SW	8	3.6			10s		SW	0	0	Cloudy	
Chattanooga, Tennessee	29.14	740.1	29.91	759.7	68	20.0	95	Calm	0	0			10ks		SW	1.62	41.1	Threatening	
Cheyenne, Wyoming	23.90	607.0	29.84	757.9	41	5.0	100	NE	14	6.3			Fog			0	0	Foggy	
Chicago, Illinois	28.78	731.0	29.43	747.5	62	16.7	88	SW	7	3.1			10n		Calm	0.81	20.6	Light rain	
Chincoteague, Virginia	30.04	763.0	30.06	763.5	68	20.0	96	S	20	8.9		5cs	0	N		0	0	Fair	
Cincinnati, Ohio	29.06	738.1	29.67	753.6	69	20.6	80	S	12	5.4		2k	0	SW		2.17	55.1	Clear	
Cleveland, Ohio	28.95	735.3	29.63	752.6	67	19.4	79	SE	11	4.9		8ck;cs	2ks	W	S	0.76	19.3	Cloudy	
Coleman City, Texas	28.06	712.7	29.66	753.4	70	21.1	80	S	4	1.8		0	0			0.07	1.8	Clear	
Columbus, Ohio	28.87	733.3	29.67	753.6	65	18.3	84	S	12	5.4			10ks		SW	1.80	45.7	Cloudy	
Concho, Texas	27.95	709.9	29.55	750.6	68	20.0	60	S	3	1.°		0	0			0	0	Clear	
Corsicana, Texas	29.41	747.0	29.85	758.2	76	24.4	82	SW	4	1.8		0	2ks		Calm	0.04	1.0	Clear	
Davenport, Iowa	28.99	736.3	29.60	751.8	57	13.9	81	NW	13	5.8		0	8s		NW	0.58	22.4	Fair	
Dayton, Washington T'y					41	5.0	91	SW			1	0	0			0	0	Clear	
Deadwood, Dakota	25.32	643.1			37	2.8	71	Calm	0	0			10s		Calm	0.26	6.6	Cloudy	
Decatur, Texas	28.69	728.7	29.80	756.9	73	22.8	85	SE	9	4.0		0	0			0	0	Clear	
Delaware Breakwater, Del.	29.99	761.7	29.99	761.7	71	21.7	80	S	24	10.7		5c	2s	S	S	0	0	Fair	
Denison, Texas	29.07	738.4	29.83	757.7	74	23.3	72	S	5	2.2		0	0			0	0	Clear	
Denver, Colorado	24.63	625.6	29.85	758.2	51	10.6	65	NW	7	3.1		0	0			0	0	Clear	
Des Moines, Iowa	28.88	733.5	29.74	755.4	54	12.2	74	W	4	1.8		0	0			1.41	35.8	Clear	
Detroit, Michigan	28.89	733.8	29.52	749.8	65	18.3	94	S	13	5.8		8ck	0	SW		0.58	14.7	Fair	
Dodge City, Kansas	27.10	688.3	29.27	743.4	62	16.7	56	W	4	1.8		0	0			0	0	Clear	
Dubuque, Iowa	28.93	734.8	29.60	751.8	59	15.0	70	NW	11	4.9		0	8ks		NW	0.53	13.5	Fair	
Duluth, Minnesota	28.96	735.6	29.62	752.3	50	10.0	93	NE	1	0.4		2c	0	SW		0	0	Fair	
Eagle Pass, Texas	29.05	737.9	29.74	755.4	78	25.6	86	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	30.20	767.1	30.27	768.8	53	11.7	60	N	6	2.7		5c	2s	W	W	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	28.98	736.1	29.66	753.4	66	18.9	84	S	14	6.3			10n		Calm	0.33	8.4	Light rain	
Escanaba, Michigan	28.85	732.8	29.48	748.8	52	11.1	79	N	12	5.4			10n		NE	0.27	6.9	Light rain	
Florence, Arizona	28.29	718.6	29.89	759.2	66	18.9	41	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	24.95	633.7	30.40	772.1	42	5.6	42	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.87	707.9	29.71	754.6	42	5.6	83	NW	17	7.6		10cs	0	W		0	0	Cloudy	
Fort Custer, Montana	26.92	683.8			43	6.1	66	NW	6	2.7			10s		NW	0.16	4.1	Cloudy	
Fort Davis, Texas	25.16	639.0	30.12	765.0	59	15.0	48	Calm	0	0		0	0			0	0	Clear	
Fort Elliot, Texas	26.76	679.7	28.91	734.3	59	15.0	70	S	8	3.6		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.28	743.7	29.79	756.7	72	22.2	71	E	6	2.7		0	0			0	0	Clear	
Fort Grant, Arizona	25.14	638.5	29.94	760.6	61	16.1	12	W	5	2.2		0	0			0	0	Clear	
Fort Griffin, Texas	28.57	725.7	29.81	757.2	62	16.7	94	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.27	692.6			45	7.2	54	N	21	9.4		0	2ks			0	0	Fair	
Fort McKavett, Texas	27.63	701.8	29.45	748.0	72	22.2	90	S	10	4.5			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	27.98	710.7			46	7.8	76	W	16	7.2		0	0			0	0	Clear	
Fort Verde, Arizona					52	11.1	35	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.86	758.4	29.90	759.4	81	27.2	78	S	8	3.6		2k	0	S		0	0	Clear	
Grand Haven, Michigan	28.83	732.3	29.44	747.8	61	16.1	94	S	14	6.3		10k	0	S		0.37	9.4	Cloudy	
Helena, Montana					37	2.8	71	NW	3	1.3		8cs	0	Calm		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	28.80	731.5	29.53	750.0	69	20.6	80	SW	14	6.3		0	8s		SW	2.33	59.2	Fair	
Indianola, Texas	29.87	758.7	29.90	759.4	79	26.1	91	S	10	4.5		5k	0	S		0	0	Fair	
Jacksboro, Texas	28.72	729.5	29.80	756.9	70	21.1	75	SW	4	1.8		0	0			0	0	Clear	
Jacksonville, Florida	30.05	763.3	30.08	764.0	78	25.6	65	Calm	0	0		0	0			0	0	Clear	
Keokuk, Iowa	29.07	738.4	29.66	753.4	58	14.4	88	NW	11	4.9			10s		NW	1.79	45.5	Cloudy	
Key West, Florida	29.97	761.2	30.00	762.0	80	26.7	78	E	12	5.4		2k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.08	764.0	30.10	764.5	75	23.9	77	SW	18	8.0		8ck	0	SW		0	0	Cloudy	
Knoxville, Tennessee	28.94	735.1	29.90	759.4	70	21.1	83	SW	12	5.4			10ks		SW	0.18	4.6	Cloudy	
La Crosse, Wisconsin	28.91	734.3	29.61	752.1	57	13.9	81	N	5	2.2			10s		N	0.44	11.2	Cloudy	
La Mesilla, New Mexico	26.00	660.4	30.15	765.8	50	10.0	32	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.39	746.5	29.71	754.6	82	27.8	71	SE	9	4.0		0	1s		SE	0	0	Clear	
Leavenworth, Kansas	28.96	735.6	29.78	756.4	56	13.3	81	N	2	0.9			10s			0.03	0.8	Cloudy	
Lewiston, Idaho	29.50	749.3	30.16	766.1	45	7.2	54	NE	1	0.4		0	0			0	0	Clear	
Little Rock, Arkansas	29.76	755.9	30.07	763.8	72	22.2	85	SW	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.54	750.8	29.88	758.9	58	14.4	88	SE	2	0.9			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.15	740.4	29.68	753.9	75	23.9	60	S	12	5.4		0	1ks		Calm	2.60	66.0	Clear	
Lynchburg, Virginia	29.30	744.2	29.95	760.7	69	20.6	80	S	4	1.8			10s		Calm	0.01	0.3	Cloudy	
Madison, Wisconsin	28.55	725.2	29.49	749.0	52	11.1	93	NW	20	8.9			10s		NW	0.92	23.4	Cloudy	
Marquette, Michigan	28.89	733.8	29.51	749.5	48	8.9	93	N	10	4.5			10n		Calm	0.07	1.8	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.23	717.0	29.90	759.4	76	24.4	86	SE	3	1.3	.....	0	8ks	.....	SW	0	0	Fair	
Memphis, Tennessee	29.52	749.8	29.84	757.9	78	25.6	69	SW	4	1.8	.....	0	0	.....	.....	0.04	1.0	Clear	
Milwaukee, Wisconsin	28.75	730.2	29.45	748.0	50	10.0	100	N	5	2.2	.....	.....	Fog	.....	.....	1.21	30.7	Foggy	
Mobile, Alabama	29.95	760.7	29.99	761.7	79	26.1	87	S	9	4.0	.....	2c	5s	Calm	S	0.19	4.8	Fair	
Montgomery, Alabama	29.78	756.4	30.00	762.0	75	23.9	85	S	6	2.7	.....	.....	10ks	.....	SW	0.01	0.3	Cloudy	
Morgantown, West Virginia	28.88	733.5	29.83	757.7	69	20.6	85	NW	8	3.6	.....	.....	10s	.....	SW	1.21	30.7	Cloudy	
Mt Washington, N H	23.95	608.3	30.31	769.9	36	2.2	80	S	40	17.9	.....	.....	10s	.....	S	0	0	Cloudy	
Nashville, Tennessee	29.31	744.5	29.81	757.2	80	26.7	70	SW	9	4.0	.....	1k	0	Calm	.....	0.36	9.1	Clear	
New Haven, Connecticut	30.01	762.2	30.12	765.0	59	15.0	88	E	8	3.6	.....	.....	10n	.....	E	0.03	0.8	Light rain	
New London, Connecticut	30.12	765.0	30.17	766.3	59	15.0	70	E	11	4.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.92	760.0	29.98	761.5	79	26.1	86	S	3	1.3	.....	2c	1ks	W	Calm	0.45	11.4	Fair	
Newport, Rhode Island	30.14	765.5	30.19	766.8	59	15.0	65	E	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
New River, North Carolina	.....	.....	.....	.....	76	24.4	76	S	.....	.....	1	2c	2ks	W	Calm	.....	.....	Fair	
New York, New York	29.91	759.7	30.09	764.3	62	16.7	100	E	11	4.9	.....	.....	10n	.....	E	0.10	2.5	Light rain	
Norfolk, Virginia	30.00	762.0	30.06	763.5	79	26.1	62	SW	14	6.3	.....	10ck	0	SW	.....	0	0	Cloudy	
North Platte, Nebraska	26.88	682.7	29.36	745.7	56	13.3	87	NE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Olympia, Washington Ter	30.35	770.9	30.39	771.9	38.0	3.3	91	S	1	0.4	.....	0	Fog	.....	S	Inap.	Inap.	Clear	
Omaha, Nebraska	28.62	726.9	29.68	753.9	58	14.4	88	W	1	0.4	.....	0	5s;fog	.....	SE	1.19	30.2	Fair	
Oswego, New York	29.56	750.8	29.87	758.7	56	13.3	94	SE	21	9.4	.....	.....	10n	.....	S	0.91	23.1	Light rain	
Pembina, Dakota	28.82	732.0	29.63	752.6	49	9.4	85	W	3	1.3	.....	5c	2s	W	Calm	0.11	2.8	Fair	
Pensacola, Florida	29.99	761.7	30.02	762.5	78	25.6	86	S	12	5.4	.....	4k	0	S	.....	0	0	Fair	
Philadelphia, Pennsylvania	29.98	761.5	30.03	762.7	65	18.3	94	SE	6	2.7	.....	.....	10s	.....	Calm	0.07	1.8	Cloudy	
Phœnix, Arizona	28.66	728.0	30.36	771.1	78	25.6	29	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.68	449.1	29.88	758.9	24	— 4.4	48	W	54	24.1	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.09	738.9	29.90	759.4	74	23.3	81	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.92	507.6	29.69	754.1	54	12.2	15	NW	9	4.0	.....	0	1s	.....	Calm	0	0	Clear	
Pittsburg, Pennsylvania	29.02	737.1	29.80	756.9	65	18.3	94	NE	9	4.0	.....	.....	10n	.....	NE	0.77	19.6	Light rain	
Port Huron, Michigan	28.89	733.8	29.54	749.5	66	18.9	89	S	16	7.2	.....	.....	10n	.....	SW	0.50	12.7	Light rain	
Portland, Maine	30.18	766.6	30.23	767.8	60	15.6	77	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	30.35	770.9	30.43	772.9	42	5.6	83	Calm	0	0	.....	2cs	0	NW	.....	Inap.	Inap.	Clear	
Portsmouth, North Carolina	.....	.....	.....	.....	76	24.4	77	S	12	5.4	.....	4cs;k	0	S	.....	0	0	Fair	
Prescott, Arizona	24.66	626.4	30.02	762.5	44	6.7	37	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.02	762.5	77	25.0	82	E	10	4.5	.....	0	2ks	.....	E	Inap.	Inap.	Fair	
Red Bluff, California	29.71	754.6	30.06	763.5	60.5	15.8	33	NW	28	12.5	.....	2cs	1s	NW	NW	0	0	Fair	
Rio Grande City, Texas	29.65	753.1	29.86	758.4	81	27.2	83	SE	10	4.5	.....	0	2s	.....	SE	0	0	Clear	
Rochester, New York	29.16	740.7	29.76	755.9	60	15.6	88	SE	16	7.2	.....	.....	10n	.....	S	0.98	24.9	Light rain	
Roseburg, Oregon	29.82	757.4	30.42	772.7	37.5	3.1	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.79	756.7	29.86	758.4	64	17.8	30	NW	28	12.5	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.21	741.9	29.76	755.9	61	16.1	71	W	16	7.2	.....	.....	10ks	.....	W	0.78	19.8	Cloudy	
St. Paul, Minnesota	28.82	732.0	29.61	752.1	56	13.3	81	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.61	650.5	29.94	760.5	45	9.4	37	N	13	5.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Antonio, Texas	29.18	741.1	29.83	757.9	78	25.6	82	S	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
San Diego, California	29.83	757.7	29.90	759.4	60	15.6	82	S	5	2.2	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	28.95	735.3	29.58	751.3	66	18.9	89	S	16	7.2	.....	5ck	2ks	SW	Calm	0.78	19.8	Fair	
Sandy Hook, New Jersey	30.04	763.0	30.07	763.8	62	16.7	100	SE	28	12.5	.....	.....	10s	.....	Calm	0.06	1.5	Cloudy	
San Francisco, California	29.85	758.2	29.92	760.0	58	14.4	67	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.21	589.5	29.75	755.6	47	8.3	91	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	81	27.2	70	SW	4	1.8	.....	5cs	Haze	W	Calm	0	0	Fair	
Shreveport, Louisiana	29.68	753.9	29.89	759.2	76	24.4	86	Calm	0	0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.03	737.3	29.68	753.9	58.5	14.7	79	W	16	7.2	.....	.....	10ks	.....	W	0.80	20.3	Cloudy	
Springfield, Massachusetts	30.04	763.0	30.17	766.3	59	15.0	82	Calm	0	0	.....	.....	10n	.....	SE	0.03	0.8	Light rain	
Stockton, Texas	26.85	682.0	29.85	758.2	68	20.0	70	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	30.16	766.1	30.21	767.3	58	14.4	88	E	15	6.7	.....	.....	10s	.....	E	0	0	Cloudy	
Toledo, Ohio	28.88	733.5	29.52	749.8	70	21.1	80	S	17	7.6	.....	5k	0	SW	.....	0.68	17.3	Clearing	
Tucson, Arizona	27.40	696.0	29.95	760.7	71	21.7	22	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.98	761.5	30.49	774.4	46	7.8	69	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	28.91	734.3	29.69	754.1	76	24.4	91	E	3	1.3	.....	.....	10s	.....	SE	0.30	7.6	Cloudy	
Vicksburg, Mississippi	29.70	754.4	29.95	760.7	71	21.7	95	S	5	2.2	.....	.....	10s	.....	SW	2.34	59.4	Cloudy	
Virginia City, Montana	24.35	618.5	29.83	757.7	31	— 0.6	69	NE	9	4.0	.....	.....	10s	.....	NE	0	0	Cloudy	
Visalia, California	29.42	747.3	29.78	756.4	63	17.2	42	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.87	758.7	29.98	761.5	72	22.2	76	S	12	5.4	.....	5ck	0	W;S	.....	0.05	1.3	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	72	22.2	34	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.00	762.0	30.08	764.0	76	24.4	68	S	11	4.9	.....	5k	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	25.77	654.6	30.13	765.3	36	2.2	53	N	12	5.4	.....	5cs	0	N	.....	0	0	Fair	
Wood's Holl, Massachusetts	30.15	765.8	30.19	766.8	60	15.6	60	SE	11	4.9	.....	.....	10s	.....	W	0	0	Cloudy	
Yankton, Dakota	28.48	723.4	29.72	754.9	58	14.4	88	Calm	0	0	.....	10k	0	NW	.....	0.04	1.0	Cloudy	
Yuma, Arizona	29.56	750.8	29.70	754.4	64	17.8	63	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3	.....	.....	59.0	15.0	76	Calm	0	0	.....	8k	2ks	.....	.....	Inap.	Inap.	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	29.95	760.7	30.00	762.0	79	26.1	82	SE	2.4	1.1	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.95	760.7	29.96	761.0	79	26.1	83	Calm	0	0	.....	8c	2s	Calm	.....	0.80	20.3	Fair	James Gall.
Navassa, W. I.	29.89	759.2	29.97	761.2	78	25.6	86	NE	2	0.9	.....	8ck	8s	E	NE	1.26	32.0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	29.99	761.7	29.99	761.7	81	27.2	87	E	.....	.....	2	3c	5k	E	.....	0.720	18.29	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia	29.43	747.5	29.98	761.5	78	25.6	95	Calm	.....	.....	0	.....	10ks	.....	.....	0.52	13.2	.....	Francesco J. Cisneros.
Rivas, Nicaragua‖	.....	.....	.....	.....	75	24	.....	NW	.....	.....	.....	8k	.....	SE	.....	0.94	24.	Covered	Earl Flint.
Santiago de Cuba, W. I.	29.94	760.5	29.96	761.0	78	25.6	82	Calm	0	0	.....	8ck	2ks	.....	SE	0.090	2.29	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	29.61	754.1	29.74	755.4	32.0	0.0	100	NW	13	5.8	.....	.....	10n	.....	NW	0.20	5.1	Snowing	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 milimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.03	762.7	79	26.1	82	SSW	18	8.0			5d		SE	0	0			Fair	
§ Navy Yard, Portsmouth, N. H.	30.22	767.6	58	14.4	76	E	3	1.3			10			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.89	759.2	68	20.0	84	SW			1		Haze		Calm	0	0			Clear	
§ Adams, Punta Arenas, Costa Rica	29.92	760.0	77	25.0	91	NNE			1		5		NE			Ground	SSE	Fair	
§ Alaska, Callao, Peru *	30.00	762.0	63	17.2	83	Calm			0		10					Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.89	759.2	71	21.7	75	S			1		8		Calm	0	0	Smooth		Fair	
Alliance, LynnHavenBay, N.37° W.76°	30.10	764.5	72	22.2	85	SSE			3		8?		S	0	0			Clear?	
§ Ashuelot, Shanghai, China	29.60	751.8	70	21.1	80	WSW			6		8		WSW					Cloudy	
Colorado, New York, N. Y.	30.09	764.3	62	16.7	100	ENE	5	2.2			10		E	0.12	3.0			Heavy rain	
§ Constitution, New York, N. Y.	30.08	764.0	63	17.2	94	ESE	9	4.0			10		E					Rainy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.10	764.5	72	22.2	80	SSW	19.2	8.6			2		W	0	0			Fair	
Independence, § Mare I'd, Navy Yard, Cal.	29.91	759.7	60	15.6	100	Calm	0	0			1		Calm	0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.16	766.1	42	5.6	91	NE			1		2					Smooth		Fair	
Kearsarge, N. 25° 45′, W. 79° 50′	30.04	763.0	78	25.6	86	ENE			4		5?		NE			Mod'ate	E	Clear?	
§ Lackawana, N. 14° 59′, W. 93° 53′ †	29.99	761.7	81	27.2	83	SE			3		10		SE			Smooth	SE	Cloudy	
§ Marion, S. 50° 54′, W. 57° 45′	29.27	743.4	45	7.2	84	WSW			4		10			Blank	Blank	Long smooth	W	Cloudy	
§ Michigan, Erie, Pa.	29.73	755.1	66	18.9	84	S			5		10		S					Raining	
§ Monocacy, N. 32° 30′, E. 123° 05′	29.38	746.2	63	17.2	89	S			6		10		S					Squally	
§ New Hampshire, Port Royal, S. C.	30.06	763.5	76	24.4	77	S	19	8.5			8		SW	0	0			Cloudy	
Nipsic, Villafranca, France	29.89	759.2	69	20.6	65	SSW			1		10					Smooth		Overcast	
§ Onward, Ancon Bay, Peru †	29.99	761.7	64	17.8	89	Calm			0		10		S			Long	W	Cloudy	
§ Pilot, Shanghai, China	29.62	752.3	68	20.0	90	SSW			4		10							Rainy	
§ Passaic, Washington, D. C.	30.01	762.2	73	22.8	85	SE			1		10		SE	0.1	3.			Cloudy	
§ Pensacola, San Francisco, Cal.	29.87	758.7	57	13.9	81	Calm			0		0					Smooth		Blue sky	
§ Portsmouth, Bermuda	30.17	766.3	74	23.3	81	NE			2		2			0	0	Smooth		Clear	
§ Powhatan, N. 37° 02′, W. 75° 45′	30.10	764.5	70	21.1	95	SE			3		2		E			Smooth		Fair	
§ Quinnebaug, Off Flushing, Netherland.	30.38	771.6	55	12.8	62	E			2		2		Calm			Long		Fair	
§ Richmond, Shanghai, China	29.60	751.8	71	21.7	90	WNW			5		8		W					Cloudy	
§ Rio Bravo, Brownsville, Texas	30.03	762.7	78	25.6	100	SE	2	0.9			5		NE	0	0			Fair	
§ Saratoga, N. 36° 41′, W. 7° 46′	30.09	764.3	72	22.2	62	E			2		5		E	0	0	Smooth		Hazy	
§ Shenandoah, Montevideo, Uruguay	29.77	756.1	63	17.2	94	SW			2		10					Smooth		Heavy rain	
§ St. Louis, League Island, Pa.	30.02	762.5	65	18.3	94	SE	11	4.9			10		SE	0.05	1.3			Drizzling	
Swatara, Bangkok, Siam †	29.68	753.9	83	28.3	91	SSW			5		10		SSW			Mod'ate	SW	Threatenng	
§ Tennessee, Hampton Roads, Va.	30.08	764.0	73	22.8	85	SW	12	5.4			10		SW	0	0	Smooth		Cloudy	
Ticonderoga, Yokohama, Japan	29.88	758.9	71	21.7	90	S			2		2		SW			Smooth		Fair	
§ Trenton, Villafranca, France	29.86	758.4	63	17.2	78	NW			2		10			4 h'rs light	4 h'rs light	None		Cloudy	
§ Vandalia, Huntington, Long Island.	30.14	765.5	61	16.1	94	ESE			2		10		SE					Cloudy	
§ Wabash, Boston, Mass.	30.24	768.1	58	14.4	76	E	7	3.1			10			0	0			Cloudy	
§ Wachusett, Royal Road, Strait of Magellan.	29.37	746.0	40	4.4	91	WNW			3		8		N	0	0	Smooth		Cloudy	
Wyoming, Villafranca, France	29.88	758.9	68	20.0	60	Calm			0		5		S			Smooth	S	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng *†	30.27	768.8	62	16.7	88	SW			1		10		SW	1 h'r	1 h'r			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 42° 15', W. 50° 54' *†	30.06	763.5	41	5.0	100	NW			4		2		Calm	0	0	Smooth		Clear	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 38° 53', W. 63° 58'	30.24	768.1	69	20.6	63	NE			4		2		NE	0	0	Light	NE	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer,																			
S. S. Strassburg, O. Holmbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 33° 24', E. 135° 27' †	29.92	760.0	70	21.1	90	E			3		8		E			Smooth		Cloudy	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 33', W. 161° 34' †	29.85	758.2	61	16.1	82	SSW			6		n		SW	Consid'ble		Rough	SW	Fair	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon	30.30	769.6	55	12.8	77	NNW			2	2c		W		0	0			Hazy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, N. 37° 26', W. 122° 31' †	29.94	760.5	51	10.6		NW			6		0					Heavy	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Dabney, N. 46° 50', W. 124° 00' †	30.17	760.3	46	7.8		NW			4		5		NW			Mod'ate	NW	Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, San Jose, Guatemala...†	29.77	756.1	78	25.6	91	Baffling			1		10		SE			Heavy	SW	Cloudy	F. A. Johnston.
§S. S. Australia,																			Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb. S. 29° 50′, E. 179° 00′.... †	29.73	755.1	70	21.1	75	SW			5		8		SW	0	0	Mod'ate	S	Overcast	W. H. Hawes.
§S. S. City of Panama, M. Connolly. N. 14° 00′, W. 91° 00′.....†	29.92	760.0	77	25.0	86	N			1		8		N	6 h'rs	6 h'rs	Mod'ate	SW	Cloudy	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 28° 09′, E. 120° 27′.... †	29.70	754.4	78	25.6	86	SSW			5		5		SSW			Smooth		Fair	
§S. S. City of Sidney, H. C. Dearborn S. 16° 25′, W. 171° 40′...*†	29.81	757.2	82	27.8		SE			5		8		SE	0	0	Mod'ate	SE	Squally	E. LeSack.
§S.S. City of Tokio, J. Maury N. 38° 43′, W. 130° 27′...†	30.24	768.1	58	14.4	76	NW			6		0			0	0	Heavy	NW	Clear.	F. S. Donne.
§S. S. Colima, R. R. Searle,																			
§S.S. Dakota, D. E. Griffiths N. 38° 46′, W. 123° 41′....†	29.95	760.7	50	10.0	97	NNW			2		0			0	0	Heavy	NNW	Clear	D. E. Griffiths.
§S.S. Granada, J. M Cavarly																			
§S. S. Idaho, Seattle, Washington Ter.†	30.11	764.8	57	13.9		Calm			0		0			0	0			Clear	
§S.S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 44° 56′, W. 30° 49′.....†	30.26	768.6	66	18.9		SSW			2		8		S	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 46° 02′, W. 39° 39′.....†	30.00	762.0	60	15.6		SW			4		8		W			Long	W	Showery	H. N. Goulden.
S. S. Britanic, H. Perry, Off New York Harbor, N.Y†	30.06	763.5	48	8.9					3		8		SE					Misty	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 41° 32′, W. 69° 55′.....†	30.28	769.1	59	15.0		SE			5		8		NW	0	0	Long	ESE	Threatening	Mehaffey.
Schr Adelie Fuller, J. Jorgensen, N. 32° 47′, W. 77° 34′.....†	30.11	764.8	78	25.6	69	SSE	9	4.0			2k		S	0	0	Swell	S	Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis Arroyo, Porto Rico, W.I†	30.01	762.2	80	26.7		E			1		10		SE	Heavy	Heavy	Mod'ate	SE	Dense mist	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 24° 12′, E. 3° 09′.....*†	30.08	764.0	68	20.0		NW			4		5		NW	0	0	Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Port Hastings, Nova Scotia†	30.35	770.9				NW			2		1		S					Clear.	S. S. Miner.
Brigantine George, W. H Champlin, N. 29° 23′ W. 70° 22′....†	30.33	770.4	77	25.0		E			3		2		E	0	0	Smooth		Pleasant	
Hippolyta																			
Iron Cross, W. Randall,																			W. Randall.
Barque Syringa, E. Lewis																			E. Lewis.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON MAY 31, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:40 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Mogador, Marocco			30.08	764.1				NE			3		4			0	0	Cloudy	Dr. Ollive.
Nemours			29.96	761.0	70.2	21.2	78	Calm			0		0			0	0	Clear	Metge.
Algiers			29.97	761.3	69.1	20.6	65	ENE			3		2			6	0	Pretty fair.	Nicolas.
La Calle			30.05	763.3	67.1	19.5	81	NNE			5		2?			0	0	Cloudy	Fonfrède.
Tunis			30.02	762.6															Jacques.
Sfax			30.08	764 0															Gau.
Saida			29.97	761.1															Bernard.
Tebessa			30.05	763.3	71.4	21.9	41	SE			1		7			0.106	2.7	Very cloudy	Watrin.
Geriville					71.6	22.0	41	E			2		6			0.591	15.0	Cloudy	Brugniaux.
Laghouat			29.99	761.7	74.1	23.4	43	E			2		6			0	0	Cloudy	Suart.
Biskra			30.00	762.0	81.7	27.6	36	E			1		3			0.055	1.4	Pretty fair.	Didier.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Agram	29.38	746.3	29.93	760.3	53.1	11.7	86	E			2		10			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.24	742.6	30.00	761.9	59.7	15.4	72	NNE	3.1	1.4			10			0	0		Dr. Wierzbicki.
Eperies	29.04	737.7	29.90	759.4	60.7	16.3	61	N			2		9ks		S	0	0		Julius Mikolik.
Gratz	28.72	729.5	29.96	761.0	56.8	13.8	77	S			2		10			0	0		Andreas Rospini.
Hermannstadt	28.47	723.2	29.83	757.7	74.8	23.8	47	S			2		9			0	0		Prof. A. Gottschling
Kremsmünster, Observatory	28.68	728.4	30.04	762.9	46.8	8.2	87	Calm			0		10			0.402	10.2		The Staff.
Lemberg	28.92	734.6	29.89	759.1	63.7	17.6	74	NE			1		9			0.008	0.2		Dr. T. Stanecki.
Pola	29.78	756.5	29.89	759.3	61.2	16.2	63	ESE			2		10			0	0		I.R.Hydrographic Office.
Szathmar	29.45	748.0	29.89	759.3	73.8	23.2	60	SW			3		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.63	752.5	29.90	759.4	65.5	18.6	68	S			1		10			0	0		Karl Stancel.
Trieste	29.83	757.6	29.93	760.2	59.4	15.2	61	ENE			2		10			Inap.	Inap.	Raining	P. Busin.
Vienna	29.28	743.8	30.01	762.2	40.3	9.6	91	NW			3		10			0.268	6.8		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Arlon																			Prof. M. Passau.
Brussels	29.89	759.1	30.08	764.1	62.4	16.9	35	ENE			2		3		E	0	0		Royal Observatory
Furnes	30.13	765.2	30.15	765.8	65.1	18.4	49	NNE			2		7			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.14	765.5	30.24	768.1	52.6	11.1		SSE	20	8.9			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.06	763.5	30.08	764.0	54	12.2		ENE			1		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.80	756.9	30.03	762.7	56.9	13.8		NE	7	3.1			7					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.07	763.8	48.4	9.1		ESE	20	8.9			10					Raining	John Hartnup.
Bolton (Sharples)	29.55	750.6	30.07	763.8	47.7	8.7		SE	4	1.8			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.67	753.6	30.07	763.8	49.9	9.9	87	SE			3		10			0.17	4.3	Raining	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.00	762.0	82	27.8		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.05	762.7	30.12	765.0	54.0	12.2		E			0		10					Raining	H. Todd.
Cardington			30.12	765.0	52.0	11.1		E			0-1		10					Raining	John McLaren.
Chatham (School M. E.)	29.99	761.7	30.12	765.0	52.1	11.2		Calm			0		10n					Raining	Sapper W. Gibson, R. E.
Donaghadee	30.02	762.5	30.07	763.8	54	12.2		SE			3		8						J. Mac Gowan.
Dover	30.07	763.8	30.10	764.5	59	15.0		Calm			0		5					½ clouded	J. Costello.
Falmouth (Observatory)	29.82	757.4	30.05	763.3	54.7	12.6		SSE			1		8					Overcast	The Staff.
Fort Napier, Natal	27.69	703.3	29.80	759.2	82.4	28.0		N			1		2					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.96	761.0	86	30.0		SW			1		10					Drizzling	
Galway (Queen's College)			30.00	762.0	57	13.9		NW			3		9					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.82	756.0	29.97	761.2	69.6	20.9		E			4		2					Blue sky	Pvt. O Baldwin.
Glasgow, (Observatory)	29.89	759.2	30.10	764.5	55.9	13.3		E			2		10k					Gloomy	D. G. Maclean.
Great Yarmouth	30.15	765.8	30.16	766.1	55	12.8		E			3		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.94	760.5	30.12	765.0	51.0	10.6		N			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.82	757.4	30.04	763.0	55	12.8		SE			2		10					Misty	Dr. S. E Hoskins, F.R.S.
Helston	30.21	767.3	30.33	770.4	60	15.6		S			2		4k			0	0	Fair	M. P. Moyle.
Holyhead	29.97	761.2	30.02	762.5	53	11.7		SSW			2		10					Raining	John Tilston.
Jersey	29.81	757.2	30.10	764.5	56.0	13.3		ESE			2		10			Blank	Blank	Overcast	J. Fisher.
Kew (Observatory)	30.09	764.3	30.13	765.3	49.8	9.9		NW	5	2.2			10					Raining	The Met'g'l Office.
Leicester (Museum)	29.86	758.4	30.12	765.0	49.0	9.4		SE			3		10					Raining	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.95	760.7	30.03	762.7	70	21.1		N			2		6					D. clouds	A. King.
Nairn	30.03	762.7	30.12	765.0	64	17.8		SE			2		2					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.06	763.5	82.5	28.1		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.96	761.0	30.15	765.8	49.4	9.7		SE			3		10d		ESE	0.307	7.80	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.58	751.5	30.12	765.0	47.3	8.5		SE			3		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.89	759.2	30.14	765.5	49	9.4		SE			1		10					Raining	The Staff, for E. J. Stone, Esq.
Plymouth	29.98	761.5	30.05	763.3	51.8	11.0		S			3		10					Overcast	John Merrifield.
*Roche's Point	29.92	760.0	30.02	762.5	56	13.3		NW			3		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.86	758.4	30.02	762.5	53	11.7		W			1		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys.			30.22	767.6	55.8	13.2		SE	24	10.7			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.90	759.4	29.96	761.0	74.4	23.6		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.88	758.9	30.16	766.1	48.0	8.9		SW			2		10			0.17	4.3	Raining	W. F. Cooper.
Silloth Rectory	30.05	763.3	30.08	764.0	55.4	13.0	77	W			2		10			0.026	0.66	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.12	765.0	49.3	9.6		SSE	16	7.2			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.89	759.2	30.11	764.8	51.0	10.6		S			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.02	762.5	30.04	763.0	60	15.6		E			2		8					Gloomy	W. Newcombe.
Valencia Observatory)	30.04	763.0	30.07	763.8	55.0	12.8		NW	15	6.7			10			Blank	Blank	D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.72	754.9	29.76	755.9	58.6	14.8	74	NNW	12.6	5.6		10	10			0.568	14.4	Heavy clouds	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																0.01	0.3		Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.04	763.0	48.0	8.9	87	NW			3		5k			0.01	0.3	Overcast	Andrew Gibb.
Leith (Restalrig Park) Se't'l'd			30.15	765.8	53.6	12.0		E			3		10ks			0.08	2.0	Squally	C. Meldrum.
Mauritius (Observatory)	29.86	758.4	30.05	763.4	72.4	22.4	73	E	17.0	7.6		0	2			0	0	Very fine	R. L. J. Ellery.
Melbourne (Observatory)	30.04	763.0	30.13	765.3	49.0	9.4	92	S	2	0.9			2			0	0		J. Youngclause.
Monach Lt-house, Hebrides			30.16	766.1	56	13.3		SSE			3	3	0	NW		0	0		Robert Burnet.
North Unst, Shetland I's			30.27	768.8				S			6	3	2	S		0	0		

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m.; Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from	Weather.	Observer.
H. M. S Alert																			Capt. J. P Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore. N 39° 50', W. 43° 00'			29.94	760.5	60	15.6		NNW			6		3			6	NNW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochrit																			Capt. H Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German. S. 9° 30', W. 1° 24'			30.12	765.0	76	24.4		SE			4		8					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	68.9	20.5	86	SE			2					1.02	26.	Clear	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.10	766.8	30.24	768.0	56.7	13.7	60	NE			2		10						
Fanöe	30.21	767.3	30.23	767.8	59.4	15.2	68	W			2		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.83	757.6	29.87	758.7	51.3	10.7	87	S			7		8					Raining	
Thorshavn (Faröe)	30.18	766.5	30.21	767.4	55.0	12.8	90	SE			2		8						
Vestervig	30.18	766.6	30.28	769.0	56.5	13.6	52	ENE			2		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds; they omit the cloud direction and rain-fall.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.60	751.8	30.15	765.8	60.8	16	59	N			1		10n			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.97	761.2	30.08	764.0	71.6	22	35	NE			2		5		S	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.82	757.3	30.07	763.8	63.3	17.4	32	NE			2		6k		E	0	0		Klein, Commandant.
Avignon, Normal School	29.86	758.4	29.94	760.4	69.8	21	48	N			4		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.48	748.9	30.03	762.8	63.9	17.7	29	E			1		8kn		E	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.80	757.0	30.07	763.6	66.4	19.1	38	E			1		8		ESE	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.16	740.7	30.04	763.0	64.4	18	53	E			2		8		NE	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.81	757.2	30.01	762.2	67.3	19.6	31	W			1		10		NNW	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.13	739.8	30.04	763.1	65.8	18.8	39	N			2		5kn	NE	NE	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.50	749.4	30.04	763.1	65.8	18.8	66	NNW			1		5ckn		NNW	0	0	Cloudy	M. Gence, Director.
Brest, Naval Observatory	29.79	756.6	30.03	762.8	58.6	14.8	78	SW			1		10		SW	0	0	Misty	Ch. de Rermaree, Dir
Caen, Normal School	29.99	761.7	30.07	763.6	60.8	16	85	S					10		S	0	0	Covered	M. Bletrix, Director.
Carcassonne, N. School	29.54	750.3	29.94	760.5	72.3	22.4	28	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch	29.76	756.0	30.08	764.0	64.9	18.3	41	S			1		8		NE	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.47	748.6	30.03	762.8	56.8	13.8	60	N			1		9	S	S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.66	727.9	29.98	761.6	63.1	17.3	40	NE			1		8		NE	0	0		Allnard, Director.
Commercy, Normal School	29.21	742.0	30.06	763.5	61.5	16.4	40	E			4		kn	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.80	731.5	29.94	760.5	68.9	20.5	31	NW			2		5		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.24	742.6	30.00	762.1	64.0	17.8	67	WNW			1	ck			SW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch	29.91	759.8	30.12	765.1	66.2	19.0	43	W			1		0			0	0	Clear	Moullot, Director.
Le Mans, Normal School	29.79	756.7	30.10	764.5	58.6	14.8	63	ENE			1		10		SSE	0	0	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	739.8	30.03	762.8	63.9	17.7	46	NE			2		5k	E	W			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.98	761.4	30.09	764.2	64.0	17.8	57	SSW			2		8		S	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.38	746.3	29.99	761.7	64.4	18.0	41	N			1		1n		N	0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.63	752.6	29.89	759.3	71.8	22.1	43	W			2		2		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.99	736.4	29.97	761.1	60.4	15.8	61	NE			1		k		NE	0	0		Barbier, Director.
Mont-Louis	24.80	629.9	30.04	762.9	55.2	12.9	46	NE	20.6	9.2			8		E	0	0		M. Cave, for Dr. Fines.
Nice	29.87	758.6	29.90	759.5	69.1	20.6	64	WSW			4		5		NW	0.154	3.9	Cloudy	Capt. Boissière, Director.
Nismes, Normal School	29.74	755.5	29.95	760.6	72.5	22.5	39	N			3		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.83	757.6	29.93	760.3	72.0	22.2	16	N	9.4	4.2			3	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.51	571.8			45.9	7.7							1		NE	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.93	734.8	29.97	761.1	67.6	19.8	36	N			3		2n	N	N	0	0	Slightly cl'dy	M. Tallieu
Puy de Dome (Summit) Ob	25.15	638.7			41.2	5.1	65	ENE			3		8		NE	0	0	Misty	Allnard, Director.
Rochefort, Naval Obs'y	30.07	763.7	30.10	764.5	70.5	21.4	28	ENE			1		8	ENE	ENE	0.39	10.	¾ covered	Lt. E. Decante, Director
Rouen, Normal School	30.00	761.9	30.08	764.1	58.6	14.8	59	NE			2		5		SSW	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.98	761.4	30.01	762.2	60.8	16.0	60	SE			3		8	SE	SE	0	0	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.89	759.2	30.06	763.4	66.4	19.1	27	NE			1		8	NNW	ESE	0	0		E. Renou, Director.
Tarbes, Normal School	28.97	735.8	30.03	762.7	64.4	18	90	W											T. Huguet, Director
Toulouse, Observatory	29.32	744.6	30.04	763.0	66.7	19.3	42	NW			2		5			0	0	Cloudy	B. Baillaud, Dir.
Tours	29.85	758.1	30.04	763.1	64.4	18.0	36	E			1		10		E	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.56	750.9	30.06	763.4	63.7	17.6	30	W			1		9			0	0	Al. covered	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.21	741.8	29.90	759.4	67.1	19.5	54	NNW			1		2			0	0	Slightly cld'y	Nicot, Director.
SUN-SERIES.																			
Fort de France, Martinique	30.18	766.5	30.21	767.2	81.0	27.2										0	0		L'Abbé Marchési
Paris, Montsouris Obs'y	29.78	756.3			69.4	20.8	29	N			1		9		E	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.89	759.1	29.91	759.7	61.2	16.2	81	W	11.4	5.1			2			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 303.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the last 24 hours. Inches.	Rain-fall or melted snow in the last 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.6	30.10	764.6	57.7	14.3	59	NE			4		8ks	NE		0.008	0.2		Prof. Dr. Hoh.
Berlin	29.93	760.3	30.10	764.6	60.4	15.8	41	N			4		9					Raining	Prof. Dr. Arndt.
Breslau	29.56	750.7	30.09	764.2	50.7	10.4	84	NNW			2		10			0.011	0.27		Royal University Obs'y.
Carlsruhe	29.66	753.3	30.09	764.3	54.7	12.6	74	SE			1		10	NE		0.012	0.3	Raining	Albert Senz.
Cassel	29.53	750.1	30.14	765.6	62.2	16.8	37	N			2		5	E		0.024	0.60		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.82	757.3	30.18	766.6	60.8	16.0	38	NNE			2		9			Inap.	Inap.		Physical Society.
Friedrichshafen	28.61	726.8	30.06	763.4	53.1	11.7	67	NNE			7		10	ENE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.11	764.9	30.19	766.7	60.1	15.6	49	ENE			3		3			0	0		Dr. Reinhold Kleemann.
Kiel	30.20	767.0	30.24	767.4	58.1	14.5	62	N			4		4			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.99	761.8	30.08	763.9	55.9	13.3	81	NE			4		10	NE		0.008	0.2		Prof. E. Luther.
Köslin			30.12	765.0	50.2	10.1		N			2		4			0.004	0.1		H. Müller.
Leipsic Observatory	29.71	754.5	30.13	765.2	49.1	9.5	57	NE			2		9	NNE		0	0		Prof. Dr. Bruhns, Privy Counselor.
Magdeburg	29.91	759.7	30.14	765.5	61.9	16.6	39	NNE			3		9ks	N		0	0		Dr. Assmann.
Memel	30.06	763.5	30.11	764.7	58.6	14.8	74	NE			2		10n						Reinbrecht & Issermann.
Munich	28.25	717.5	30.11	764.9	45.1	7.3	88	N			2		10	NE		0.386	9.8	Raining	Dr. C. Lang.
Neufahrwasser	30.11	764.7	30.12	765.1	50.7	10.4	74	NNE			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.55	750.6	30.08	764.0	61.5	16.4	43	E			1		10			0	0		Realiehrer Dicknether.
Posen	29.78	756.3	30.07	763.7	55.6	13.1	72	E			2		10			0.020	0.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.54	750.4	30.09	764.3	59.9	15.5	41	NE			5		8	NNE		0	0		Imp. University Observatory.
Stuttgart	29.11	739.3	30.00	761.9	56.7	13.7	59	E					10			0.075	1.9	Raining	Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.60	726.4	30.18	766.6	50.4	10.2	97	ENE	2.7	1.2			10		N	0.024	0.6		Realiehrer J. Hopfner.
Wustrow	30.28	769.0	30.30	769.6	58.1	14.5	50	NE			3		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.62	752.3	30.00	761.9	80.6	27.0		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds and the amount is inferred from the general terms published in the weather column; they omit the humidity and rain-fall.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.46	748.2	29.51	749.4	86.5	30.3	78	S	24	10.7			5	SW		0	0	D. clouds	
Deesa	29.00	736.7	29.45	748.0	103.8	39.9	19	SW	8.0	3.6			0			0	0	Misty	
Bombay	29.56	750.7	29.59	751.6	87.0	30.6	71	WNW	10	4.5			8	W	WNW	0	0	D. clouds	
Poona (Yarrowda)	27.73	704.4	29.59	751.6	72.7	22.6	86	W	17	7.6			9		E	1.74	44.2	Gloomy	
Belgaum	27.09	688.2	29.62	752.4	75.4	24.1	85	SW	12	5.4			7	E	SW	0.10	2.5	Threatening	
Lahore	28.64	727.5	29.33	745.1	107.8	42.1	19	Calm	0.8	0.4			0			0	0	Misty	
Roorkee	28.53	724.5	29.38	746.1	100.9	38.3	31	E	5	2.2			0			0	0	Sultry	
Agra	28.84	732.6	29.37	746.0	106.6	41.4	24	S	4.5	2.0			0			0	0		
Nagpur	28.38	720.9	29.36	745.8	105.1	40.6	21	Calm	2.3	1.0			9		SW	0	0	D. clouds	
Jubbulpore	28.11	714.0	29.40	746.8	102.2	39.0	20	E	4.0	1.8			10			0	0	Overcast	
Lucknow	29.07	738.4	29.43	747.6	98.0	36.7	35	ENE	3.0	1.3			0			0	0	Blue sky	
Allahabad	29.13	739.8	29.42	747.3	98.7	37.1	41	NE	3.6	1.6			0			0	0	Blue sky	
Patna	29.28	743.8	29.46	748.2	97.2	36.2	40	E	2.4	1.1			2	E	E	0	0		
Hazaribagh	27.52	699.0	29.48	748.6	87.8	31.0	52	ESE	7.9	3.5			4			0	0		
Cuttack	29.39	746.5	29.47	748.6	89.1	31.7	61	NE	2.2	1.0			3			0	0	D. clouds	
Calcutta (Alipore)	29.49	749.1	29.52	749.7	81.2	27.3	89	NNW	0.5	0.2			10			0.05	1.3	Drizzling	
Goalpara	29.12	739.5	29.51	749.6	89.0	31.7	66	Calm	3.7	1.6			1			0	0	D. clouds	
Chittagong	29.45	748.0	29.54	750.3	85.9	29.9	76	W	4.4	2.0			9			0	0		
Sibsagar	29.21	742.0	29.54	750.3	88.4	31.3	72	S	1.8	0.8			7	SW	SW	0	0	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0,011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.56	750.7	29.96	760.9	57.6	14.2	68	SE	3.1	1.4			10			0.472	12.0		Prof. Giovanni Clodig.
Milan	29.37	746.0	29.88	758.9	69.1	20.6	48	ESE	3.1	1.4			8	SW		0.157	4.0		Prof. Schiaparelli.
Padua	29.85	758.2	29.96	760.9	59.9	15.5	62	E	9.8	4.4			9	NE		0.126	3.2		Prof. Dott. Lorenzoni
Moncalieri	28.97	735.8	29.86	758.5	66.6	19.2	48	ENE	4.9	2.2			8	NW		0	0		Prof. P. F. Denza.
Genoa	29.72	754.9	29.91	759.8	65.8	18.8	47	NE	8.1	3.6			6	S		0	0		Prof. G. M. Garibaldi.
Mondovi	27.98	710.6	29.85	758.3	65.1	18.4	34	N			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.86	758.5	29.91	759.7	60.4	15.8	70	NW	16.1	7.2			9	SSW		0.528	13.4		Prof. Luigi Guidi.
Florence	29.64	752.8	29.89	759.2	66.2	19.0	52	N			4		3			0.169	4.3		Cav. F. Meucci.
Leghorn	29.83	757.7	29.91	759.8	68.7	20.4	55	SW	3.1	1.4			5			0.020	0.5		Prof. P. Monte.
Rome	29.78	756.3	29.95	760.7	68.5	20.3	62	SSW	16.8	7.5			7			0.358	9.1		Prof. P. S. Ferrari.
Lecce	29.70	754.4	29.95	760.8	75.2	24.0	39	SW	8.0	3.6			7			0	0		Prof. C. De Giorgi.
Cosenza	29.10	739.0	29.97	761.3	75.6	24.2	74	SE	3.1	1.4			5			0	0		Prof. D. Ot[illegible]i.
Cagliari	29.75	755.6	29.94	760.4	71.4	21.9	33	NW			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.76	756.0	30.02	762.4	72.5	22.5	39	W	8.1	3.6			9			0	0		Prof. G. Ciacciatore.
Syracuse	29.99	759.4	29.94	760.5	78.8	26.0	28	WSW	3.8	1.7			8	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.6	29.95	760.6	70.5	21.4	54	SW	6.3	2.8			2	SW		0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper; they omit the weather. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.6	20.3	80	WSW	6.0	2.7			10ks;s			0.906	23.01	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.51	749.5	29.71	754.6	65.5	18.6	77	SW	15.2	6.8			10s			0.760	19.30	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.61	752.1	29.67	753.6	68.6	20.3	98	SSW	10.2	4.6		0	10ks;s			1.780	45.21	Covered	The Staff.
Wakayama	29.51	749.5	29.56	750.8	75.6	24.2	88	S	27.1	12.1			10n			0.290	7.37	Raining	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.3	29.99	761.7	55.8	13.2	55	W			1	5cs	0			0	0	Fair	Prof. L. Perez.
Guanaxuato	23.65	600.6			61.5	16.4	71	ENE	0.7	0.3		9ps;s	1n	ESE	ESE	0	0	Covered	Vicente Fernandez.
Leon	24.37	618.9	29.91	759.8	68.5	20.3	68	S			2	7c	0	SE		0	0	Cloudy	Prof. M. Leal.
Mazatlan	29.61	752.2	29.87	758.8	72.5	22.5	90	E			1	0	0			0	0	Very clear	F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.3	29.95	760.8	59.0	15.0	70	Calm	0	0			10k			0	0	Covered	The Staff
Morelia	23.85†	605.8†			75.0	23.9	25	SE			4	4ck	0	NE		Inap.	Inap.	Fair	M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.8	29.84	757.9	61.9	18.3	46	SW			1	7c	0	SW		0	0	Hazy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.37	593.7	30.06	763.6	57.0	13.9	47	Calm	0	0		2ck	0	E		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.24	615.7	30.08	763.9	68.4	20.2	48	SE			1	2	6	W	E	0	0	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.80	756.8	29.81	757.1	80.8	27.1	92	Calm			0	2	5	E	N	0	0	Threatening	Prof. M. M. Chàzaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.57	573.2	30.07	763.7	64.2	17.9	52	Calm			0	5c	0	Calm		0	0	½ clouded	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,069.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.13	765.2	30.13	765.2	67.1	19.5		ESE			3					0	0		
Groningen	30.14	765.5	30.19	766.9	59.0	15.0		NE								0	0		
Helder	30.17	766.2	30.17	766.2	55.9	13.3		NE			2					0.028	0.7		
Hellevoetsluis	30.14	765.5	30.14	765.5	62.1	16.7	40	E			3					0	0		
Utrecht	30.11	764.8	30.16	766.0	62.1	16.7	51	NE			2		5			0	0	Cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; they do not give the humidity; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.22	767.5	30.27	768.9	60.1	15.6	48	W	11.0	4.9			1			0	0		
Brönö	30.32	770.0	30.35	771.0	53.6	12.0	43	SW	9	4			8			0	0		
Christiania	30.18	766.6	30.33	770.3	65.5	18.6	36	WSW	7	3			6			0	0		
Tromsö	30.11	764.7	30.16	766.1	43.0	6.1	84	SW	13	6			10			0.322	8.2		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.21	767.4	30.42	772.6	68.4	20.2	84	ESE			4		4			0	0		Dr. J. A. Sampaio.
Campo Major	28.94	735.0	29.90	759.5	80.2	26.8	30	NNE	1.3	0.6			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.06	763.5	30.15	765.7	68.7	20.4	66	WSW	6.9	3.1			0			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.64	752.8	29.99	761.7	73.4	23.0	55	NNW	15.0	6.7			1	N		0	0		The Staff.
Ponta Delgada (Azores)	30.22	767.6	30.29	769.4	65.5	18.6	67	ESE	16.1	7.2			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.																Sea or swell. Height scale 0–9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva.																				
St. Paul de Loando			29.97	761.2	76.1	24.5		W			1		2		W	1	W		D. clouds	C. J. de Sousa Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa,																				Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello																				
Mossamedes, Benguela			29.97	761.1	67.6	19.8		WSW			4					2	wsw		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes,																				
Macao, China			30.06	763.5	84.2	29.0		NW			1		4		NW	0			Blue sky	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; no humidity; duration of rain-fall in hours. The Sá da Bandeira gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	30.19	766.7	30.21	767.2	50.5	10.3	52	NW	13	6			7ks						Capt. Sselliwerstow.
Astrakhan	30.16	766.1	30.08	764.0	73.9	23.3	41	SE	11	5		c	8ks					Light clouds	Capt. Wisganow.
Barnaul	29.20	741.7	29.69	754.0	58.3	14.6	61	WSW	13	6			10						Meteorological Obs.
Dorpat	29.99	761.7	30.23	767.8	63.5	17.5	48	E	13	6			8cs						Prof. Dr. Weihrauch.
Ekaterinburg	29.02	737.2	29.95	760.6	72.5	22.5	36	NW	13	6			10n						Meteorological Obs.
Irkutsk																			
Kasan	29.69	754.1	29.95	760.6	75.2	24.0	68	S	7	3			8cs						Physical Cabinet.
Kertch	29.99	761.7	30.01	762.2	63.0	17.2	94	S	2	1			6						Lagorio.
Kieff	29.22	742.1	29.84	757.8	62.6	17.0	88	ENE	7	3			9cks;n						Physical Cabinet.
Krotkowo*	29.59	751.5	30.03	762.7	89.1	31.7	30	W	7	3			6k						Cand. Fatjanow.
Lugan	29.72	755.0	29.93	760.1	72.9	22.7	57	S	4	2			9			Blank	Blank		Meteorological Obs.
Moscow	29.46	748.3	29.98	761.5	75.0	23.9	54	S	7.8	3.5			7n						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.82	757.3	29.89	759.1	74.5	23.6	60	S	9	4			3k;ks						Kurdakof.
Nikolaievsk, on the Amoor	29.89	759.1	29.97	761.3	40.1	4.5	78	Calm	0	0			0						
Nukuss																			
Orenburg																			
Pekin (China)	29.69	754.1	29.83	757.7	73.0	22.8	53	Calm	0	0			2k						Physical Observatory.
St. Petersburg	30.23	767.9	30.25	768.3	60.8	16.0	34	NE	9	4		c	2cs					Light clouds	Central Physical Obs.
Tashkend	28.47	723.1	29.98	761.5	73.2	22.9	32	Calm	0	0			0						Teich, A. M.
Tiflis	28.49	723.7	29.84	757.8	81.0	27.2	45	E	4	2			2k						Physical Observatory.
Vladivostock																			
Warsaw	29.60	751.9	30.02	762.5	59.0	15.0	76	NNE	4	2			10ks						Astronomical Obs.
Wilna	29.59	751.6	30.00	761.9	65.7	18.7	80	N	7	3			6					Heavy clouds	Astronomical Obs.
Yeniseisk	29.40	746.7	29.67	753.7	64.9	18.3	70	S	2	1			10						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.87	758.7	29.97	761.3	70.2	21.2	47	SW	6.3	2.83		1c				0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	30.05	763.2	30.10	764.6	70.5	21.4	85	NW	1.9	0.84		2	4	NE		0	0	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.06	687.4			63.0	17.2	41	E	9.2	4.07			1			0	0	Almost clear	Domingo Martin y Perez.
Madrid, Royal Observatory	27.72	704.2	29.84	757.9	80.4	26.9	39	W	19.4	8.67		0	2			0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.85	758.1	29.99	761.8	77.0	25.0	62	NE	5.2	2.33		4	3	SE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.15	740.5	30.03	762.8	66.4	19.1	61	NNE	11.2	5.0		2	0			0	0	Light clouds	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.95	760.6	30.01	762.3	79.2	26.2	83	E	1.1	0.5		0	0			0.996	25.3	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands.	29.81	757.3	29.87	758.6	85.7	29.8	75	ESE	4.8	2.2						0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.87	758.7	29.96	761.1	77.9	25.5	44	ESE	11.0	4.9		0	1		E	0	0		Capt. C. Pulgzou, R. N., Dir.
San Juan de Porto Rico, W. I.	29.93	760.2	30.02	762.5	79.5	26.4	89	SE	0	0		6sk	4kn	SE	SE	0	0	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.25	768.4	30.29	769.4	51.1	10.6	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	30.31	769.8	30.36	771.1	56.1	13.4	44	SW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Hernosand	30.37	771.4	30.42	772.7	57.2	14.0	85	E	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	30.19	766.7	30.36	771.2	59.4	15.2	20	E	.....	.....	6	.....	7	.....	.....	0	0	.....	
Wisby	30.17	766.3	30.23	767.8	50.4	10.2	76	NE	.....	.....	6	.....	8	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.26	768.7	30.35	770.9	60.8	16.0	28	ENE	12.3	5.5	.....	.....	2	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0–9	Direction from—	Rain-fall		
Barque Australia,	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 53° 37′, E. 2° 59′	.....	.....	30.13	765.3	55.4	13.0	71	ESE	.....	4	.....	4?	.....	.....	.....	.....	.....	.....	Raining?	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.60	726.4	30.02	762.4	56.7	13.7	52	NNE	.....	.....	3	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.43	722.0	30.00	763.4	56.1	13.4	63	NE	.....	.....	2	.....	7	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.6 mm.; Thermometer, —5.0 Cent Relative Humidity, —4 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.00	762.1	76.6	24.8	39	SW	9	4.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valona	.....	.....	30.03	762.8	76.8	24.9	.....	SW	.....	.....	3	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	30.07	763.7	73.8	23.2	60	NW	.....	.....	1	ck	7ks	NE	NW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published, except Beirut by the Beaufort notation; no distinction between upper and lower clouds; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	49.0	9.4	.....	S	2	0.9	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.99	761.7	30.05	763.3	47.5	8.6	96	SE	6	2.7	.....	.....	10n	.....	.....	0.38	9.7	Light rain	G. A. Blair.
Charlottetown, P. E. Island	30.10	764.5	30.15	765.8	52.4	11.3	80	SE	13	5.8	.....	.....	10n	.....	.....	0.010	0.25	Light rain	H. J. Cundall, C. E
Cornwall, Ontario	29.50	749.3	29.68	753.9	61.3	16.3	92	W	.....	.....	3	.....	10s	.....	.....	0.520	13 21	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.84	757.9	30.01	762.2	46.5	8.1	.....	E	.....	.....	3	.....	10n	.....	.....	0.57	14.5	Raining	H. A. Johnson.
Father Point, Quebec	29.84	757.9	29.86	758.4	49.6	9.8	89	S	9	4.0	.....	.....	10n	.....	.....	0.24	6.1	Threatening	J. McWilliams.
Fredericton, N. B.	29.92	760.0	29.99	761.7	50.0	10.0	93	SE	12	5.4	.....	.....	10n	.....	.....	0.535	13.59	Light rain	Prof. Harrison.
Fort Garry, Manitoba	29.17	740.9	30.01	762.2	39.0	3.9	73	NW	12	5.4	.....	3ck	3ks	NW	.....	0	0	Fair	James Stewart.
Granton, Ontario	28.83	732.3	29.90	759.4	59.0	15.0	88	W	.....	.....	2	1cs	0	.....	.....	0.20	5.1	Clear	James Grant.
Halifax, N. S.	30 02	762.5	30.10	766.1	49.0	9.4	93	SE	7	3.1	.....	.....	10n	.....	.....	0.050	1.27	Light rain	A. Allison.
Hamilton, Ontario	29.50	749.3	29.86	758.9	60.3	15.7	82	W	.....	.....	3	0	6ks	.....	.....	0.25	6.3	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.44	747.8	29.76	755.9	61 5	16.4	80	SW	11	4.9	.....	.....	10ks	.....	.....	0.73	18.5	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.21	767.3	30.25	768.3	51.9	11.1	73	S	3	1.3	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.48	748.8	29.68	753.9	59.8	15.4	95	SW	13	5.8	.....	.....	10n	.....	.....	0.77	19.6	Heavy rain	C. H. McLeod, C. E
Moose Factory, Ontario	29.47	748.5	29.50	749.3	56.0	13.3	87	SW	.....	.....	1	.....	9n	.....	.....	Inap.	Inap.	Cloudy	J. R. Nason.
Norwood, Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Rev. T. F. Fotheringham, M A
Parry Sound, Ontario	29.14	740.1	29.82	757.4	49.2	9.6	93	W	20	8.9	.....	.....	10n	.....	.....	0.71	18.0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.10	739.1	29.83	757.7	57.2	14 0	81	W	.....	.....	4	.....	10ks	.....	.....	0.20	5.1	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.25	742.9	29.92	760 0	59.1	15 1	94	SW	8	3.6	.....	2ck	0	W	.....	0.23	5.8	Fair	H. Morgan.
Port Stanley, Ontario	29.31	744.5	29.94	760.5	59.3	15.2	87	W	5	2.2	.....	Haze	0	.....	.....	0.15	3.8	Hazy	M. Payne.
Quebec, Quebec	29.46	748.3	29.78	756 4	55.5	13.1	100	E	.....	.....	3	.....	10n	.....	.....	0.95	24.1	Heavy rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.25	742.9	29.70	754.4	56.0	13.3	93	Calm	0	0	.....	.....	10s	.....	.....	0.63	16.0	Light rain	W. H. McIntyre.
St. John, N. B.	29.82	757.4	29 99	761.7	49.0	9.4	96	SE	9	4.0	.....	.....	10n	.....	.....	0.310	7.87	Light rain	G. Murdock, C. E.
Saugeen, Ontario	29.15	740.4	29.85	758.2	58.1	14.5	81	SW	8	3.6	.....	8cs	0	.....	.....	0.97	24.6	Fair	K. Stewart.
Stratford, Ontario	28.64	727.4	29.89	759.2	55.5	13.1	92	SW	5	2.2	.....	2cs	2s	.....	.....	0.547	13.90	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	30.24	768.1	30.28	769.1	52.0	11.1	63	S	2	0.9	.....	.....	10n	.....	.....	0	0	Cloudy	T. C. Hill, C. E
Toronto, Ontario	29.53	750.0	29.91	759.7	57.8	14.3	77	W	11	4.9	.....	.....	10ks	.....	.....	0.090	2.29	Cloudy	Magnetic Observatory
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M A
Woodstock, Ontario	28.87	733.3	29.91	759.7	60.8	16 0	79	SW	15	6.7	.....	8c	0	W	.....	0.24	6.1	Fair	Professor Wolverton.
Yarmouth, N. S.	29.94	760.5	30.01	762.2	54.1	12.3	97	SE	19	8.5	.....	.....	10s	.....	.....	0.63	16.0	Raining	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.11	764.8	30.36	771.1	55.5	13.1	42	S	2	0.9	.....	0	0	.....	.....	0	0	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	30.24	768.1	45.7	7.6	.....	SE	.....	.....	1	.....	.....	.....	.....	0	0	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the amount of cloudiness by the scale 0 to 10. At St. Pierre wind-force is given on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters; Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.76	755.9	29.84	757.9	69	20.6	70	W	3	1.3			10ks		NW	0.72	18.3	Cloudy	
Alpena, Michigan	29.16	740.7	29.78	756.4	55	12.8	87	SW	4	1.8		10cs	0	Calm		0.80	20.3	Cloudy	
Atka, Alentian Is., Alaska																			
Atlanta, Georgia	28.96	735.6	30.07	763.8	69	20.6	90	S	3	1.3			10s		Calm	1.11	27.2	Cloudy	
Atlantic City, New Jersey	29.93	760.2	29.94	760.5	70	21.1	70	NW	10	4.5		2k	0	NW		0.04	1.0	Clear	
Augusta, Georgia	29.93	760.2	30.13	765.3	72	22.2	85	Calm	0	0		5cs	0	W		0.03	0.8	Fair	
Baltimore, Maryland	29.94	760.5	29.99	761.7	70	21.1	57	W	6	2.7		0	8ks		NW	0.16	4.1	Fair	
Barnegat, New Jersey	29.88	758.9	29.90	759.4	72	22.2	67	NW	13	5.8		5k	0	SW		0.11	2.8	Fair	
Bismarck, Dakota	28.29	718.6	30.15	765.8	43	6.1	83	W	12	5.4		0	0			0.02	0.5	Clear	
Boerne, Texas	28.49	723.6	29.74	755.4	73	22.8	98	S	6	2.7		0	5ks		S	0	0	Fair	
Boise City, Idaho	27.39	695.7	30.35	770.9	42	5.6	53	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.67	753.6	29.82	757.4	66	18.9	95	S	10	4.5			10n		SW	0.25	6.3	Light rain	
Brackettville, Texas	28.75	730.2	29.76	755.9	74	23.3	86	E	12	5.4			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	29.03	737.3	30.03	762.7	44	6.7	76	W	4	1.8		2k	0	W		0	0	Fair	
Brownsville, Texas	29.81	757.2	29.86	758.4	84	28.9	75	SE	8	3.6		0	0			0	0	Clear	
Buffalo, New York	29.23	742.4	29.91	759.7	57	13.9	81	SW	16	7.2			10s		SW	0.49	12.4	Cloudy	
Burkes, Arizona					58	14.4	37	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.46	748.3	29.74	755.4	60	15.6	94	SW	5	2.2			10n		SW	0.43	10.9	Light rain	
Cairo, Illinois	29.62	752.3	29.99	761.7	78	25.6	69	S	5	2.2		0	0			0	0	Clear	
Campo, California	27.29	693.2	29.86	758.4	37	2.8	81	SW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.05	763.3	30.06	763.5	76	24.4	82	SW	17	7.6		0	0			0.04	1.0	Clear	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	74	23.3	76	SW	14	6.3		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.06	763.5	30.07	763.8	77	25.0	77	W	12	5.4		2c	0	Calm		Inap.	Inap.	Clear	
Cape May, New Jersey	29.92	760.0	29.95	760.7	69	20.6	75	NW	28	12.5		2k	0	W		0.06	1.5	Fair	
Castroville, Texas	29.14	740.1	29.81	757.2	77	25.0	82	SE	7	3.1			10s		S	0	0	Threatening	
Cedar Keys, Florida	30.07	763.8	30.10	764.5	81	27.2	78	SE	6	2.7		5k	0	SE		0	0	Fair	
Charleston, South Carolina	30.03	762.7	30.08	764.0	80	26.7	78	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.22	742.2	30.01	762.2	68	20.0	90	SW	4	1.8			10s		SW	0.06	1.5	Cloudy	
Chattanooga, Tennessee	29.29	744.0	30.06	763.5	74	23.3	81	SW	7	3.1		1k	0	W		0.01	0.3	Clear	
Cheyenne, Wyoming	24.24	615.7	30.18	766.6	32	0.0	79	NW	4	1.8			10s		NW	0.07	1.8	Cloudy	
Chicago, Illinois	29.19	741.4	29.85	758.2	63	17.2	83	S	2	0.9			10s		S	0.38	9.7	Cloudy	
Chincoteague, Virginia	29.96	761.0	29.97	761.2	73	22.8	87	W	18	8.0		10k	0	W		0.03	0.8	Cloudy	
Cincinnati, Ohio	29.41	747.0	30.05	763.3	64	17.8	73	SE	4	1.8		4c	0	Calm		0.05	1.3	Fair	
Cleveland, Ohio	29.29	744.0	30.00	762.0	63	17.2	75	SW	12	5.4		5cs	0	W		0.33	8.4	Fair	
Coleman City, Texas																			
Columbus, Ohio	29.22	742.2	30.04	763.0	61	16.1	77	SW	1	0.4		0	Fog		Calm	0.05	1.3	Clear	
Concho, Texas	28.00	711.2	29.59	751.6	75	23.9	72	SE	13	5.8		8c	0	S		0	0	Fair	
Corsicana, Texas	29.51	749.5	29.96	761.0	78	25.6	82	S	4	1.8		0	8s		Calm	0	0	Cloudy	
Davenport, Iowa	29.22	742.2	29.84	757.9	60	15.6	94	N	11	4.9			10s		N	1.60	40.6	Cloudy	
Dayton, Washington T'y					43	6.1	83	NE			1	2c	0	NW		0	0	Clear	
Deadwood, Dakota	25.56	649.2			34	1.1	61	Calm	0	0		0	0			0.18	4.6	Clear	
Decatur, Texas	28.79	731.3	29.90	759.4	76	24.4	86	S	7	3.1		2k	5s	S	S	0	0	Fair	
Delaware Breakwater, Del.	29.94	760.5	29.96	761.0	70	21.1	70	NW	24	10.7		0	5ks		NW	0.02	0.5	Clearing	
Denison, Texas	29.17	740.9	29.92	760.0	76	24.4	86	SW	5	2.2			8ks		S	0	0	Fair	
Denver, Colorado	25.03	635.8	30.25	768.3	36	2.2	90	NW	3	1.3			10n		Calm	0.28	7.1	Light snow.	
Des Moines, Iowa	29.13	739.9	30.01	762.2	52	11.1	79	N	6	2.7		0	8s		NW	1.83	46.5	Cloudy	
Detroit, Michigan	29.29	744.0	29.94	760.5	59	15.0	88	SW	7	3.1			10s		Calm	0.89	22.6	Cloudy	
Dodge City, Kansas	27.57	700.3	29.90	759.4	46	7.8	69	N	25	11.2		5ck	5s	SW	Calm	0	0	Cloudy	
Dubuque, Iowa	29.24	742.7	29.92	760.0	54	12.2	80	NW	5	2.2			10ks		NW	0.68	17.3	Cloudy	
Duluth, Minnesota	29.22	742.2	29.90	759.4	45	7.2	76	W	16	7.2		5cs	0	W		0.17	4.3	Fair	
Eagle Pass, Texas	29.03	737.3	29.72	754.9	78	25.6	78	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	29.87	758.7	29.94	760.5	51	10.6	93	S	14	6.3			10n		S	0.88	22.4	Light rain	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.27	743.4	29.96	761.0	61	16.1	77	SW	17	7.6		0	2ks		W	0.46	11.7	Fair	
Escanaba, Michigan	29.10	739.1	29.74	755.4	51	10.6	100	NW	8	3.6			10s		NW	0.02	0.5	Cloudy	
Florence, Arizona	28.31	719.1	29.91	759.7	67	19.4	51	N	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	24.97	634.2	30.42	772.7	40	4.4	48	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.10	713.7	29.98	761.5	41	5.0	91	NW	5	2.2		5cs	0	NW		0.01	0.3	Fair	
Fort Custer, Montana	27.04	686.8			40	4.4	64	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.13	638.3	30.09	764.3	72	22.2	54	W	4	1.8		2cs	0	SW		0	0	Fair	
Fort Elliot, Texas	27.12	688.8	29.37	746.0	49	9.4	44	N	32	14.3		10cs	0	N		0	0	Cloudy	
Fort Gibson, Indian Ter.	29.39	746.5	29.89	759.2	80	26.7	74	SE	4	1.8		2cs	0	S		0	0	Fair	
Fort Grant, Arizona	25.13	638.3	29.93	760.2	63	17.2	11	E	5	2.2		0	0			0	0	Clear	
Fort Griffin, Texas	28.69	728.7	29.90	759.4	75	23.9	83	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.46	697.5			43	6.1	67	SW	6	2.7		0	0			0	0	Clear	
Fort McKavett, Texas	27.66	702.6	29.51	749.5	73	22.8	76	SE	16	7.2			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory																			
Fort Stevenson, Dakota	28.26	717.8			43	6.1	75	NW	6	2.7		0	0			0	0	Clear	
Fort Verde, Arizona					54	12.2	43	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.93	760.2	29.97	761.2	81	27.2	83	SE	12	5.4		0	5ks		S	0	0	Fair	
Grand Haven, Michigan	29.18	741.1	29.81	757.2	59	15.0	94	S	12	5.4			10n		Calm	0.16	4.1	Light rain	
Helena, Montana					37	2.8	63	S	2	0.9		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.19	741.4	29.95	760.7	67	19.4	74	S	8	3.6		8c	2s	SW	Calm	0	0	Cloudy	
Indianola, Texas	29.92	760.0	29.94	760.5	82	27.8	83	SE	10	4.5		2k	0	Calm		0	0	Fair	
Jacksboro, Texas	28.83	732.3	29.91	759.7	75	23.9	90	W	2	0.9			10s		W	0	0	Cloudy	
Jacksonville, Florida	30.08	764.0	30.10	764.5	78	25.6	78	Calm	0	0		2cs	8s	Calm	S	0	0	Cloudy	
Keokuk, Iowa	29.23	742.4	29.82	757.4	63	17.2	94	NW	6	2.7			10s		NW	0.95	24.1	Cloudy	
Key West, Florida	30.02	762.5	30.05	763.3	80	26.7	78	E	8	3.6		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	75	23.9	77	SW	20	8.9		2k	0	SW		0	0	Clear	
Knoxville, Tennessee	29.10	739.1	30.07	763.8	69.5	20.8	93	SW	6	2.7			10ks		SW	0.01	0.3	Cloudy	
La Crosse, Wisconsin	29.18	741.1	29.90	759.4	54	12.2	80	NW	4	1.8			10s		NW	0.28	7.1	Cloudy	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	55	12.8	28	N	1	0.4		0	0			0	0	Clear	
Laredo, Texas	29.41	747.8	29.76	755.9	81	27.2	74	SE	4	1.8		0	0			0	0	Clear	
Leavenworth, Kansas	29.16	740.7	30.00	762.0	55	12.8	81	N	14	6.3		5k	5ks	N	N	0.70	17.8	Cloudy	
Lewiston, Idaho	29.45	748.0	30.00	762.0	45	7.2	60	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.64	752.8	29.95	760.7	75	23.9	86	SW	4	1.8		0	0			0	0	Clear	
Los Angeles, California	29.52	749.8	29.86	758.4	58	14.4	82	E	4	1.8			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.46	748.3	30.00	762.0	69	20.6	70	SE	8	3.6		3c;cs	0	Calm		0	0	Clear	
Lynchburg, Virginia	29.32	744.6	29.97	761.2	76	24.4	52	SW	3	1.5		0	0			0	0	Clear	
Madison, Wisconsin	28.87	733.5	29.83	757.7	54	12.2	93	NW	4	1.8			10s		Calm	0.38	9.7	Cloudy	
Marquette, Michigan	29.05	737.9	29.73	755.1	51	10.6	93	NW	4	1.8			10n		NW	1.06	26.9	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.27	718.0	29.95	760.7	75	23.9	81	SE	2	0.9		5cs	0	SW		0	0	Fair	
Memphis, Tennessee	29.65	753.1	29.97	761.2	79	26.1	78	SE	6	2.7		2cs	0	S		0	0	Clear	
Milwaukee, Wisconsin	29.11	739.4	29.82	757.4	60	15.6	88	SW	9	4.0			10n		W	0.16	4.1	Light rain	
Mobile, Alabama	30.04	763.0	30.08	764.0	80	26.7	87	S	4	1.8		2k	2s	S	S	Inap.	Inap.	Fair	
Montgomery, Alabama	29.88	758.9	30.10	764.5	74	23.3	97	S	1	0.4			10ks		SW	2.09	53.1	Cloudy	
Morgantown, West Virginia	29.09	738.9	30.05	763.3	67	19.4	69	W	3	1.3		0	5ks		W	0.19	4.8	Fair	
Mt Washington, N H	23.67	601.2	30.03	762.7	45	7.2	100	W	40	17.9			10n		W	1.06	26.9	Light rain	
Nashville, Tennessee	29.54	750 3	30.05	763.3	75	23.9	68	W	2	0.9		0	0			0	0	Clear	
New Haven, Connecticut	29.72	754.9	29.83	757.7	74	23.3	72	W	10	4.5		5ck	2s	W	W	0.65	16.5	Fair	
New London, Connecticut	29.79	756.7	29.84	757.9	64	17.8	97	SW	6	2.7			10n		Calm	0.57	14.5	Light rain	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	80	26.7	82	SE	5	2.2		1k	Haze	SE	Calm	0.05	1.3	Fair	
Newport, Rhode Island	29.81	757.2	29.86	758.4	63	17.2	94	S	9	4.0			10n		Calm	0.45	11.4	Light rain	
New River, North Carolina																			
New York, New York	29.71	754.6	29.88	758.9	68	20.0	79	W	11	4.9		1k	0	W		0.45	11.4	Clear	
Norfolk, Virginia	29.94	760.5	30.00	762.0	80	26.7	59	W	6	2.7		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.31	694.7	29.93	760.2	44	6.7	76	NW	7	3.1			10s		Calm	0	0	Cloudy	
Olympia, Washington Ter	30.20	767.1	30.24	768.1	43.0	6.1	92	N	2	0.9		8cs	0	N		0	0	Fair	
Omaha, Nebraska	28.95	735.3	30.04	763.0	51	10.6	86	N	10	4.5			10s		W	0.40	10.2	Cloudy	
Oswego, New York	29.56	750.8	29.88	758.9	54	12.2	87	W	15	6.7			10s		W	0.54	13.7	Cloudy	
Pembina, Dakota	29.14	740.1	29.98	761.5	38	3.3	81	NW	13	5.8		0	0			0	0	Clear	
Pensacola, Florida	30.06	763.5	30.09	764.3	80	26.7	78	S	3	1.3		1k	0	S		0	0	Clear	
Philadelphia, Pennsylvania	29.89	759 2	29.94	760.5	69	20.6	65	W	20	8.9		1k	0	W		0.22	5.6	Clear	
Phœnix, Arizona	28.68	728.5	30.38	771.6	78	25.6	26	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.76	451.1	29.96	761.0	20	— 6.7	70	SW	16	7.2		2ck	0	SW		0.02	0.5	Clear	
Pilot Point, Texas	29.18	741.1	29.99	761.7	76	24.4	86	S	6	2.7			10ks		SW	0	0	Cloudy	
Pioche, Nevada	24.10	612.1	29.87	758.7	39	3.9	31	NW	10	4.5		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.04	763.0	61	16.1	77	W	7	3.1		2k	0	W		0.22	5.6	Clear	
Port Huron, Michigan	29.26	743.2	29.90	759.4	61	16.1	77	SW	11	4.9		10cs	0	Calm		0.49	12.4	Cloudy	
Portland, Maine	29.74	755.4	29.78	756.4	59	15.0	94	S	10	4.5			10n		Calm	0.74	18.8	Light rain	
Portland, Oregon	30.17	766.3	30.24	768.1	47.5	8.6	93	Calm	0	0		2cs	0	NW		0	0	Clear	
Portsmouth, North Carolina					76	24.4	77	SW	20	8.9		2k	0	SE		0	0	Clear	
Prescott, Arizona	24.69	627.1	30.05	763.3	43	6.1	43	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.03	762.7	30.05	763.3	79	26.1	78	E	10	4.5		0	1ks		E	0.17	4.3	Clear	
Red Bluff, California	29.64	752.8	29.99	761.7	64.0	17.8	32	NW	14	6.3		0	0			0	0	Clear	
Rio Grande City, Texas	29.70	754.4	29.90	759.4	81	27.2	78	SE	12	5.4		0	5ks		S	0	0	Fair	
Rochester, New York	29 27	743.4	29.86	758.4	60	15.6	82	W	17	7.6			10ks		W	0.53	21.1	Cloudy	
Roseburg, Oregon	29.66	753.4	30.25	768.3	42.5	5.8	87	Calm	0	0		1c	0	Calm		0	0	Clear	
Sacramento, California	29.78	756.4	29.85	758 2	64	17.8	63	N	16	7.2		0	0			0	0	Clear	
St. Louis, Missouri	29.33	745.0	29.88	758.9	73	22.8	76	S	15	6.7		1c	2ks	Calm	W	0	0	Fair	
St. Paul, Minnesota	29.12	739.6	29.95	760 7	49	9.4	71	NW	12	5.4		4c	0	NW		0.33	8.4	Clearing	
Salt Lake City, Utah	25.29	642.4	30.12	765.0	45	7.2	46	E	8	3.6		2k	0	Calm		0	0	Clear	
San Antonio, Texas	29.26	743.2	29.92	760.0	80	26.7	82	SE	4	1.8			10ks		SE	0	0	Cloudy	
San Diego, California	29.82	757.4	29.89	759.2	61	16.1	77	SW	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.33	745.0	29.99	761.7	62	16.7	77	SW	14	6.3		10cs	0	Calm		0.30	7.6	Cloudy	
Sandy Hook, New Jersey	29.87	758.7	29.90	759.4	72	22.2	76	W	16	7.2		0	0			1.53	38.9	Clear	
San Francisco, California	29.82	757.4	29.88	758.9	65	18.3	40	N	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	52	11.1	20	E	3	1.3		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.02	762.5	30.11	764.8	80	26.7	78	SW	1	0.4		1k	Haze	W	Calm	Inap.	Inap.	Clear	
Shreveport, Louisiana	29.75	755.6	29.96	761.0	77	25.0	86	S	6	2.7		0	5s		Calm	0.42	10.7	Fair	
Silver City, New Mexico																			
Smithville, North Carolina																			
Socorro, New Mexico																			
Springfield, Illinois	29.22	742.2	29.86	758.4	69	20.6	85	S	10	4.5		2cs	5ks	W	SW	0	0	Fair	
Springfield, Massachusetts	29 70	754.4	29.82	757.4	69	20.6	85	SW	2	0.9		0	8s		SW	0.72	18.3	Cloudy	
Stockton, Texas	26.82	681.2	29.82	757.4	75	23.9	77	SE	10	4.5		5cs	0	SE		0	0	Fair	
Thatcher's Island, Mass	29.78	756.4	29.83	757.7	59	15.0	100	SW	16	7.2			10n		SW	0.64	16.3	Heavy rain	
Toledo, Ohio	29.27	743.4	29.93	760.2	63	17.2	83	SW	12	5.4		8c	0	SW		0.22	5.6	Cloudy	
Tucson, Arizona	27.40	696.0	29.95	760.7	70	21.1	21	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.88	758.9	30.38	771.6	46	7.8	62	E	7	3.1		0	0			0	0	Clear	
Uvalde, Texas	28.95	735.3	29.73	755.1	78	25.6	78	SE	6	2.7		5ck	2s	S	S	0	0	Cloudy	
Vicksburg, Mississippi	29.78	756.4	30.03	762.7	76	24.4	95	S	6	2.7			10s		S	0.20	5.1	Cloudy	
Virginia City, Montana	24.44	620.8	29.92	760.0	29	— 1.7	67	W	1	0.4		0	0			0	0	Clear	
Visalia, California	29.46	748.3	29.82	757.4	55.5	13.1	65	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C	29.89	759.2	30.00	762.0	69	20.6	56	NW	15	6.7		1k	0	NW		0.27	6.9	Clear	
Wickenburg, Arizona					71	21.7	29	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.98	761.5	30.06	763.5	81	27.2	59	SW	7	3.1		2c	0	SW		Inap.	Inap.	Fair	
Winnemucca, Nevada	25.80	655.3	30.16	766.1	32	0.0	50	N	12	5.4		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.82	757.4	29.86	758.4	64	17.8	94	SW	25	11.2			10ks		SW	0.08	2.0	Threatening	
Yankton, Dakota	28.86	733.0	30.17	766.3	49	9.4	71	NW	4	1.8		10c	0	W		0.23	5.8	Cloudy	
Yuma, Arizona	29.57	751.1	29.71	754.6	68	20.0	79	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.04	559.8			56.5	13.6	75	Calm	0	0			10n			0.35	8 9	Cloudy	Thomas Herran.
Havana, Cuba, W. I	29.98	761.5	30.03	762.7	79	26.1	86	Calm	0	0			0			1.00	25.4	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I	29.95	760.7	29.96	761.0	81	27.2	83	Calm	0	0		8c	2ks	Calm		0	0	Fair	James Gall.
Navassa, W. I	29.86	758.4	29.94	760.5	78	25.6	82	E	7	3.1		5ck	2s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.00	762.0	30.00	762.0	78	25.6	91	E			2	5k	7ks	E		0.080	2.08	Cloudy	C. J. Hering.
Puerto Ferro, U.S.Col'bia	29.43	747.5	29.98	761.5	80	26.7	89	Calm			0		8ks			0.23	5.8		Francesco J. Cisneros
Rivas, Nicaragua‖					77	25		NW				2pc	1k	SW	NW	Blank	Blank	Fair	Earl Flint.
Santiago de Cuba, W. I	29.96	761.0	29.98	761.5	79	26.1	78	NNE	6.8	3.0		0	2s		NE	0	0		Robert Mason
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	29.81	757.2	29.86	758.4	27.0	— 2.8	100	N	9	4.0			10n		N	0.35	8.9	Snowing	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) feet, or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4 36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.12	765.0	78	25.6	91	SE	3	1.3			5		S					Fair	
§ Navy Yard, Portsmouth, N. H.	29.87	758.7	64	17.8	78	S	2	0.9			10			0.8	20.			Cloudy	
Naval Hospital, Yokohama, Japan	29.72	754.9	71.5	21.9	92	SW			5		10ks;n		SW	0.19	4.8			Threatening	
§ Adams, Punta Arenas, Costa Rica	29.91	759.7	77	25.0	91	N			1		2		N			Ground	SSE	Fair	
§ Alaska, Callao, Peru *	29.95	760.7	62	16.7	88	SSE			2		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.70	754.4	72	22.2	90	S			3		10		Calm			Smooth		Squally	
Alliance, N. 37° 26', W. 72° 28'	30.02	762.5	69	20.6	100	S			3		10		Calm	0		Mod'ate		Cloudy	
§ Ashuelot, Shanghai, China	29.91	759.7	65	18.3	78	W			2		2		Calm					Fair	
Colorado, New York, N. Y.	29.87	758.7	67	19.4	89	WSW	5	2.2			0			0.315	8.00			Clear.	
§ Constitution, New York, N. Y.	29.87	758.7	69	20.6	80	WNW	5	2.2			2		NW					Clear.	
§ Franklin, Off Navy Yard, Norfolk, Va	29.99	761.7	74	23.3	76	WSW	14.4	6.4			2		W	0	0			Fair	
Independence, § Mare I'd, Navy Yard, Cal.	29.86	758.4	66	18.9	100	NW	1.2	0.5			1		NW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.96	761.0	47	8.3	100	NE			1		10					Smooth		Light rain	
Kearsarge, N. 30° —', W. 79° 45'	30.10	764.5	79	26.1	82	SSE			3				SSE			Smooth		Fair	
§ Lackawana, N. 14° 00', W. 91° 45' †	29.96	761.0	81	27.2	87	SE			3-4		8		SE			Smooth	SE	Fair	
§ Marion, Port Stanley, Falkland I'd	29.37	746.0	38	3.3	91	W			1		2			Blank	Blank	Smooth		Clear	
§ Michigan, Erie, Pa.	29.89	759.2	64	17.8	83	W			5		2		W					Clear	
§ Monocacy, N. 32° 40', E. 122° 40'	29.67	753.6	58	14.4	88	WNW			5		8		NW			Mod'ate	NW	Squally	
§ New Hampshire, Port Royal, S. C.	29.92	760.0	78	25.6	77	SW	12	5.4			2		Calm	0	0			Clear	
Nipsic, Villafranca, France	29.91	759.7	66	18.9	68	SSW			3		5					Smooth		D. clouds	
§ Onward, Ancon Bay, Peru †	30.07	763.8	63	17.2	89	SW			2		10		S			Long	W	Cloudy	
§ Palos, Shanghai, China	29.87	758.7	67	19.4	100	W			1		5		W					Fair	
§ Passaic, Washington, D. C.	30.01	762.2	72	22.2	67	SW			5		0			0.7	18.			Squally	
§ Pensacola, San Francisco, Cal.	29.82	757.4	65	18.3	63	NW			1		0					Smooth		Hazy	
§ Portsmouth, Bermuda	30.22	767.6	75	23.9	64	SE			1		10			0	0	Smooth		Cloudy	
§ Powhatan, N. 40° 17', W. 73° 52'	29.89	759.2	66	18.9	89	WNW			3		2		W			Mod'ate	S	Clear	
§ Quinnebaug, Antwerp, Netherland	30.11	764.8	63	17.2	47	ENE			1		5		ENE					Fair	
§ Richmond, Shanghai, China	29.88	758.9	66	18.9	89	NW			1		5?		Calm					Clear?	
§ Rio Bravo, Brownsville, Texas †	29.82	757.4	78	25.6	??	SE	2	0.9			5		Calm	0	0			Fair	
§ Saratoga, N. 36° 48', W. 7° 06'	29.97	761.2	76	24.4	68	Var.			1		2		Calm	0	0	Smooth		Hazy	
§ Shenandoah, Montevideo, Uruguay	30.14	765.5	54	12.2	49	S			4		8					Mod'ate	S	Fair	
§ St. Louis, League Island, Pa.	29.95	760.7	69	20.6	75	W	13	5.8			2		W	0.18	4.6			Clear	
Swatara, Bangkok, Siam †	29.71	754.6	83	28.3	87	SSW			5		10		S			Mod'ate	S	Cloudy	
Ticonderoga, N. 34° 27', E. 128° 41'	29.73	755.1	71	21.7	100	SSW			4		10		SW			Mod'ate	SW	Cloudy	
§ Trenton, Villafranca, France	29.88	758.9	70	21.1	61	Calm			0		0			10 h'rs Mod'ate	10 h'rs Mod'ate	None		Clear	
§ Vandalia, Huntington, Long Island.	29.81	757.2	66	18.9	89	W			3		2		W					Fair	
§ Wabash, Boston, Mass.	29.82	757.4	68	20.0	90	SSW	13	5.8			10			0.18	4.6			Rainy	
§ Wachusett, Sandy Point, Strait of Magellan	29.72	754.9	42	5.6	83	SW			3		2		SW	0	0	Smooth		Clear	
Wyoming, Villafranca, France	29.89	759.2	66	18.9	59	S			2-3		5		S			Smooth	S	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the 24 hrs.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			*W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent																			
S. S. Ohio, Henry Morrison, Liverpool, Eng *†	30.15	765.8	54	12.2	93	SE			3		10		SE	3 h'rs	3 h'rs			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 41° 19', W. 57° 45' *†	30.34	770.6	53	11.7	86	E			1		8		E	0	0	Smooth		Cloudy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger,																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 50° 58', W. 14° 47' *	29.88	758.9	66	18.9	79	NW			2		10		NW	Drizzles.		Light	NW	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			C. Undütsch.
S. S. Braunschweig, C. Undutsch, N. 40° 03', W. 57° 07	30.35	770.9	61	16.1	71	E			2		2		E	0	0	Mod'ate	NE	Fair	S. Risius.
S. S. Leipzig, F. Pfeiffer																			
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama Japan †	29.69	754.1	68	20.0	90	SE			1		10		SE			Smooth		Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 33', W. 166° 22' †	30.22	767.6	69	15.0	88	Var.			2		1cs		W	0	0	Mod'ate	W	Cloudy	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon	30.24	768.1	53.5	11.9	80	SE			1		2cs		W					Hazy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal. †	29.94	760.5	62	16.7		NW			2		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, N. 46° 46', W. 124° 26' †	29.83	757.7	47	8.3		NW			3		5		W			Mod'ate	W	Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San Jose, Guatemala...†	29.81	757.2	78	25.6	95	E			1		8		SE			Heavy	S	Cloudy	F. A. Johnston. Banneman.
§ S. S. Australia																			
§ S. S. China, W. B. Seabury																			J. M. Lacklan.
§ S. S. City of Chester, J. M. Lacklan.																			
§ S. S. City of New York, W. B. Cobb. S. 36° 50′, E. 174° 49′.... †	29.57	751.1	63	17.2	100	W			2		8		SW	0	0	Smooth		Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. San Jose, Guatemala...†	29.91	759.7	77	25.0	100	NE			1		10		NE	1½ h'rs	1½ h'rs	Long	SW	Rainy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 23° 01′ E. 117° 06′.... †	29.82	757.4	78	25.6	91	SW			3		2		SW			Smooth		Fair	
§ S. S. City of Sidney, H. C. Dearborn S. 12° 00′, W 170° 00′...*†	29.82	757.4	84	28.9		ENE			6		5		ENE	0	0	Mod'ate	ENE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury N. 37° 15′, W 124° 25′...†	30.14	765.5	59	15.0	76	SW			1		0			0	0	Smooth		Clear	F. S. Doane.
§ S. S. Colima, R. R. Searle,																			
§ S. S. Dakota, D. E. Griffiths N. 41° 12′, W. 124° 33′....†	30.07	763.8	52	11.1	86	NNW			4		0			0	0	Mod'ate	NW	Clear	D. E. Griffiths.
§ S. S. Granada, J. M Cavarly																			
§ S. S. Idaho, Esquimalt Harbor, Vancouver I'd.	30.11	764.8	59	15.0		Calm			0		0			0	0			Clear	
§ S. S. Zealandia, R. C. Ghest,																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa,																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 46° 40′, W 24° 59′.....†	30.34	770.6	61	16.1		SSW			2		2		S	0	0			Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 43° 20′, W. 47° 19′.....†	29.93	760.2	62	16.7		SW to WNW			4		8		W			Long	W	Raining	H. N. Goulden. J. Jones.
S. S. Britanic, H. Perry,																			
S. S. Celtic, B. Gleadell																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Vin yard Haven, Mass†	29.91	759.7	58	14.4		SSW			5		10		SSW	1.12	28.4			Stormy	Mehaffey.
Schr Adolf Fuller, J. Jorgensen, N. 34° 46′, W. 75° 05′.....†	30.10	764.5	77	25.0	77	SW	10	4.5			2ks		SW	0.36	9.7	Short	SW	Clear	J. Jorgensen
Schr. Annie R. Lewis, L. L. Lewis Monabo, Porto Rico ....†	30.01	762.2	83	28.3		SE			3		10		SE	Heavy	Heavy	Mod'ate	SSE	Cloudy	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 21° 33′, E. 2° 15′.....*†	30.20	767.1	67	19.4		SW			6		2		SW	0	0	Mod'at	SW	Fair	B. F. Woodbury.
Schr. Della Hodgkins, Port Hastings, Nova Scotia†	30.30	769.6				SE			3		8		S					Cloudy	S. S. Miner.
Brigantine George, W. H Champlin, N. 31° 22′ W. 70° 43′.....†	30.34	770.6	79	26.1		SSE			3		0			0	0	Smooth		Fair	
Hippolyta																			W. Randall.
Iron Cross, W. Randall																			E. Lewis.
Barque Syringa, E. Lewis																			

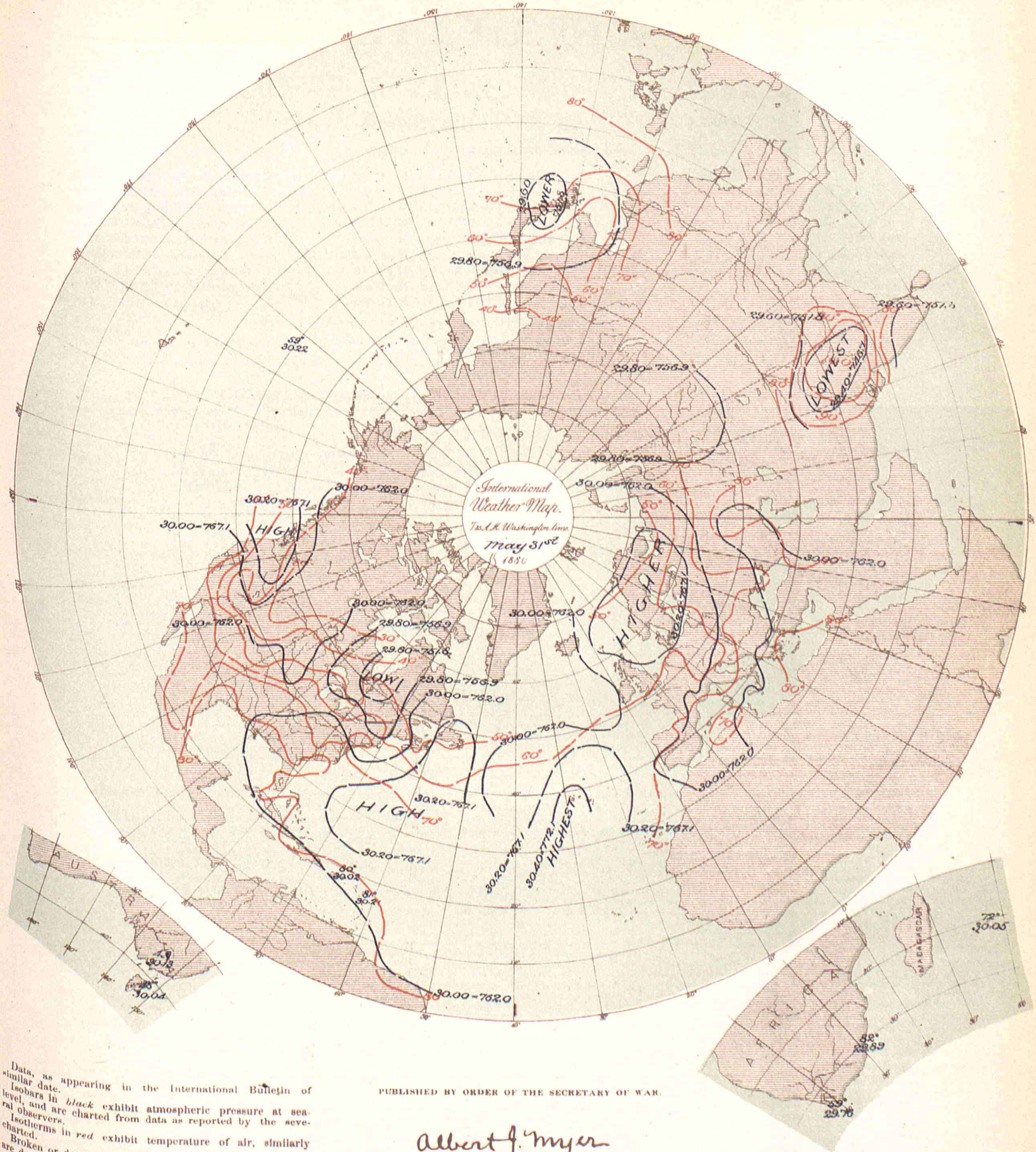
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 1, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			29.94	760.5	72.3	22.4	81	WNW			1		4			0	0	Cloudy	Metge.
Algiers			29.93	760.2	82.4	28.0	36	W			4		1			0	0	Very fair	Nicolas.
La Calle			30.00	761.9	70.3	21.3	75	NW			2		3			0	0	Pretty fair	Fonfrède.
Tunis			29.98	761.6															Jacques.
Sfax			30.02	762.5															Gau.
Saida			29.96	760.9															Charon.
Tebessa			30.02	762.5	77.2	25.1	38	E			1		9			0	0	Covered	Watrin.
Geriville			29.97	761.2	77.0	25.0	85	E			8		3			Inap.	Inap.	Pretty fair	Lonchamp.
Laghouat			29.95	760.8	73.4	23.0	41	ENE			4		5			0	0	Cloudy	Herlin.
Biskra			29.91	759.7	86.4	30.2	42	E			1		3			Inap.	Inap.	Pretty fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.50	749.2	30.04	762.9	64.8	18.2	66	SE			3		4			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.20	741.7	29.95	760.6	68.4	20.2	61	NE	2.5	1.1			8			0.547	13.9		Dr. Wierzbicki.
Eperies	29.07	738.3	29.93	760.3	60.3	15.7	84	Calm			0		10ks			0.689	17.50		Julius Mikolik.
Gratz	28.81	731.7	30.04	763.0	61.5	16.4	76	S			2		8			0	0		Andreas Rospini.
Hermannstadt	28.55	725.1	29.93	760.1	72.3	22.4	50	NW			2		5			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.63	727.2	29.94	760.5	63.7	17.6	71	NE			1		2			0.051	1.3		The Staff.
Lemberg	28.91	734.4	29.86	758.5	72.0	22.2	58	NW			2		7			0	0		Dr. T. Stanecki.
Pola	29.95	760.6	30.06	763.4	68.4	20.2	66	SSW			1		3			0	0		I.R. Hydrographic Office.
Szathmar	29.54	750.4	29.99	761.8	70.2	21.2	65	SW			5		8			0	0		Pet. Pancsics, S. J.
Szegedin	29.74	755.5	30.02	762.4	68.0	20.0	60	S			1		7			0	0		Karl Stancel.
Trieste	29.91	759.7	30.01	762.3	66.6	19.2	59	E			1		0			0	0		P. Busin.
Vienna	29.31	744.4	30.05	763.2	60.4	15.8	64	ENE			1		10			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.81	757.2	30.01	762.2	61.9	16.6	47	NE			2	5	5	E	E	0	0		Royal Observatory.
Furnes	30.09	764.2	30.11	764.8	62.4	16.9	64	E			5		5			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 1, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.40	772.1	30.50	774.7	52.4	11.3		ENE	15	6.7			1			0	0	Blue sky	W. Boswell.
Ardrossan	30.39	771.9	30.40	772.1	59	15.0		ENE			3		3					Misty	G. Carrick.
Armagh, (Observatory)	30.18	766.6	30.41	772.4	56.9	13.8		NE	11	4.9			2					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.27	768.8	60.2	15.7		NE	23	10.3			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.75	755.6	30.26	768.6	58.4	14.7		ENE	33	14.8			10					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.89	759.2	30.29	769.4	57.1	13.9	61	E			5		8			0.05	1.3	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.97	761.2	30.00	762.0	83	28.3		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.07	763.8	30.17	766.3	53.6	11.7		NNE			2		10					Raining	H. Todd.
Cardington			30.14	765.5	53.6	11.7		NE			2		10					Overcast	John McLaren.
Chatham (School M. E.)	30.01	762.2	30.14	765.5	51.1	10.6		NE			3		9k					Gloomy	Lance Cor. Hocker, R.E.
Donaghadee	30.37	771.4	30.41	772.4	56	13.3		ENE			2		5					D. clouds	J. Mac Gowan.
Dover	30.06	763.5	30.09	764.3	57	13.9		NE			6		5					¾ clouded	J. Costello.
Falmouth (Observatory)	29.96	759.4	30.13	765.3	60.7	15.9		ESE			2		3					D. clouds	The Staff.
Fort Napier, Natal	27.49	698.2	29.69	754.1	76.4	24.7		SW			4		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.94	760.5	86	30.0		Calm			0		8					D. clouds	
Galway (Queen's College)			30.28	769.1	52.5	15.3		NE			2		6					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.91	759.7	29.97	761.2	67.2	19.6		E			1		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.21	767.3	30.42	772.7	57.6	14.4		E			2	5c						D. clouds	D. G. Maclean.
Great Yarmouth	30.15	765.8	30.16	766.1	52	11.1		NNE			4		8					Drizzling	G. T. Watson.
Greenwich (Royal Obs'y)	29.96	761.0	30.14	765.5	55.6	12.8		NE			3		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.80	756.9	30.02	762.5	57	13.9		ENE			3		4					D. clouds	Dr. S. E Hoskins, F.R.S.
Helston	30.31	769.9	30.43	772.9	63	17.2		E			6	3ck				0 20	5.1	Showery	M. P. Moyle.
Holyhead	30.27	768.8	30.31	769.9	55	12.8		NE			4		6					D. clouds	John Tilston.
Jersey	29.75	755.6	30.01	763.0	61.6	16.4		NE			4		6					Gloomy	J. Fisher.
Kew (Observatory)	30.10	764.5	30.14	765.5	57.6	13.9		NE	23	10.3			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.96	761.0	30.22	767.6	53.2	11.8		NE			2		10					Raining	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.89	759.2	29.97	761.2	70.6	21.4		NE			2		4					D. clouds	A. King.
Nairn	30.36	771.1	30.45	773.4	58	14.4		SE			3		0					Clear	W. D. Penny.
Nassau, Bahamas			30.05	763.3	79.5	26.2		NE			3		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.08	764.0	30.27	768.8	53.1	11.7		NNE			6		10d		NE	0.025	0.64	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.70	754.4	30.22	767.6	56.9	13.8		NE			5-6		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.94	760.5	30.19	766.8	57.9	14.4		N			4		10					Overcast	The Staff, for E. J. Stone, M.A.
Plymouth	30.03	762.7	30.10	764.5	62.3	16.8		ENE			4		8					D. clouds	John Merrifield.
*Roche's Point	30.18	766.6	30.30	769.6	61	16.1		ESE			4		5					½ clouded	Wm. Kennedy.
St. Ann's Head	30.02	762.5	30.19	766.8	59	15.0		NNE			4		7					D. clouds	John D. Walker.
Sandwick Manse, Orkneys			30.52	775.2	57	13.9		SSE	14	6.3			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.90	759.4	29.96	761.0	77.8	25.4		SW			1		6					D clouds	Serg't W. H. Lyne.
Sheffield	30.01	762.2	30.29	769.4	57.1	13.9		NNE			2		10			0.21	5.3	Overcast	W. F. Cooper.
Silloth Rectory	30.32	770.1	30.35	770.9	59.8	15.4	59	E			6		2			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.32	770.1	59.2	15.1		NE	15	6.7			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.94	760.5	30.16	766.1	53.5	11.9		NE			3-4		10					Showery	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.11	764.8	30.13	765.3	66	18.9		E			4		8					Gloomy	W. Newcombe.
Valencia (Observatory)	30.26	768.6	30.28	769.1	58.6	14.8		ENE	5	2.2			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.15	765.8	30.19	766.8	56.5	13.6	70	NNW	6.5	2.9		8	10			0.200	5.08	Vapory	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																			
Hobart Town, Tasmania			29.94	760.5	50.0	10.0	81	NW			2		4k			0	0	Star light	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.48	774.2	55.0	12.8		E			3		2k			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.88	758.9	30.07	763.8	72.9	22.7	75	SSE	19.5	8.7		6	4	W	ESE	0.47	11.9	Squally	C. Meldrum.
Melbourne (Observatory)	30.06	763.5	30.15	765.8	51.3	10.7	98	SW	3	1.3			7			0.02	0.5	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.49	774.4	57 *	13.9		S			3	3	0	NE		0	0		J. Younglause.
North Unst, Shetland I's			30.51	774.9				S			2	1	0	Calm		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
H. M. S. Alert																			Capt. J. P Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 40° 30′, W. 39° 20′			29.68	753.9	61	16.1		N			8		10			8	NNW	Raining	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, S. 5° 14′, W. 4° 16′			30.02	762.5	80	26.7		SE			6		9					Overcast	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	69.8	21.0	86	SE			2	8cs				0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.22	767.6	30.27	768.8	62.2	16.8	44	ESE			4		1						
Fanöe	30.24	768.0	30.26	768.5	64.2	17.9	48	ENE			6		8						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.18	765.4	30.18	766.5	47.3	8.5	71	W			2		8						
Thorshavn (Faröe)	30.37	771.5	30.41	772.4	58 6	12.0	90	WSW			2		10						
Vestervig	30.25	768.3	30.34	770.7	65.5	18.6	34	NE			6		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.41	747.0	29.96	761.0	62.6	17	39	N			1		8kn		NE	0.016	0.4	Very cloudy	Collignon, Director.
Amiens, Normal School	29.95	760.6	30.05	763.3	67.6	19.8	62	E			2		5		SW	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.76	755.8	30.01	762.3	54.5	12.5	83	NE			2		10	E		0	0	Covered	Klein, Commandant.
Avignon, Normal School	29.82	757.4	29.90	759.4	58.6	14.8	89	SE			1		10		SSE			Very heavy rain	Giraud, Director.
Bar-sur-Seine	29.36	745.7	29.90	759.5	64.9	18.3	34	SE			1		8kn		SE	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.72	754.8	29.98	761.4	63.5	17.5	42	E			3		8			0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.66	738.2	29.94	760.5	62.2	16.8	59	NE			1		10		SE	0	0	Covered	A. Carré, Director.
Bordeaux	29.59	751.6	29.79	756.6	64.1	12.3	100	WSW			1		10		SSE	0.004	0.1	Raining	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.66	738.2	29.98	761.5	60.8	16	75	W			1		10n	S	S	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.35	745.6	29.90	759.5	57.6	14.2	74	ENE			3		sn		ENE	0	0		M. Gence, Director.
Brest, Naval Observatory	29.78	756.4	30.02	762.6	57.9	14.4	67	NE			3		4		NE	0.049	1.25		Ch. de Rermaree, Dir
Caen, Normal School	29.91	759.7	29.98	761.5	57.4	14.1	82	NE			1		5		E	0.068	1.6	Cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.35	745.5	29.76	755.8	65.8	18.8	68	NE			1		5		NE	0 059	1.5	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.64	752.8	29.95	760.8	65.8	18.8	43	E			2		5		N	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.33	745.0	29.84	758.0	63.1	17.3	96	E			3		6		S	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.54	724.9	29.89	759.3	54.0	12.2	74	E			1		10			0.035	0.9	Raining	Alluard, Director.
Commercy, Normal School	29.09	738.8	29.93	760.2	62.6	17	43	E			6		ck	E	E	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.83	732.3	29.97	761.3	59.9	15.5	76	SE			3		10		SE	0.024	0.6		L. Kina, Director.
Grenoble, Normal School	29.21	741.8	29.96	761.0	61.2	16.2	85	ENE			1		10n					Raining	Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.72	754.9	29.93	760.2	66.6	19.2	56	NE			1		5		W	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.62	752.4	29.93	760.1	60.8	16	69	E			2		8		E	0.016	0.4	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.07	738.3	29.97	761.2	58.5	14.7	72	NE			1		10n		E			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.88	759.0	29.98	761.5	61.5	16.4	59	NNE			6		10		NE	0.236	6.00	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.31	744.4	29.93	760.1	55.9	13.3	82	SW			1		10			0.024	0.6	Rainy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.65	753.0	29.91	759.8	63.3	17.4	78	SSE			2		10		S	0.122	3.10	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.89	733.8	29.93	760.1	55.8	13.2	86	SE			1		n		SE	0	0		Barbier, Director.
Mont-Louis	24.66	626.4	29.90	759.4	51.4	10.8	68	SW	18.6	8.3			9		W	0.291	7.4		M. Cave, for Dr. Fines.
Nice	29.93	760.3	29.97	761.2	65.8	18.8	75	E			3		10	E	E	0.024	0.6	Light rain	Capt. Boissière, Director.
Nismes, Normal School	29.68	753.9	29.88	759.0	58.3	14.6	82	S			3		10		S	0	0	Covered	M. Boyer, Director.
Perpignan	29.67	753.5	29.77	756.1	69.3	20.7	63	SW	18.6	8.3			9		S	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.31	566.7			32.4	0.2							10		SW	0.346	8.8	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.87	733.2	29.93	760.1	57.2	14	76	S			3		10	S	S			Raining	M. Tallieu
Puy de Dome (Summit) Obs	25.01	635.2			37.4	3.0	100	E			3		10			0.008	0.2	Rain & fog	Alluard, Director.
Rochefort, Naval Obs'y	29.84	758.0	29.85	758.3	54.5	12.5	85	E			2		10	E	E	1.22	31.	Raining	Lt. E. Devante, Director
Rouen, Normal School	29.89	759.1	29.97	761.3	63.7	17.6	45	NE			1		8	E	NE	0.035	0.9	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.94	760.5	29.97	761.3	55.4	13.0	68	SE			2		10	NE	NE	0.496	12.60	Raining	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.78	756.5	29.95	760.7	64.4	18.0	88	ENE			3		10		E	0	0		E. Renou, Director.
Tarbes, Normal School	28.83	732.3	29.91	759.6	55.4	13	77	W			1					0	0		T. Huguet, Director
Toulouse, Observatory	29.17	740.8	29.88	759.0	55.8	13.2	81	SW			1		10			0.067	1.7	Covered	B. Baillaud, Dir.
Tours	29.70	754.3	29.89	759.3	59.0	15.0	61	SE			1		10	Calm	E	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.46	748.2	29.95	760.7	61.2	16.2	38	E			4					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.14	740.1	29.84	758.0	59.9	15.5	78	ESE			1					0	0	Misty	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.20	767.0	30.23	767.7	81.0	27.2										0.08	2.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.66	753.4			63.3	17.4	86	ENE			2		9		E	Inap.	Inap.	Sprinkling	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.97	761.1	29.99	761.7	61.9	16.6	80	NE	5.6	2.5			5			0	0	Cloudy	Marc Dechevreus, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,206.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.18	741.1	30.04	763.0	62.2	16.8	55	NE			2		7k	NE		0	0		Prof. Dr. Hoh.
Berlin	29.92	759.9	30.09	764.2	59.2	15.1	82	NE			1		10			0.102	2.6	Rainy	Prof. Dr. Arndt.
Breslau	29.54	750.3	30.07	763.8	62.2	16.8	72	NNW			1		10			0.097	2.46		Royal University Obs'y
Carlsruhe	29.55	750.5	29.97	761.2	61.9	16.6	63	SE			2		10	SE		0	0		Albert Senz.
Cassel	29.45	748.1	30.07	763.6	57.9	14.4	65	E			2		8	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.72	754.8	30.08	764.0	59.0	15.0	54	NE			2		10			Inap.	Inap.		Physical Society.
Friedrichshafen	28.55	725.1	29.97	761.2	58.5	14.7	67	SW			2		10	SSW		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.09	764.3	30.16	766.1	55.4	13.0	91	NE			4		10			0.177	4.5		Dr. Reinhold Kleeman.
Kiel	30.19	766.9	30.21	767.3	55.4	13.0	78	NE			4		10			0.008	0.19		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.02	762.6	30.10	764.6	70.3	21.3	50	NE			5		1	E		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.67	753.7	30.10	764.4	56.1	13.4	82	NE			1		9	ENE		0.079	2.0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.89	759.2	30.12	765.0	58.5	14.7	77	NE			2		10ks	ENE		0.020	0.5	Raining	Dr. Assmann.
Memel	30.12	765.0	30.17	766.2	68.7	20.4	42	NE			3–4		0						Reimbrecht & Issermann.
Munich	28.18	715.7	30.04	763.0	57.4	14.1	63	NE			2		7	E		0.429	10.9		Dr. C. Lang.
Neufahrwasser	30.15	765.8	30.17	766.2	55.4	13.0	70	NNE			2		10			0	0		A. Lothes.
Neustadt (Palatinate)	29.47	748.4	29.99	761.8	58.8	14.9	50	NE			2		10			0	0		Reallehrer Dicknether.
Posen	29.78	756.4	30.07	763.7	58.1	14.5	99	W			2		10			0.303	7.7		Prof. Dr. Magener.
Strassburg (in Alsace)	29.44	747.8	29.98	761.5	63.9	17.7	49	ENE			4		7	SSE		0	0		Imp. University Observatory.
Stuttgart	29.03	737.4	29.91	759.7	61.2	16.2	51	E					8	E		0	0		Prof. Dr. Schoder.
Thorn	29.86	758.4	30.05	763.2	63.7	17.6	74	NE			4		10			0.071	1.8		Dr. Cunerth.
Weissenburg (Bavaria)	28.53	724.7	30.11	764.8	59.5	15.3	70	E	2.5	1.1			9k		E	0.028	0.7		Reallehrer J. Hopfner.
Wustrow	30.19	766.8	30.22	767.5	55.6	13.1	75	NE			3		10s			0.004	0.1		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.64	752.9	30.02	762.6	77.2	25.1		SW			2.0		0					Hazy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.50	749.4	29.55	750.6	86.7	30.4	78	SSW	33.4	14.9			6		SSW	0	0	Misty	
Deesa	29.02	737.0	29.46	748.3	104.8	40.4	15	W	10.7	4.8			0			0	0	Misty	
Bombay	29.60	751.8	29.64	752.8	87.0	30.6	69	W	10.0	4.5			10	W	WNW	0	0	Overcast	
Poona (Yarrowda)	27.77	705.2	29.59	751.5	84.2	29.0	61	NW	26.0	11.6			10	Calm	W	0.32	8.1	Overcast	
Belgaum	27.10	688.5	29.63	752.5	75.2	24.0	86	WSW	8.0	3.6			8	NE	SW	0.03	0.8	D. clouds	
Lahore	28.70	728.8	29.39	746.6	104.3	40.2	21	E	1.9	0.8			0			0	0	Misty	
Roorkee	28.65	727.7	29.54	750.4	78.8	26.0	58	SE	7.0	3.1			4			0.06	1.5		
Agra	28.89	733.8	29.42	747.3	103.1	39.5	31	N	5.1	2.3						0	0		
Nagpur	28.40	721.3	29.38	746.4	102.2	39.0	25	Calm	2.1	0.9			10		W	0	0	Overcast	
Jubbulpore	28.14	714.6	29.43	747.5	102.7	39.3	21	N	4.1	1.8			8			0	0	Overcast	
Lucknow	29.14	740.1	29.50	749.3	99.4	37.4	35	NNE	3.4	1.5						0	0	Blue sky	
Allahabad	29.15	740.3	29.45	747.9	96.5	35.8	44	Calm	3.7	1.6			6	SW		0	0	D. clouds	
Patna	29.31	744.4	29.48	748.8	96.8	36.0	45	E	2.2	1.0			4	E	E	0	0	D. clouds	
Hazaribagh	27.53	699.3	29.49	749.1	86.3	30.2	61	E	7.8	3.5			4			0	0		
Cuttack	29.46	748.3	29.54	750.4	81.8	27.7	83	Calm	1.6	0.7			9			0.05	1.3	Drizzling	
Calcutta (Alipore)	29.52	749.8	29.54	750.3	80.4	26.9	89	ESE	9.0	4.0			10		E	0.07	1.8	Drizzling	
Goalpara	29.11	739.5	29.51	749.5	90.3	32.4	66	SE	2.7	1.2			1	Calm		0	0	D. clouds	
Chittagong	29.48	748.7	29.57	751.0	81.9	27.7	91	ENE	2.5	1.1			8			0	0	D. clouds	
Sibsagar	29.22	742.2	29.55	750.5	89.0	31.7	69	SE	1.8	0.8			4			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,361 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.65	753.1	30.05	763.3	67.3	19.6	64	SW	1.3	0.6			9			0.201	5.1		Prof. Giovanni Clodig.
Milan	29.50	749.4	30.02	762.6	57.0	13.6	85	NE	7.4	3.1			10			0.614	15.6		Prof. Schiaparelli.
Padua	29.94	760.4	30.05	763.2	67.3	19.6	53	SE	3.6	1.7			9	SW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.07	738.4	29.97	761.1	57.6	14.2	84	NNE	1.8	0.8			10			2.204	56.0		Prof. P. F. Denza.
Genoa	29.82	757.4	30.01	762.3	63.0	17.2	72	SE	7.4	3.3			10	S		1.071	27.2		Prof. G. M. Garibaldi.
Mondovi	28.05	712.4	29.82	760.0	59.9	15.5	74	NW			2		9			0	0		Prof. D. C. Bruno.
Pesaro	29.98	761.5	30.03	762.7	64.4	18.0	75	E	11.9	5.3			9	SW		0.035	0.9		Prof. Luigi Guidi.
Florence	29.78	756.3	30.03	762.8	66.2	19.0	86	NW			2		10			0.028	0.7		Cav. F. Meucci.
Leghorn	29.95	760.7	30.03	762.8	70.0	21.1	63	S	11.9	5.3			10	W		0	0		Prof. P. Monte.
Rome	29.87	758.7	30.04	763 1	73.6	23.1	52	SW	8.7	3.9			8			0	0		Prof. P. S. Ferrari.
Lecce	29.81	757.1	30.06	763.4	75.6	24.2	27	SW	4.9	2.2			6			0	0		Prof. C. De Giorgi.
Cosenza	29.15	740.4	30.00	762.1	79.5	26.4	68	SSW	0.7	0.3			3			0	0		Prof. D. Conti.
Cagliari	29.76	755.8	29.95	760.7	72.0	22.2	44	SE			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.80	757.0	30.05	763.3	68.9	20.5	64	NE	6.3	2.8			2			0	0		Prof. G. Ciacciatore.
Syracuse	29.98	761.5	30.02	762.6	72.0	22.2	64	E	6.3	2.8			8	WSW		0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.53	750.0	30.04	763.0	70.9	21.6	62	SW	3.1	1.4			5			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					63.7	17.6	78	W	2.7	1.2		ck	9ks			0.042	1.07	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.61	752.1	29.81	757.2	61.1	16.2	77	N	10.1	4.5			10s			0.050	1.27	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.60	751.8	29.67	753.6	60.1	15.6	96	ENE	5.8	2.6			10n			0.140	3.56	Raining	The Staff.
Wakayama	29.61	752.1	29.66	753.3	66.1	18.9	81	SE	1.5	0.7		10ck				0.002	0.05	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.09	637.3	30.10	764.4	59.0	15.0	59	E			1	7cs	0			0	0	Cloudy	Prof. L. Perez.
Guanaxuato	23.53	600.3			61.3	16.3	71	ENE	13.4	6.0		9ck	k	Calm	E	0	0	Covered.	Vicente Fernandez.
Leon	24.38	619.2	29.92	759.9	69.4	20.8	68	SE			2	4c	1k			0	0	Fair	Prof. M. Leal.
Mazatlan	29.62	752.3	29.88	758.9	72.8	22.7	90	E			2	1ck	0			0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.07	586.0	30.04	762.9	55.9	13.3	77	N	2.9	1.3		9k	0	E		0.21	5.3		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.95	608.3	29.86	758.4	66.7	19.3	67	NW			1	4c	0			0	0	Light haze.	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.38	593.8	30.06	763.6	58.1	14.5	52	Calm	0	0		4ck	0	E		0.12	3.0	Fair	Prof. P. Spina.
San Luis Potosi	24.22	615.2	30.08	763.9	66.2	19.2	73	E			1	6	0	E		0	0	Fair	G. Barroeta, M. D.
Tlacotalpam	29.84	757.8	29.85	758.1	80.6	27.0	93	W			1	6	3	E	NE	1.15	29.1	Raining	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.59	573.7	30.14	765.5	59.2	15.1	79	SE			4	5c	2ks	SE	SE	0	0	Cloudy	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.07	763.8	30.07	763.8	60.8	16.0		NNE			4					0	0		
Groningen	30.08	764.1	30.14	765.5	57.4	14.1		E								0.039	1.0		
Helder	30.11	764.7	30.11	764.7	58.8	12.1		ENE			4					0.236	6.0		
Hellevoetsluis	30.07	763.8	30.07	763.8	60.3	15.7	64	NE			1					0	0		
Utrecht	30.03	762 8	30.08	764.0	63.9	17.7	50	E			2		5			0.004	0.1	Cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.39	770.9	30.41	772.3	64.8	18.2	40	W	11.6	5.2			0			0	0		
Brönö	30.34	770.6	30.38	771.6	49.6	9.8	76	SSW	18	8			10			0	0		
Christiania	30.22	767.5	30.36	771.1	73.2	22.9	26	SW	7	3			1			0	0		
Tromsö	29.99	761.7	30.04	763.1	45.0	7.2	89	SSW	13	6			10			0.520	13.2	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	29.97	761.3	30.18	766.6	65.1	18.4	88	ESE			4		6			0	0		Dr. J. A. Sampaio.
Campo Major	28.89	733.9	29.85	758.3	76.3	24.6	40	W	6.9	3.1			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.07	763.7	30.15	765.9	66.9	19.4	72	SW	8.7	3.9			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.65	753.0	30.00	762.0	68.2	20.1	64	NNW	23.7	10.6			1			0	0		The Staff.
Ponta Delgada (Azores)	30.11	764.8	30.18	766.6	66.2	19.0	69	SE	17.4	7.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva.																				C. J. de Sonna Barcellos, Q. M.
St. Paul de Loando			29.94	760.4	74.8	23.8		WNW			1		2		WSW	1	WNW		D. clouds	J. T. d'Oliveria, Com'd't.
Rio Duro																				Antonio Sarmento, Q. M.
Rio Lima, S. C. da Silva Costa																				F. Teixeira da Silva, Com'd't.
Sá da Bandeira																				
Sado, J. A. de Brito Capello,																				
Mossamedes, Benguela			30.00	762.1	71.1	21.7		WNW			3		0			2	W		Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães,																				
Macao, China			29.90	759.5	82.4	28.0		SW			3		10		SW	2	SW	14	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	30.12	765.1	30.14	765.6	56.3	13.5	43	WNW	2	1			9ks						Capt. Sselivverstow.
Astrakhan	30.09	764.3	30.01	762.2	77.0	25.0	57	S	7	3			10s					Light clouds	Capt. Wisganow.
Barnaul	29.46	748.2	29.94	760.4	65.3	18.5	34	NW	4	2			4					Light clouds	Meteorological Obs.
Dorpat	30.07	763.8	30.31	769.8	63.5	17.5	40	NNE	9	4			0						Prof. Dr. Wellbrauch.
Ekaterinburg	29.01	736.8	29.97	761.2	50.0	10.0	84	ENE	9	4			10						Meteorological Obs.
Irkutsk																			Physical Cabinet.
Kasan	29.70	754.4	29.96	761.0	67.3	19.6	71	N	9	4			10sn						Lagorio.
Kertch	30.00	761.9	30.02	762.4	64.8	18.2	82	S	4	2			6					Raining	Physical Cabinet.
Kieff	29.21	741.8	29.83	757.7	60.8	16.0	96	NE	4	2			6ks,a					Light rain	Cand. Fatjanow.
Krotkowo*	29.58	751.2	30.02	762.6	76.3	24.6	47	SW	4	2			10						Meteorological Obs.
Lugan	29.64	752.9	29.84	758.0	72.1	22.3	65	NNE	9	4			7			Blank	Blank		Meteorological Obs.
Moscow	29.56	750.9	30.11	764.7	58.1	14.5	83	E	10.1	4.5			10s						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.82	757.5	29.89	759.3	66.0	19.2	84	SSW	13	6			9n						Kurdakof.
Nikolaievsk, on the Amoor	29.83	757.6	29.91	759.8	45.9	7.7	69	Calm	0	0			0						
Nukuss																			
Orenburg																			Physical Observatory.
Pekin (China)	29.62	752.3	29.76	755.9	78.6	25.9	38	SW	7	3			0						Central Physical Obs.
St. Petersburg	30.26	768.5	30.27	768.9	62.6	17.0	44	WNW	11	5		ck	1s						Teich, A. M.
Tashkend	28.37	720.5	29.85	758.3	81.0	27.2	34	Calm	0	0			0						Physical Observatory.
Tiflis	28.59	726.2	29.97	761.3	69.4	20.8	54	NW	11	5			9n						
Vladivostock																			Astronomical Obs.
Warsaw	29.57	751.1	29.99	761.7	61.2	16.2	89	NE	9	4			10ks						Astronomical Obs.
Wilna	29.66	753.3	30.07	763.6	68.4	20.2	74	NNE	11	5			6						Marks.
Yeniseisk	29.50	749.2	29.78	756.4	48.2	9.0	83	SW	16	7			4					Rain & hail-storm	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.78	756.4	29.88	759.0	69.8	21	63	S	5.4	2.42			9					Raining	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.80	757.2	29.95	760.6	64.2	17.9	71	NW	2.3	1.05		2	6	NW		0.091	2.3	Almost cov'd	Prof. Manuel de Navarro.
Burgos, Met. Obs'y	26.97	685.0			50.0	10.0	86	E	6.1	2.74			8			0	0	Misty	Domingo Martin y Perez.
Madrid, Royal Observatory	27.63	701.7	29.74	755.3	79.0	26.1	37	SW	16.4	7.33		0	2			0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.71	754.5	29.85	758.2	84.0	28.9	47	SSE	4.7	2.08		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.10	739.1	29.98	761.6	61.7	16.5	57	N	9.4	4.2			6			0.020	0.5	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.5	30.05	763.2	79.7	26.5	77	ENE	5.6	2.6		0	0			0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands.	29.82	757.4	29.87	758.7	87.7	30.9	71	SE	7.0	3.2			1s			0	0	Clear.	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.88	758.9	29.97	761.3	70.2	21.2	77	SW	4.2	1.9		0	7		SW	0	0		Capt. C. Pulazou, R. N., Dir.
San Juan de Porto Rico, W. I.	29.95	760.7	30.04	763.0	81.3	27.4	85	SE	0	0		8k	8k			0.217	5.50	Cloudy.	Enriquetadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2, 822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.37	771.4	30.41	772.4	66.2	19.0	.....	W	.....	.....	2	.....	4	.....	.....	0	0	.....	
Umea	30.27	768.9	30.32	770.2	65.1	18.4	85	NW	.....	.....	7	.....	10	.....	.....	0	0	.....	
Hernosand	30.33	770.4	30.38	771.7	75.6	24.2	72	W	.....	.....	4	.....	5	.....	.....	0	0	.....	
Stockholm	30.22	767.6	30.40	772.1	63.3	17.4	24	E	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	30.24	768.1	30.30	769.6	51.1	10.6	72	NE	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.26	769.1	30.37	771.3	70.0	21.1	29	ENE	7.8	3.5	.....	.....	1	E	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 51° 49′, E. 2° 19′	.....	.....	.....	Blue sky	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.65	725.1	29.98	761.6	51.1	10.6	80	NNW	.....	.....	2	.....	10	.....	.....	.....	.....	Raining	The Observatory.
Zurich	28.35	720.1	29.97	761.2	59.4	15.2	67	NE	.....	.....	2	.....	3	.....	.....	0	0	Lightly cld'y	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —0.7 mm.; Thermometer, —8.4 Cent. Relative Humidity, +24 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level, the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.01	762.2	83.7	28.7	36	WSW	9	4.0	.....	.....	3	.....	SW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.14	765.5	74.8	23.8	.....	S	.....	.....	2	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	30.02	762.6	73.9	23.3	62	N	.....	.....	2	4c	0	W	.....	0	0	.....	Prof. C. V. A. van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	58.0	14.4	.....	NW	1	0.4	.....	.....	10n	.....	.....	0.24	6.1	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.75	755.6	29.81	757.2	58.0	14.4	91	SW	3	1.3	.....	3k	7ks	W	.....	0.29	7.4	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.77	756.1	29.81	757.2	55.1	12.8	94	SW	7	3.1	.....	.....	10n	.....	.....	0.380	9.65	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.71	754.6	29.90	759.4	57.5	14.2	93	NW	.....	.....	4	0	1s	.....	.....	0.026	0.66	Clear	James Smith, M. A.
Dalhousie, N. B.	29.62	752.3	29.78	756.4	50.5	10.3	.....	W	.....	.....	1	.....	10s	.....	.....	0.30	7.6	Cloudy	H. A. Johnson.
Father Point, Quebec	29.71	754.6	29.73	755.1	44.5	6.9	92	E	2	0.9	.....	.....	Fog	.....	.....	0.16	4.1	Foggy	J. McWilliams.
Fredericton, N. B.	29.77	756.1	29.83	757.7	65.2	18.4	82	S	1	0.4	.....	5c	0	W	.....	0.290	7.37	Fair	Prof. Harrison.
Fort Garry, Manitoba	29.26	743.2	30.09	764.3	42.0	5.6	91	NE	3	1.3	.....	2k	2ks	N	.....	0	0	Fair	James Stewart.
Granton, Ontario	29.05	737.9	30.16	766.1	48.0	8.9	78	Calm	.....	.....	0	.....	10n	.....	.....	1.15	29.2	Cloudy	James Grant.
Halifax, N. S.	29.74	755.4	29.87	758.7	61.9	16.6	87	NW	4	1.8	.....	0	8ks	.....	.....	1.253	31.78	Cloudy	A. Allison.
Hamilton, Ontario	29.76	755.9	30.15	765.8	53.7	12.1	76	SW	.....	.....	1	8cs	0	SW	.....	0.32	8.1	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.70	754.4	30.02	762.5	58.5	14.7	85	W	7	3.1	.....	7cs	2s	SW	.....	Inap	Inap.	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.77	756.1	29.81	757.2	52.6	11.4	93	S	2	0.9	.....	.....	10n	.....	.....	0.37	9.4	Overcast	C. H. Rigby.
Montreal, Quebec	29.69	754.1	29.88	758.9	61.2	16.2	70	SW	16	7.2	.....	1c	2s	W	.....	0.05	1.3	Fair	C. H. McLeod, C. E.
Moose Factory, Ontario	29.84	757.9	29.87	758.7	37.5	3.1	93	NW	.....	.....	4	.....	8n	.....	.....	0.60	15.2	Raining	J. R. Nason.
Norwood, Ontario	29.37	746.0	30.06	763.5	53.0	11.7	55	NW	15	6.7	.....	0	0	.....	.....	0	0	Clear	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.42	747.3	30.12	765.0	49.0	9.4	64	W	14	6.3	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.43	747.5	30.18	766.6	53.7	12.1	64	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.46	748.3	30.16	766.1	51.1	10.6	100	Calm	0	0	.....	.....	10n	.....	.....	0.32	8.1	Cloudy	H. Morgan.
Port Stanley, Ontario	29.51	749.5	30.16	766.1	52.1	11.2	75	NW	1	0.4	.....	.....	10n	.....	.....	0.14	3.6	Cloudy	M. Payne.
Quebec, Quebec	29.46	748.3	29.78	756.4	59.0	15.0	100	NE	.....	.....	3	.....	10n	.....	.....	0.12	3.0	Light rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.55	750.6	30.01	762.2	49.0	9.4	60	NW	10	4.5	.....	0	0	.....	.....	0.01	0.3	Clear	W. H. McIntyre.
St. John, N. B.	29.71	754.6	29.87	758.7	53.0	11.7	100	S	6	2.7	.....	.....	Fog	.....	.....	1.270	32.26	Foggy	G. Murdock, C. E.
Sangeen, Ontario	29.45	748.0	30.18	766.6	48.1	8.9	62	W	3	1.3	.....	1cs	0	.....	.....	0.18	4.6	Clear	K. Stewart.
Stratford, Ontario	28.85	732.8	30.13	765.3	47.4	8.6	72	Calm	0	0	.....	.....	10s	.....	.....	0.649	16.49	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	29.79	756.7	29.83	757.7	51.5	10.8	95	S	5	2.2	.....	.....	10n	.....	.....	0.28	7.1	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.78	756.4	30.16	766.1	52.4	11.3	54	W	5	2.2	.....	7cs	2s	W	.....	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.09	738.9	30.16	766.1	51.1	10.6	64	N	4	1.8	.....	.....	8s	.....	.....	0.27	6.9	Clearing	Professor Wolverton.
Yarmouth, N. S.	29.83	757.7	29.89	759.2	53.4	11.9	95	SW	2	0.9	.....	.....	Fog	.....	.....	0.58	14.7	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.01	762.2	30.26	768.6	60	15.6	39	SE	2	0.9	.....	2k	5s	.....	.....	0	0	Fair	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	30.00	762.0	48.2	9.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0.16	4.1	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.91	759.7	29.99	761.7	66	18.9	69	W	8	3.6		2k	5ks	W	W	0	0	Fair	
Alpena, Michigan	29.49	749.0	30.14	765.5	48	8.9	56	NW	10	4.5		0	0			0.05	1.3	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.01	762.2	77	25.0	77	W	4	1.8		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.04	763.0	30.05	763.3	67	19.4	89	SW	6	2.7		5c	0	Calm		0	0	Fair	
Augusta, Georgia	29.91	759.7	30.11	764.8	77	25.0	73	Calm	0	0		Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	29.99	761.7	30.04	763.0	73	22.8	76	S	3	1.3		0	Haze		Calm	0	0	Clear	
Barnegat, New Jersey	30.00	762.0	30.02	762.5	72	22.2	67	S	6	2.7		2c	0	Calm		0	0	Clear	
Bismarck, Dakota	28.27	718.0	30.12	765.0	46	7.8	76	Calm	0	0			10s		SW	0	0	Cloudy	
Boerne, Texas	28.58	725.9	29.84	757.9	74	23.3	95	SW	4	1.8			10ks		SW	0	0	Cloudy	
Boise City, Idaho	27.30	693.4	30.26	768.6	48	8.9	56	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.79	756.7	29.93	760.2	74	23.3	68	W	7	3.1		Haze	0	Calm		0.09	2.3	Dense haze	
Brackettville, Texas	28.86	733.0	29.87	758.7	75	23.9	90	E	5	2.2			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	29.10	739.1	30.10	764.5	47	8.3	85	SW	8	3.6		5k	5s	SW	Calm	Inap.	Inap.	Cloudy	
Brownsville, Texas	29.89	759.2	29.93	760.2	80	26.7	87	E	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.44	747.8	30.14	765.5	50	10.0	79	E	4	1.8			10s		SW	0.40	10.2	Cloudy	
Burkes, Arizona					59	15.0	23	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.66	753.4	29.94	760.5	61	16.1	82	N	8	3.6			10n		NW	0.01	0.3	Light rain	
Cairo, Illinois	29.74	755.4	30.13	765.3	62	16.7	83	N	8	3.6			10n		NE	0.22	5.6	Light rain	
Campo, California	27.36	694.9	29.92	760.0	37	2.8	81	W	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.08	764.0	30.09	764.3	77	25.0	86	SW	17	7.6		2k	0	W		0	0	Clear	
Cape Henry, Virginia	30.03	762.7	30.05	763.3	73	22.8	90	S	7	3.1		Haze	Fog	Calm	SE	0	0	Dense fog	
Cape Lookout, N. Carolina	30.09	764.3	30.11	764.8	78	25.6	86	SW	13	5.8		5k	Haze	SW	Calm	0	0	Fair	
Cape May, New Jersey	30.01	762.2	30.04	763.0	69	20.6	79	S	7	3.1		1c	0	S		0	0	Clear	
Castroville, Texas	29.21	741.9	29.88	758.9	81	27.2	70	S	2	0.9			10s		S	Inap.	Inap.	Cloudy	
Cedar Keys, Florida	30.08	764.0	30.11	764.8	81	27.2	74	S	8	3.6		0	5ks		Calm	0	0	Fair	
Charleston, South Carolina	30.03	762.7	30.08	764.0	82	27.8	60	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.21	741.9	29.98	761.5	78	25.6	61	S	4	1.8		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.26	743.2	30.03	762.7	75	23.9	86	SE	1	0.4		3ck;cs	0	SE;Calm		0	0	Fair	
Cheyenne, Wyoming	24.22	615.2	30.16	766.1	38	3.3	81	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.47	748.5	30.16	766.1	57	13.9	63	N	6	2.7		0	0			0.04	1.0	Clear	
Chincoteague, Virginia	30.05	763.3	30.07	763.8	70	21.1	93	S	6	2.7		5k	0	N		0	0	Fair	
Cincinnati, Ohio	29.45	748.0	30.09	764.3	62	16.7	77	NE	8	3.6			10ks		Calm	0.05	1.3	Cloudy	
Cleveland, Ohio	29.42	747.3	30.15	765.8	53	11.7	86	E	6	2.7			10n		SW	0.32	8.1	Light rain	
Coleman City, Texas																			
Columbus, Ohio	29.24	742.7	30.06	763.5	61	16.1	82	N	7	3.1			10ks		W	Inap.	Inap.	Cloudy	
Concho, Texas	28.18	715.8	29.84	757.9	60	15.6	94	NE	6	2.7			10n		NE	0.06	1.5	Light rain	
Corsicana, Texas	29.58	751.3	30.03	762.7	78	25.6	82	S	4	1.8		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.56	750.8	30.20	767.1	55	12.8	74	N	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					51	10.6	86	Calm			0	8c	0	W		0	0	Fair	
Deadwood, Dakota	25.50	647.7			45	7.2	24	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.90	734.0	30.04	763.0	66	18.9	89	NE	10	4.5			10n		NE	0.10	2.5	Light rain	
Delaware Breakwater, Del.	30.03	762.7	30.05	763.3	70	21.1	60	SW	8	3.6		1c	0	SW		0	0	Clear	
Denison, Texas	29.28	743.7	30.06	763.5	65	18.3	94	N	3	1.3			10n		N	2.48	63.0	Light rain	
Denver, Colorado	24.97	634.2	30.19	766.8	42	5.6	87	W	3	1.3		2ck	8s	NW	NW	0.20	5.1	Cloudy	
Des Moines, Iowa	29.33	745.0	30.22	767.6	52	11.1	73	Calm	0	0		2ck	0	NW		0	0	Clear	
Detroit, Michigan	29.47	748.5	30.14	765.5	51	10.6	79	NE	4	1.8			10s		NE	0.63	16.0	Cloudy	
Dodge City, Kansas	27.62	701.5	29.94	760.5	50	10.0	58	NE	4	1.8		0	0			0	0	Clear	
Dubuque, Iowa	29.52	749.8	30.22	767.6	51	10.6	59	NE	2	0.9		0	Haze		Calm	0	0	Clear	
Duluth, Minnesota	29.42	747.3	30.10	764.5	48	8.9	78	W	6	2.7		0	0			0	0	Clear	
Eagle Pass, Texas	29.19	741.4	29.89	759.2	78	25.6	82	SE	6	2.7		0	5s		S	0	0	Fair	
Eastport, Maine	29.78	756.4	29.84	757.9	60	15.6	88	SW	4	1.8		5c	0	W		0.46	11.7	Fair	
Edinburg, Texas					85	29.4	96	SE			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.45	748.0	30.17	766.3	52	11.1	79	NE	6	2.7			10s		Calm	0.03	0.8	Cloudy	
Escanaba, Michigan	29.47	748.5	30.12	765.0	52	11.1	60	S	2	0.9		2cs	0	NW		0	0	Clear	
Florence, Arizona	28.38	720.8	29.98	761.5	66	18.9	50	N	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.49	774.4	38	3.3	45	SE	6	2.7		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.04	712.2	29.90	759.4	44	6.7	84	S	2	0.9		10cs	0	Calm		0	0	Cloudy	
Fort Custer, Montana	26.93	684.0			48	8.9	49	S	6	2.7			10s		W	0	0	Cloudy	
Fort Davis, Texas	25.30	642.6	30.27	768.8	52	11.1	79	NE	5	2.2			10s		Calm	0	0	Cloudy	
Fort Elliot, Texas	27.12	688.8	29.36	745.7	52	11.1	35	N	14	6.3			10s		N	0.69	17.5	Cloudy	
Fort Gibson, Indian Ter.	29.54	750.3	30.08	764.0	62	16.7	94	N	8	3.6			10s		N	0.30	7.6	Cloudy	
Fort Grant, Arizona	25.18	639.6	29.98	761.5	64	17.8	4	NE	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.84	732.5	30.11	764.8	60	15.6	84	NE	8	3.6			10s		Calm	0.15	3.8	Cloudy	
Fort Keogh, Montana	27.34	694.4			42	5.6	83	Calm	0	0		5k	0	Calm		0	0	Fair	
Fort McKavett, Texas	27.51	706.4	29.68	753.9	65	18.3	84	N	3	1.3			10s		N	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.90	734.0	30.00	762.0	57	13.9	94	N	15	6.7			10s		N	2.13	54.1	Cloudy	
Fort Stevenson, Dakota	28.24	717.3			43	6.1	75	N	2	0.9		2k	0	Calm		0	0	Fair	
Fort Verde, Arizona					53	11.7	31	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.96	761.0	30.00	762.0	82	27.8	79	SE	9	4.0		2k	0	S		0	0	Clear	
Grand Haven, Michigan	29.51	749.5	30.16	766.1	55	12.8	74	NE	2	0.9		5k	0	SW		0.21	5.3	Cloudy	
Helena, Montana					54	12.2	61	S	3	1.3		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.31	744.5	30.08	764.0	58	14.4	82	N	8	3.6			10n		Calm	0.79	20.1	Light rain	
Indianola, Texas	29.97	761.2	30.00	762.0	81	27.2	83	SE	8	3.6		0	0			Inap.	Inap.	Clear	
Jacksboro, Texas	28.95	735.3	30.06	763.5	63	17.2	94	N	4	1.8			10s		N	0	0	Cloudy	
Jacksonville, Florida	30.09	764.3	30.11	764.8	81	27.2	70	S	12	5.4		2k	0	Calm		0	0	Clear	
Keokuk, Iowa	29.54	750.3	30.15	765.8	60	15.6	71	N	5	2.2		2cs	2s	W	Calm	0	0	Fair	
Key West, Florida	30.04	763.0	30.07	763.8	80	26.7	74	E	10	4.5		0	0			0	0	Clear	
Kittyhawk, North Carolina	30.05	763.3	30.08	764.0	76	24.4	82	SW	13	5.8		0	0			0	0	Clear	
Knoxville, Tennessee	29.06	738.1	30.03	762.7	74	23.3	76	Calm	0	0		2cs	0	W		0	0	Fair	
La Crosse, Wisconsin	29.44	747.8	30.18	766.6	50	10.0	86	SW	4	1.8		0	Fog		Calm	0	0	Clear	
La Mesilla, New Mexico	26.14	663.9	30.20	769.4	58	14.4	53	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.52	749.8	29.84	757.9	81	27.2	78	SE	6	2.7		0	2s		SE	0	0	Fair	
Leavenworth, Kansas	29.36	745.7	30.21	767.3	55	12.8	81	N	3	1.3		2c	Sm'e	SW	Calm	0	0	Fair	
Lewiston, Idaho	29.25	742.9	29.90	759.4	49	9.4	77	Calm	0	0		0	5s		Calm	0	0	Fair	
Little Rock, Arkansas	29.73	755.1	30.04	763.0	69	20.6	95	NW	8	3.6			10n		Calm	0.32	8.1	Light rain	
Los Angeles, California	29.59	751.6	29.92	760.0	58	14.4	88	NW	3	1.3			10s;fg		Calm;NW	0	0	Cloudy	
Louisville, Kentucky	29.53	750.0	30.08	764.0	62	16.7	83	NW	10	4.5			10s		Calm	0.14	3.6	Cloudy	
Lynchburg, Virginia	29.37	746.0	30.02	762.5	73	22.8	72	SE	1	0.4		0	0			0	0	Clear	
Madison, Wisconsin	29.18	741.1	30.16	766.1	53	11.7	73	NW	1	0.4		0	0			0.08	2.0	Clear	
Marquette, Michigan	29.37	746.0	30.07	763.8	48	8.9	56	W	2	0.9		2k	0	W		0.01	0.3	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.39	721.1	30.06	763.5	77	25.0	82	S	2	0.9			10ks		S	0	0	Cloudy	
Memphis, Tennessee	29.68	753.9	30.01	762.2	66	18.9	100	NW	17	7.6			10n		Calm	0.68	17.3	Light rain	
Milwaukee, Wisconsin	29.44	747.8	30.16	766.1	54	12.2	61	NW	4	1.8		1ck	Haze	Calm		0.10	2.5	Clear	
Mobile, Alabama	30.04	763.0	30.08	764.0	78	25.6	91	Calm	0	0		2c	0	NW		0	0	Clear	
Montgomery, Alabama	29.86	758.4	30.09	764.3	78	25.6	90	S	5	2.2		5c	0	W		Inap.	Inap.	Fair	
Morgantown, West Virginia	29.05	737.9	30.00	762.0	69	20.6	80	SW	1	0.4		5c	5ks	W	W	0	0	Cloudy	
Mt Washington, N H	23.75	603.2	30.11	764.8	46	7.8	100	NW	52	23.2			Fog		NW	0.59	15.0	Dense fog	
Nashville, Tennessee	29.52	749.8	30.03	762.7	75	23.9	68	S	3	1.3		0	5ks		NW	0	0	Fair	
New Haven, Connecticut	29.88	758.9	29.99	761.7	82	27.8	56	SW	8	3.6		5cs	2s	SW	SW	0	0	Fair	
New London, Connecticut	29.93	760.2	29.98	761.5	73	22.8	67	WSW	11	4.9		0	0			0	0	Clear	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	79	26.1	82	S	1	0.4		Haze	Haze	Calm	Calm	0	0	Hazy	
Newport, Rhode Island	29.92	760.0	29.96	761.0	68	20.0	79	SW	8	3.6		2c	0	Calm		0.03	0.8	Clear	
New River, North Carolina					77	25.0	90	S			1	Haze	Haze	Calm	Calm			Light haze	
New York, New York	29.83	757.7	30.00	762.0	68	20.0	79	SW	5	2.2		Haze	0	Calm		0	0	Clear	
Norfolk, Virginia	29.99	761.7	30.05	763.3	76	24.4	82	S	5	2.2		2c	Sm'e	SE	SE	0	0	Fair	
North Platte, Nebraska	27.32	693.9	29.93	760.2	47	8.3	59	SE	2	0.9		5cs	5s	Calm	S	0	0	Cloudy	
Olympia, Washington Ter	30.02	762.5	30.06	763.5	52.0	11.1	64	S	5	2.2			10s		W	0	0	Cloudy	
Omaha, Nebraska	29.06	738.1	30.16	766.1	57	13.9	69	W	4	1.8		0	1s		Calm	0	0	Clear	
Oswego, New York	29.81	757.2	30.14	765.5	50	10.0	79	W	12	5.4			10n		W	0.34	8.6	Light rain	
Pembina, Dakota	29.20	741.7	30.04	763.0	42	5.6	91	N	5	2.2		0	0			0	0	Clear	
Pensacola, Florida	30.06	763.5	30.10	764.5	79	26.1	78	S	2	0.9		1cs	0	SW		0	0	Clear	
Philadelphia, Pennsylvania	29.97	761.2	30.02	762.5	72	22.2	76	W	7	3.1		5c	0	W		0	0	Fair	
Phœnix, Arizona	28.76	730.5	30.47	773.9	79	26.1	27	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	18	— 7.8	84	SE	12	5.4			Fog			0	0	Foggy	
Pilot Point, Texas	29.18	741.1	30.01	762.2	65	18.3	100	E	7	3.1			10n		SE	2.39	60.7	Light rain	
Pioche, Nevada	24.17	613.9	29.94	760.5	45	7.2	18	NW	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.02	762.5	67	19.4	84	N	4	1.8			10s		Calm	0	0	Cloudy	
Port Huron, Michigan	29.49	749.0	30.16	766.1	50	10.0	72	NE	3	1.3			10ks		NE	0.61	15.5	Cloudy	
Portland, Maine	29.83	757.7	29.88	758.9	69	20.6	70	W	6	2.7		0	0			0.04	1.0	Clear	
Portland, Oregon	30.06	763.5	30.13	765.3	52	11.1	79	NW	1	0.4		9cs	0	W		0	0	Cloudy	
Portsmouth, North Carolina					76	24.4	91	S	15	6.7		5k	0	Calm		0	0	Fair	
Prescott, Arizona	24.79	629.6	30.15	765.8	45	7.2	39	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.07	763.8	30.09	764.3	79	26.1	78	E	8	3.6		0	1ks		E	0.54	13.7	Clear	
Red Bluff, California	29.61	752.1	29.96	761.0	62.0	16.7	49	NW	8	3.6		0	0			0	0	Clear	
Rio Grande City, Texas	29.78	756.4	29.99	761.7	81	27.2	83	SE	9	4.0		0	5ks		SE	0	0	Fair	
Rochester, New York	29.51	749.5	30.12	765.0	52	11.1	86	W	6	2.7			10n		W	0.26	6.6	Light rain	
Roseburg, Oregon	29.58	751.3	30.16	766.1	44	6.7	88	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.84	757.9	29.91	759.7	62	16.7	72	NW	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.59	751.6	30.17	766.3	57	13.9	81	N	10	4.5			10ks		W	0.05	1.3	Cloudy	
St. Paul, Minnesota	29.29	744.0	30.12	765.0	51	10.6	79	SW	2	0.9		0	0			0	0	Clear	
Salt Lake City, Utah	25.81	655.6	30.14	765.5	48	8.9	43	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.31	744.5	29.98	761.5	83	28.3	83	SE	5	2.2		5k	0	SE		0.01	0.3	Threatening	
San Diego, California	29.87	758.7	29.94	760.5	55	12.8	87	N	5	2.2		0	0			0	0	Clear	
Sandusky, Ohio	29.47	748.5	30.14	765.5	56	13.3	87	NE	15	6.7			10n		NE	0.34	8.6	Light rain	
Sandy Hook, New Jersey	29.97	761.2	30.00	762.0	76	24.4	73	SW	6	2.7		1c	0	Calm		0	0	Clear	
San Francisco, California	29.88	758.9	29.95	760.7	62	16.7	72	Calm	0	0		0	0			0	0	Clear	
Santa Fé, New Mexico	23.39	594.1	29.93	760.2	38	3.3	63	NE	5	2.2		1k	0	N		0	0	Clear	
Savannah, Georgia	30.01	762.2	30.10	764.5	85	29.4	68	S	4	1.8		1k	Haze	Calm	Calm	0	0	Clear	
Shreveport, Louisiana	29.77	756.1	29.98	761.5	78	25.6	87	S	6	2.7			10s		SW	0	0	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	30.07	763.8	30.11	764.8	79	26.1	82	SW	9	4.0		5k	0	SW		0	0	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.51	749.5	30.18	766.6	58	14.4	64	N	8	3.6		2c	5s	W	W	0.02	0.5	Fair	
Springfield, Massachusetts	29.84	757.9	29.96	761.0	74	23.3	63	S	3	1.3		2cs	0	Calm		0	0	Fair	
Stockton, Texas	27.08	687.8	30.08	764.0	57	13.9	81	N	5	2.2			10s		Calm	0	0	Threatening	
Thatcher's Island, Mass	29.90	759.4	29.95	760.7	65	18.3	89	SW	19	8.5		0	0			0.17	4.3	Clear	
Toledo, Ohio	29.42	747.3	30.09	764.5	58	14.4	88	E	8	3.6			10s		E	0.34	8.6	Cloudy	
Tucson, Arizona	27.46	697.5	30.01	762.2	69	20.6	19	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.68	753.9	30.17	766.3	57.5	14.2	47	SE	5	2.2		8cs	0	W		0	0	Cloudy	
Uvalde, Texas	29.03	737.3	29.92	760.0	78	25.6	86	E	1	0.4			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.78	756.4	30.03	762.7	76	24.4	91	S	6	2.7		2cs	2s	Calm	S	0.40	10.2	Fair	
Virginia City, Montana	24.37	619.0	29.85	758.2	37	2.8	70	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.54	750.3	29.91	759.7	58	14.4	58	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C	29.93	760.2	30.04	763.0	75	23.9	77	SW	3	1.3		5c	0	NW		0	0	Fair	
Wickenburg, Arizona					67	19.4	42	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.01	762.2	30.08	764.0	79	26.1	82	SW	8	3.6		5c	0	SW		0	0	Fair	
Winnemucca, Nevada	25.78	654.8	30.14	765.5	42	5.6	33	NE	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.93	760.2	29.96	761.0	64	17.8	83	SW	13	5.8		2cs	0	Calm		0	0	Fair	
Yankton, Dakota	28.91	734.3	30.20	767.1	57	13.9	58	N	4	1.8		0	0			0	0	Clear	
Yuma, Arizona	29.66	753.4	29.80	756.9	74	23.3	18	N	8	3.6		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			59.5	15.3	74	Calm	0	0		8k	0			0.16	4.1	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.02	762.5	30.08	764.0	79	26.1	78	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	78	25.6	83	Calm	0	0		8c	2cs	Calm		0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.89	759.2	29.97	761.2	78.5	25.8	86	NE	1	0.4		8k	5s	E	NE	0.12	3.0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	78	25.6	91	SE			3	6cs	8ks	E		0.530	13.46	⅜ cloudy	C. J. Hering.
Puerto Perrio, U.S.Col'bia	29.39	746.5	29.95	760.7	80	26.7	95	Calm	0	0			8s			0	0		Francesco J. Cisneros.
Rivas, Nicaragua‖					77	25		NW				0	8k	NW		0.16	4.	Covered	Earl Flint.
Santiago de Cuba, W. I.	29.99	761.7	30.01	762.2	79	26.1	82	NE	6.8	3.0		2c	2s		NE	0.220	5.59		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.87	758.7	29.92	760.0	27.5	— 2.5	94	NE	5	2.2		5k	4s	N	NE	0.03	0.8	Cloudy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft.,or 757 m.; Florence, 1,550 ft.,(?) or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 milimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales. Owing to change of observers and instruments, the reduced pressures at Kingston, are now higher by 0.02 inch. than they have been since May 6th, 1880. Previous to Feb. 1st, 1880, the published observations of "James Gall" should be entirely rejected.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	OBSERVER.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.12	765.0	78	25.6	82	SE	2	0.9			d							Clear.	
§ Navy Yard, Portsmouth, N. H.	29.92	760.0	67	19.4	74	W	2	0.9			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.67	753.6	63	17.2	90	Calm			0		10n		NE	2.20	55.9			Light rain	
§ Adams, Punta Arenas, Costa Rica	29.90	759.4	79	26.1	91	NE			1		8		NE					Cloudy	
§ Alaska, Callao, Peru *	29.92	760.0	62	16.7	94	Calm			0		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.64	752.8	66	18.9	89	ENE			1		10		Calm			Smooth		Rainy	
§ Alliance, N. 37° 53', W. 70° 58'	30.12	765.0	71	21.7	95	W			1		2		W	0	0	Smooth	SW	Fair	
§ Ashuelot, Shanghai, China	29.97	761.2	64	17.8	78	NE			1		2		Calm	0	0	None		Clear	
§ Colorado, New York, N. Y.	30.00	762.0	70	21.1	80	SW	4	1.8			5			0	0			Hazy	
§ Constitution, New York, N. Y.	29.97	761.2	72	22.2	71	SW	5	2.2			2		SW					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.08	764.0	73	22.8	85	S	2	0.9			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	29.90	759.4	70	21.1	100	Calm	0	0			0			0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.62	752.3	48	8.9	100	WSW			1		10					Smooth		Cloudy	
§ Kearsarge, N. 33° —', W. 76° 50'	30.15	765.8	78	25.6	82	SSW			2		5		N			Smooth	E	Fair	
§ Lackawana, N. 13° 25', W. 89° 42' †	30.02	762.5	82	27.8	83	ESE			2		10		ESE			Smooth	ESE	Cloudy	
§ Marion, Port Stanley, Falkland I'ds	30.05	763.3	37	2.8	70	ESE			3		10			0	0			Cloudy	
§ Michigan, Erie, Pa.	30.10	764.5	52	11.1	86	E			4		10		E					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.09	762.0	71	21.7	90	SSW			0–1		2		Calm					Clear	
§ Monocacy, hefoo, China	29.94	760.5	60	15.6	76	N			4		2					Smooth	N	Clear	
§ New Hampshire, Port Royal, S. C.	30.03	762.7	79	26.1	86	SSW	12	5.4			5	NW	SW	0	0			Fair	
Nipsic, Villafranca, France	29.98	761.5	65	18.3	78	ESE			1		10					Smooth		Drizzling	
§ Onward, Ancon Bay, Peru †	29.98	761.5	62	16.7	94	S			1		10		S			Long	W	Misty	
§ Palos, Shanghai, China	29.96	761.0	65	18.3	84	SE			2		8		SE					Cloudy	
§ Passaic, Washington, D. C.	30.05	763.3	72	22.2	80	S			1		2			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.88	758.9	60	15.6	82	W			1		0					Smooth	S	Hazy	
§ Portsmouth, Bermuda	30.19	766.8	76	24.4	91	ESE			1		5		E			Smooth		Squally	
§ Powhatan, New York, N. Y.	30.02	762.5	73	21.7	80	WSW			2		2		NW					Fair	
§ Quinnebaug, Antwerp, Belgium	30.02	762.5	63	17.2	57	E			2		8		NE					Cloudy	
§ Richmond, Shanghai, China	29.96	761.0	68	20.0	42	N			2					0	0				
§ Rio Bravo, Brownsville, Texas †	30.15	765.8	80	26.7	100	SE	1	0.4			2		Calm	0	0			Clear	
§ Saratoga, Cadiz, Spain	29.95	760.7	73	22.8	67	SW			3		2		Calm	0	0			Clear	
§ Shenandoah, Montevideo, Uruguay	30.22	767.6	50	10.0	79	NW			1		2		Calm			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.04	763.0	69	20.6	95	SSW	8	3.6			5		SW	0	0			Fair	
Swatara, Bangkok Bar, Siam †	29.81	757.2	83	28.3	96	SSW			3		8		SW			Smooth		Fair	
§ Ticonderoga, N. 34° 59', E. 137° 20'	29.63	752.6	73	22.8	90	WSW			4		2		Calm			Mod'ate	SW	Fair	
§ Trenton, Villafranca, France	29.96	761.0	68	20.0	70	SE			2		10			12 h'rs	12 h'rs	None		Cloudy	
§ Vandalia, N. 40° 57', W. 73° 29'	29.99	761.7	74	23.3	72	Calm			0		2		Calm					Fair	
§ Wabash, Boston, Mass.	29.91	759.7	67	19.4	74	WSW	1	0.4			2			0	0			Clear	
§ Wachusett, Sandy Point, Strait of Magellan	29.94	760.5	39	3.9	100	NNE			3		8		N; E	Showers.		Smooth		Cloudy	
Wyoming, Villafranca, France	29.96	761.0	64	17.8	73	E			1		10		E			Smooth	E	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
U. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer.																			
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent N. 39° 31', W. 61° 22'	30.00	762.0	78	25.6	86	W			7		4		W	Mod'ate	Mod'ate	Mod'ate	WSW	Fair	
S. S. Ohio, Henry Morrison, Liverpool, Eng *†	30.25	768.3	65	18.3	94	NE			4		10		NE	2 h'rs	2 h'rs			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge N. 41° 19,' W. 63° 45' *†	29.95	760.7	63	17.2	94	W			3		2		W	5 h'rs	5 h'rs	Smooth		Clear	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger.																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 50° 03', W. 22° 51' *	30.06	763.5	72	22.2	71	W			1		10		W	0	0	Smooth		Hazy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 41° 16', W. 51° 13'	30.33	770.4	73	22.8	81	ENE			2		2		E	0	0	Light	E	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama, Japan †	29.60	751.8	62	16.7	83	N			5		8		N			Smooth		Cloudy	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 39° 38', W. 171° 16' †	29.92	760.0	59	15.0	88	S			6		6n		SW	Consid'ble		Rough	SSW	Gloomy	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon	30.18	766.6	54	12.2	67	SSE			1		2cs		W					Fair	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal. †	29.99	761.7	60	15.6		Calm			0		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	29.92	760.0	52	11.1		NW			2		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.77	756.1	76	24.4	95	NE			1		10		SSE			Heavy	SSW	Cloudy	F. A. Johnston. Banneman.
§ S. S. Australia																			
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, S. 34° 01′, E. 172° 30′.... †	29.58	751.3	62	16.7	100	Calm			0		10		SW			Smooth		Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly: La Libertad, San Salvador.... †	29.95	760.7	78	25.6	91	N			1		8		N	2.	51.	Large	S	Cloudy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China..... †	29.98	761.5	80	26.7	87	ESE			2		10		SW	0	0			Cloudy	
§ S. S. City of Sidney, H. C. Dearborn. S. 7° 30′, W 165° 40′....*†	29.74	755.4	84	28.9		ENE			6		2		ENE	0	0	Rough	ENE	Squally	E. LeSack. F. S. Doane.
§ S. S. City of Tokio, J. Maury																			
§ S. S. Colima, R. R. Searle.																			
§ S. S. Dakota, D. E. Griffiths, N. 44° 04′, W. 124° 44′....†	30.15	765.8	56	13.3	81	NW			2		10					Small	NW	Hazy	D. E. Griffiths.
§ S. S. Granada, J M Cavarly N. 7° 05′, W 81° 02′ ..... †	29.94	760.5	79	26.1	91	WSW			3	2c		W		Light	Light	Light	wsw	Clear	
§ S. S. Idaho, E. Alexander, N. 47° 04′, W. 124° 53′....†	30.11	764.8	60	15.6		S			2		10		S			Smooth	W	Drizzling	E. Alexander.
§ S. S. Zalandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 47° 50′, W 18° 43′..... †	30.26	768.6	57	13.9		E			2		10		E	0	0			Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 41° 56′, W. 55° 15′..... †	30.15	765.8	46	7.8		SW to WNW			3		2		W			Mod'ate		D. clouds	H. N. Goulden. J. Jones.
S. S. Britanic, H. Perry																			
S. S. Celtic, B. Gleadell																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Vin yard Sound, Mass†	30.06	763.5	67	19.4		WSW			1		0			0	0	Long	SW	Fine	Mehaffey.
Schr Adelie Fuller, J. Jorgensen, N. 36° 44′, W. 73° 50′..... †	30.11	764.8	76	24.4	82	Calm	0	0			Haze			0	0	Smooth		Hazy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Monabo, Porto Rico ....†	30.03	762.7	83	28.3		ESE			5		8		SE	Light	Light	Rough	SSE	Cloudy	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 16° 35′, W. 1° 00′..... *†	30.28	769.1	68	20.0		SE			5		8		SE			Rough	SSW	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 48° 37′, W. 60° 28′.....†	29.76	755.9				SE			5		8		SE	Light	Light	Cross	SE	Threatening	S. S. Miner.
Brigantine George, W. H Champlin, N. 32° 15′ W. 71° 07′.....†	30.29	769.4	80	26.7		SSE			1		0			0	0	Smooth		Fine	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 41° 26′, W. 66° 58′.....	29.97	761.2	54	12.2	100	W			4		2		W	0	0	Smooth		Hazy	James S. Garvin.

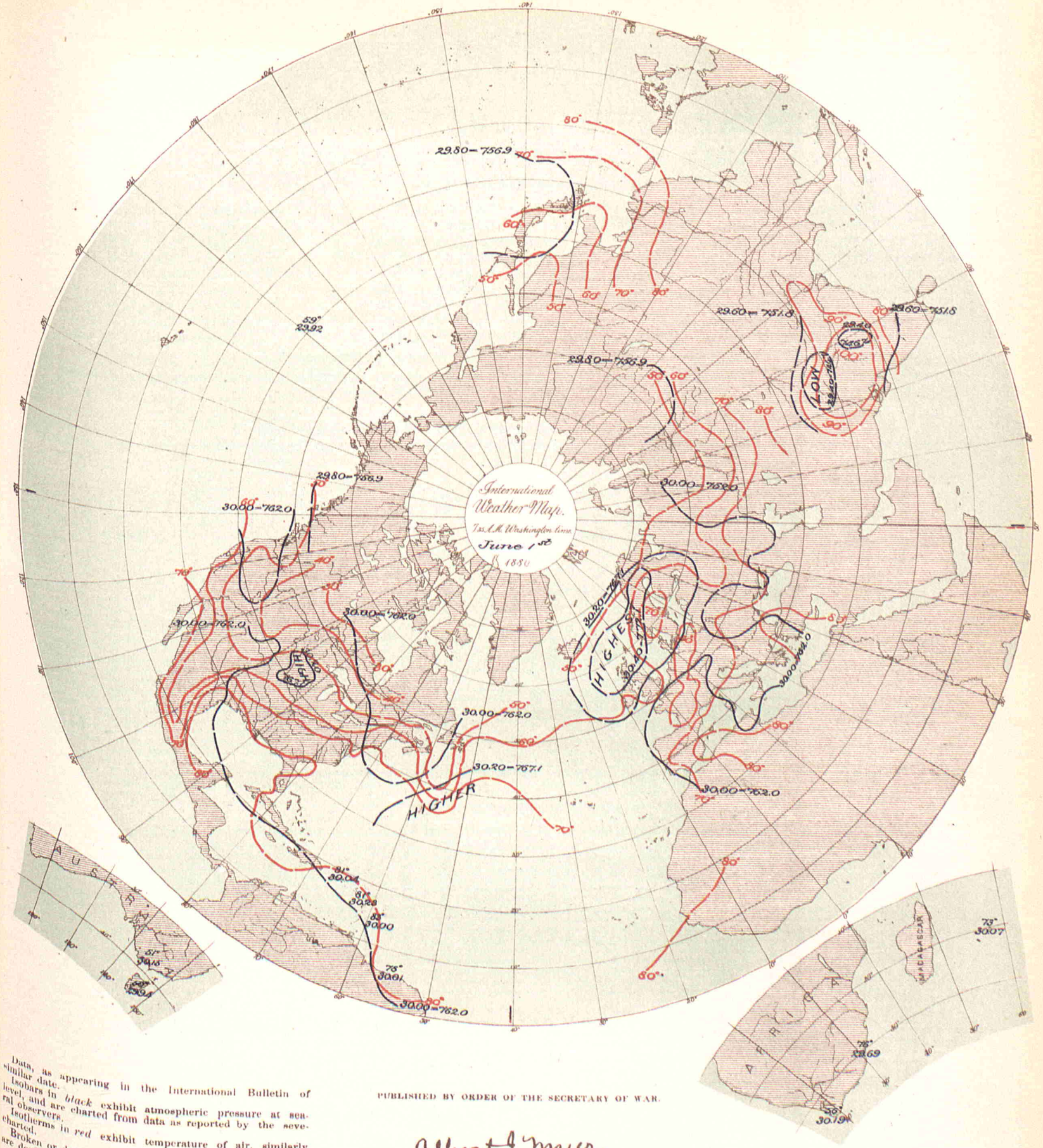
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 2, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			29.99	761.7	76.3	24.6	74	Calm			0		0			0	0	Clear	Metge.
Algiers			29.98	761.6	70.9	21.6	72	NW			3		0			0	0	Clear	Nicolas.
La Galle			29.96	761.0	71.1	21.7	83	NE			2		9			0	0	Very cloudy	Fonfrède.
Tunis			29.96	761.0															Jacques.
Sfax			30.02	762.5															Gau.
Saida			30.00	762.0															Charon.
Tebessa			30.02	762.6	82.2	27.9	18	SE			4		3			Inap.	Inap.	Pretty fair.	Watrin.
Geriville			30.02	762.5	80.8	27.1	92	WNW			2		0			0.079	2.0	Clear	Lonchamp.
Laghouat			29.97	761.3	84.9	29.4	23	E			1		0			0	0	Clear	Herlin.
Biskra			29.90	759.5	96.6	35.2	34	E			1		1			Inap.	Inap.	Very fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.46	748.3	29.99	761.8	72.0	22.2	48	SW			5		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.2	30.00	762.1	71.2	21.8	61	NNE	3.3	1.7			7			0	0		Dr. Wierzbicki.
Eperies	29.13	739.8	29.97	761.3	72.1	22.3	52	S			1		3cs			0	0		Julius Mikolik.
Gratz	28.72	729.4	29.93	760.2	68.5	20.3	61	SE			3		3			0	0		Andreas Rospini.
Hermannstadt	28.59	726.2	29.96	761.0	73.4	23.0	43	NW			2		5			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.52	724.5	29.82	757.4	67.6	19.8	75	E			3		9			0	0		The Staff.
Lemberg	29.01	736.8	29.97	761.3	62.6	17.0	78	NE			2		10			0.008	0.2		Dr. T. Stanecki.
Pola	29.91	759.8	30.02	762.6	67.0	19.8	76	ENE			3		8			0.039	1.0		I.R.Hydrographic Office.
Szathmar	29.58	751.4	30.03	762.8	73.8	23.2	44	NW			2		4			0	0		Pet. Pancsics, S. J.
Szegedin	29.71	754.5	29.98	761.4	70.5	21.4	53	S			1		6			0	0		Karl Stancel.
Trieste	29.95	760.7	30.05	763.3	71.1	21.7	72	Calm			0		8			0.189	4.8	Raining	P. Busin.
Vienna	29.25	742.9	29.97	761.2	69.1	20.6	59	ESE			3		2			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.73	755.2	29.93	760.2	61.2	17.9	53	ENE			2		10		ESE	0.122	3.10	Light rain	Royal Observatory.
Furnes	29.97	761.3	30.00	761.9	61.7	16.5	76	E			4		10			0.437	11.1	Light rain	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 2, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S., E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lw'r 0—10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.‖
Aberdeen	30.32	770.1	30.42	772.7	56.0	13.3		ENE	23	10.3			1			0	0	Blue sky	W. Boswell.
Ardrossan	30.33	770.4	30.34	770.6	64	17.8		ENE			3		5					Misty	G. Carrick.
Armagh, (Observatory)	30.09	764.3	30.31	769.9	63.0	17.2		NE	11	4.9			5					Squally	S. Call.
Bidston (Liverpool Obs)			30.18	766.6	57.8	14.3		NE	13	5.8			10					Overcast	John Hartnup.
Bolton (Sharples)	29.64	752.8	30.15	765.8	56.8	13.8		ENE	18	8.0			10					Overcast	Thomas Mackereth.
Bradford, Yorkshire	29.80	756.9	30.19	766.8	55.6	13.1	69	NE			3		8			0.03	0.8	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.03	762.7	80	26.7		NE			3		8					Overcast	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.97	761.2	30.06	763.5	56.0	13.3		NE			1		10			Blank	blank	Overcast	H. Todd.
Cardington			30.06	763.5	54.0	12.2		NE			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.90	759.4	30.03	762.7	61.0	16.1		NE			1		8k					Gloomy	Lance Cor. Hocker, R.E.
Donaghadee	30.28	769.1	30.33	770.4	59	15.0		NE			4		5					D. clouds	J. Mac Gowan.
Dover	29.95	760.7	29.98	761.5	60	15.6		NE			5		7					¾ clouded	J. Costello.
Falmouth (Observatory)	29.84	757.9	30.07	763.8	56.3	13.5		SE			1		9					Overcast	The Staff.
Fort Napier, Natal	27.83	706.9	30.04	763.0	67.8	19.9		SE			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.70	754.4	29.92	760.0	86	30.0		SW			1		8					D. clouds	
Galway (Queen's College)			30.23	767.8	67	19.4		NE			4		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean	29.95	760.7	30.00	762.0	72.0	22.2		SW			4		4					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.14	765.5	30.34	770.6	63.9	17.7		NE			6		6					D. clouds	D. G. Maclean.
Great Yarmouth	30.06	763.5	30.07	763.8	53	11.7		NE			4		7					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.86	758.4	30.03	762.7	55.6	13.1		NNE			2		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.78	756.4	30.00	762.0	57.5	14.2		NE			3		7					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.24	768.1	30.36	771.1	54	12.2		N			4		4k			0.07	1.8	Showers	M. P. Moyle.
Holyhead	30.15	765.8	30.20	767.1	54	12.2		NNE			4		10					Overcast	John Tilston.
Jersey	29.71	754.6	30.00	762.0	58.2	14.6		NE			4		5					D. clouds	J. Fisher.
Kew (Observatory)	29.99	761.7	30.03	762.7	59.5	15.3		NE	16	7.2			10					Threatening	The Met'g'l Office.
Leicester (Museum)	29.86	758.4	30.12	765.0	53.0	11.7		NE			5		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.90	759.4	29.97	761.2	69.8	21.0		NE			3		8					Overcast	A. King.
Nairn	30.37	771.4	30.43	772.9	65	18.3		E			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.04	763.0	81.0	27.2		NE			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.96	761.0	30.16	766.1	55.1	12.8		NNE			4		10kd		ENE	0.332	8.45	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.69	751.8	30.12	765.0	52.5	11.4		NE			6		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.84	757.9	30.19	766.5	52.4	11.3		N			3		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.96	761.0	30.03	762.7	60.8	16.0		ENE			2		10					Overcast	John Merrifield.
*Roche's Point	30.11	764.8	30.22	767.6	60	15.6		NE			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.95	760.7	30.12	765.0	56	13.3		NE			3		10					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.47	773.9	55	12.8		WNW	11	4.9			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.90	759.4	29.96	761.0	72.2	22.3		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.93	760.2	30.21	767.3	54.9	12.7		NE			3		10			0.05	1.3	Overcast	W. F. Cooper.
Silloth Rectory	30.23	767.8	30.26	768.6	63.7	17.6	52	SE			5		6			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.22	767.6	56.5	13.6		ENE	11	4.9			10					Overcast	Rev. S. J. Perry.
Straifield Turgiss	29.83	757.7	30.05	763.3	56.1	13.4		NE			3		10					Showery	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.06	763.5	30.18	764.0	56	13.3		SW			2		10					Raining	W. Newcombe.
Valencia (Observatory)	30.25	767.8	30.25	768.3	64.0	17.8		N	20	8.9			7					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	30.30	769.6	30.34	770.6	61.0	16.1	87	NNW	14.8	6.6		10	10			0.070	1.78	Gloomy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col																			
Constable, Cape Colony																			
Hobart Town, Tasmania			30.15	765.8	50.0	10.0	72	NW			1		7			0	0		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.41	772.4	57.0	13.9		E			4		0			0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.88	758.9	30.08	763.9	74.0	23.3	76	NNE	18.5	8.3		4	2	N		0.06	1.5	Squally	C. Meldrum.
Melbourne (Observatory)	30.02	762.5	30.11	764.8	53.0	11.7	84	N	10	4.5			9					Misting	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.46	773.7	53	11.7		NNE			4	3	0	NNE		0	0		J. Youngclause.
North Unst, Shetland I's			30.44	773.2				SW			2	6	4	SW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.																Sea or swell. Height scale 0—9	Direction from—		
H. M. S Alert																			Capt. J. P Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 40° 05′, W. 39° 05′			29.87	758.7	64	17.8		N			6		8			7	N; Confused	Raining	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H Spalding.
S. S. Ethiopa																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, S. 1° 08′, W. 7° 46′			30.04	763.0	77	25.0		ESE			3		0					Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	66.2	19.0	95	Calm			0	5s	5d		NE	1.26	32.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	30.17	766.4	30.22	767.6	63.1	17.3	43	ESE			2		0						
Fanöe	30.15	765.8	30.17	766.3	70.0	21.1	45	E			6		5						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.34	770.6	30.38	771.7	48.9	9.4	87	W			2		8						
Thorshavn (Faröe)	30.32	770.1	30.35	771.0	56.3	13.5	93	WSW			2		7						
Vestervig	30.14	765.6	30.24	768.0	68.2	20.1	33	NE			6		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.39	746.6	29.95	760.6	58.1	14.5	89	N			1		10n			0.008	0.2	Raining	Collignon, Director.
Amiens, Normal School	29.87	758.8	29.98	761.5	60.8	16	77	ENE			1		5		SW	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.64	752.9	29.89	759.3	57.0	13.9	89					c	8s;n	E		0	0		Klein, Commandant.
Avignon, Normal School	29.90	759.5	29.98	761.5	66.2	19	54	S			1		8		WSW	1.823	46.3	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.33	745.0	29.89	759.1	56.3	13.5	82	S			1		10		SW	0.161	4.1	Sprinkling	C. Saillard, Director.
Beauvais, Normal School	29.66	753.4	29.93	760.1	55.9	13.3	74	E			2		10		E			Raining	Frère Eugene Marie.
Besançon, Normal School	29.05	738.5	29.97	761.1	56.3	13.5	79	SE			1		10		SE	0.886	22.5	Covered	A. Carré, Director.
Bordeaux	29.76	756.0	29.96	761.0	65.1	18.4	57	NW			2		8	W	WNW	0.693	17.6	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.04	737.7	29.97	761.1	60.1	15.6	71	S			3		10n	S	S	0.39	10.	Raining	Marlot, Director.
Bourges, Normal School	29.28	743.8	29.82	757.5	63.7	17.6	76	SSW			1		n		SSW	0.39	10.		M. Gence, Director.
Brest, Naval Observatory	29.80	756.8	30.04	763.0	57.9	14.4	71	NE			2		9		NE	0.010	0.25		Ch. de Rermaree, Dir.
Caen, Normal School	29.83	757.7	29.90	759.4	58.3	14.6	98	SSW			1		10		E	0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.54	750.4	29.95	760.7	69.8	21	48	W			1		2		W	0.224	5.7	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.58	751.4	29.90	759.4	63.7	17.6	72	SE			2		8		SE	0.134	3.4	Very cloudy	Jadot, Director
Chartres, Normal School	29.30	744.1	29.85	758.2	66.9	19.4	57	N			1		9		S	0.28	7.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.55	725.1	29.89	759.3	54.9	12.7	62	SW			3		8		SW	0.480	12.2	Sprinkling	Allnard, Director.
Commercy, Normal School	29.06	738.2	29.91	759.8	59.0	15	80	E			3		kn	E	E	0.224	5.7	Raining	Dr. Coullet, Director.
Commune de Gréasque*	28.88	733.6	30.02	762.6	66.2	19	54	SW			2		5		SW	0.299	7.6		L. Kina, Director.
Grenoble, Normal School	29.16	740.6	29.91	759.7	64.8	18.2	72	WNW			1		kn		NE	0.685	17.40		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.75	755.6	29.96	761.0	58.3	14.6	91	W			1		5		W	0.024	0.6	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.61	752.0	29.91	759.8	54.1	12.3	96	E			1		10			0.020	0.5	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.00	736.6	29.90	759.5	63.5	17.5	70	SSE			3		10kn	S	S			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.90	759.5	30.00	762.0	63.7	17.6	59	N			2		8	NE	N	0.051	1.30	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.30	744.2	29.92	759.9	55.4	13.0	93	S			1		10			0.539	13.7	Raining	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.71	754.5	29.97	761.3	63.5	17.5	58	W			2		3		WSW	0.102	2.60		E. Stephan, Director.
Mirecourt, Normal School	28.89	733.7	29.91	759.6	62.6	17	73	SE			1		kn		SE	0.244	6.2		Barbier, Director.
Mont-Louis	24.82	630.3	30.05	763.3	50.9	10.5	62	SE	20.6	9.2			7		NE	0.228	5.8		M. Cave, for Dr. Fines.
Nice	29.93	760.2	29.96	761.0	66.9	19.4	75	SE			2		10	NW	SE	0.744	18.9	Covered	Capt. Boissière, Director.
Nismes, Normal School	29.77	756.1	29.97	761.2	67.5	19.7	57	SE			3		5		SE	1.22	31.	Cloudy	M. Boyer, Director.
Perpignan	29.89	759.1	29.99	761.7	66.2	19.0	62	S	7.4	3.3			7	W	W	0.441	11.2		Dr. Fines.
Pic du Midi (Plantade) H. P	22.48	570.9			37.4	3.0							5		SW	0	0	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.90	734.0	29.95	760.8	59.7	15.4	62	S			3		10	S	S	0.79	20.	Covered	M. Tallieu
Puy de Dome (Summit) Obs	24.97	634.3			36.6	2.2	100	WSW			6		10			0.539	13.7	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.93	760.3	29.96	761.0	66.7	19.3	72	W			1		5	W	W	0	0	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.82	757.5	29.91	759.7	58.1	14.5	82	NE			1		10		NE	0.020	0.5	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	30.01	762.2	30.04	762.9	62.8	17.1	77	NNW			2		2	NNW	NNW	0.045	1.15	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.60	751.9	29.89	759.1	61.9	16.6	72	NE			2		10		E	0.138	3.5	Covered	E. Renou, Director.
Tarbes, Normal School	28.85	732.9	29.93	760.3	53.6	12	76	W			1					0	0		T. Huguet, Director
Toulouse, Observatory	29.34	745.1	30.00	763.5	56.8	13.8	69	WNW			4		10			0.110	2.8	Covered	B. Baillaud, Dir.
Tours	29.67	753.6	29.87	758.6	62.6	17.0	72	NNW			1		10		N	0.213	5.4	Covered	M. de Tastes.
Versailles, Observatory	29.39	746.6	29.89	759.1	58.3	14.6	74	E			3					0.216	5.49		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.18	741.1	29.88	759.0	59.9	15.5	84	SE			3		5			0.575	14.6	Cloudy	Nicot, Director.
SUB-STATIONS.																			
Fort de France, Martinique	30.22	767.5	30.24	768.2	81.0	27.2										0	0		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.61	752.1			57.0	13.9	79	ENE			1		9		E	0.154	3.9		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.89	759.1	29.91	759.7	62.8	17.1	88	ESE	11.2	5.0			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:58 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhone.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.06	738.0	29.91	759.8	70.3	21.3	60	E					4k	E		0	0		Prof. Dr. Hoh.
Berlin	29.87	758.7	30.04	763.0	66.6	19.2	62	NE			1		10			0.165	4.2		Prof. Dr. Arndt.
Breslau	29.54	750.2	30.07	763.7	64.0	17.8	84	NE			1		9			0.026	0.66	Raining	Royal University Obs'y.
Carlsruhe	29.47	748.5	29.89	759.1	65.5	18.6	73	SW			0		10	NE		0.008	0.2	Thunder-storm.	Albert Senz.
Cassel	29.36	745.7	30.01	762.3	70.2	21.2	51	E			4		8	SE		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.61	752.1	29.97	761.3	71.2	21.8	30	E			2		10			0	0		Physical Society.
Friedrichshafen	28.49	723.6	29.90	759.4	60.4	15.8	74	NE			6		10	NE		0.051	1.3		Chief Telegrapher Wilhelm.
Hamburg	30.02	762.6	30.10	764.4	65.7	18.7	80	NE			4		9			0.079	2.0		Dr. Reinhold Kleeman.
Kiel	30.10	764.6	30.12	765.0	62.4	16.9	61	ENE			6		4			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	30.07	763.6	30.14	765.6	72.1	22.3	38	E			5		1			0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.60	751.7	30.00	762.1	68.4	20.2	59	E			3		6	ENE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.82	757.5	30.05	763.3	63.3	17.4	85	NE			2		10ks	ENE		0.012	0.3		Dr. Assmann.
Memel	30.13	765.4	30.18	766.6	71.8	22.1	26	NE			3-4	1c							Reinbrecht & Issermann.
Munich	28.05	712.5	29.91	759.6	66.0	18.9	60	NE			4		9			0	0		Dr. C. Lang.
Neufahrwasser	30.16	766.1	30.18	766.5	59.0	15.0	60	NE			4		0			0	0		A. Lothes.
Neustadt (Palatinate)	29.37	745.9	29.89	759.2	62.8	17.1	66	NE			1		10			0.925	23.5		Reallehrer Dicknether.
Posen	29.77	756.2	30.06	763.4	67.3	19.6	77	E			2		10			1.642	41.7		Prof. Dr. Magener.
Strassburg (in Alsace)	29.42	747.3	29.97	761.1	59.7	15.4	67	NNW			4		10					Raining	Imp. University Observatory.
Stuttgart	28.93	734.9	29.80	756.9	66.6	19.2	57	NE					7	E		0.220	5.6		Prof. Dr. Schoder.
Thorn	29.87	758.6	30.06	763.4	73.2	22.9	55	E			4		5			0.079	2.0		Dr. Cunerth.
Weissenburg (Bavaria)	28.42	721.9	30.00	761.9	65.7	18.7	62	E	5.6	2.5			10		E	0	0		Realleehrer J. Hopfner.
Wustrow	30.13	765.4	30.16	766.1	63.5	17.5	58	NE			4		5s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.63	752.5	30.00	762.1	81.0	27.2		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.49	749.0	29.54	750.2	84.0	28.9	64	SW	25.5	11.4			6		SW	0	0	Misty	
Deesa	29.00	736.7	29.45	748.1	104.6	40.3	17	WSW	12.0	5.4			0			0	0	Misty	
Bombay	29.56	750.8	29.60	751.7	87.4	30.8	74	WNW	12.0	5.4			5	W	W	0	0	D. clouds	
Poona (Yarrowda)	27.75	704.8	29.56	750.8	85.8	29.9	57	W	22.0	9.8			9	SE		0	0	D. clouds	
Belgaum	27.13	689.1	29.66	753.5	73.0	22.8	94	W	11.0	4.9			8	N	SW	0.16	4.1	Thunder-storm	
Lahore	28.67	728.2	29.37	745.9	106.3	41.3	17	Calm	4.0	1.8			0			0	0	Blue sky	
Roorkee	28.53	724.7	29.38	746.4	98.9	37.2	26	NW	2.0	0.9						0	0	Sultry	
Agra	28.86	733.1	29.29	746.5	106.6	41.4	26	N	4.5	2.0						0	0		
Nagpur	28.37	720.5	29.35	745.6	102.2	39.0	26	SW	2.4	1.1			9		W	0	0	Gloomy	
Jubbulpore	28.10	713.6	29.39	746.5	101.7	38.7	21	NE	5.2	2.3			8			0	0	Overcast	
Lucknow	29.07	738.4	29.43	747.5	100.9	38.3	31	ENE	2.4	1.1						0	0	Blue sky	
Allahabad	29.13	739.9	29.43	747.4	99.7	37.6	42	ENE	3.0	1.3			3	W		0	0	D. clouds	
Patna	29.30	744.3	29.48	748.7	94.5	34.7	53	E	2.2	1.0			6	E	E	0	0	D. clouds	
Hazaribagh	27.50	698.4	29.46	748.4	84.0	28.9	63	ENE	10.3	4.6			10			0	0		
Cuttack	29.39	746.4	29.47	748.5	81.7	27.6	86	Calm	2.2	1.0			10			0.78	19.8	Drizzling	
Calcutta (Alipore)	29.40	746.6	29.42	747.2	79.6	26.4	93	ESE	2.0	0.9			10		NE	0.94	23.9	Overcast	
Goalpara	29.13	740.0	29.53	750.0	89.5	31.9	59	ENE	11.2	5.0			9			1.62	41.1	D. clouds	
Chittagong	29.49	748.9	29.58	751.2	77.9	25.5	91	ESE	7.7	3.4			10			0.12	3.0	Overcast	
Sibsagar	29.25	742.9	29.58	751.3	84.4	29.1	85	ENE	2.3	1.0			10	SW	SW	0.14	3.6	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m., Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.65	753.2	30.06	763.4	67.5	19.7	51	SW	0.7	0.3			10			0	0		Prof. Giovanni Clodig.
Milan	29.46	748.3	29.98	761.6	65.2	12.9	92	NNW	4.9	2.2			10	E		1.453	36.9		Prof. Schiaparelli.
Padua	29.92	760.0	30.03	762.8	63.9	17.7	78	ENE	10.5	4.7			10	ESE		0.118	3.0		Prof. Dott. Lorenzoni.
Moncalieri	29.08	738.6	29.97	761.2	56.3	13.5	83	NNW	2.5	1.1			9	N		0.138	3.5		Prof. P. F. Denza.
Genoa	29.79	756.7	29.98	761 6	59.7	15.4	83	NE	0.7	0.3			10	SW		2.338	59.4		Prof. G. M. Garibaldi.
Mondovi	28.08	713.2	29.95	760.8*	53.8	12.1	82	N			2		8			0.705	17.9		Prof. D. C. Bruno.
Pesaro	29.93	760.1	29.97	761 3	68.2	20.1	78	E	12.5	5.6			10	SW		0	0		Prof. Luigi Guidi.
Florence	29.72	754.8	29.97	761.2	74.5	23.6	49	S			2		10	SW		0	0		Cav. F. Meucci.
Leghorn	29.89	759.3	29.98	761.4	71.1	21.7	71	SSE	8.7	3.9			7			0	0		Prof. P. Monte.
Rome	29.85	758.2	30.02	762 6	78.1	25.6	35	S	22.4	10.0			6			0.031	0.8		Prof. P. S. Ferrari.
Lecce	29.76	755.8	30.08	764.1	76.3	24.6	39	SE	3.1	1.4			0			0	0		Prof. C. De Giorgi.
Cosenza	29.19	741.3	30.04	763.0	79.2	26.2	65	SE	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.76	755.9	29.95	760.8	70.2	21.2	72	SSE			2		8	W		0.008	0.2		Prof. A. Pacinotti.
Palermo	29.81	757.1	30.06	763.4	77.9	25.5	48	NE	1.3	0.6			5			0	0		Fsof. G. Cincciatore
Syracuse	29.99	761.7	30.03	762.8	71.6	22.0	83	NE	2.5	1.1			8	SW		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.53	750.0	30.03	762.8	81.5	27.5	38	SW	0.7	0.3			2			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.3	16.8	67	NNE	7.5	3.3			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.70	754.4	29.90	759.4	61.2	16.2	79	NNE	1.5	0.7			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.79	756.6	29.86	758 4	56.1	13.4	93	SSE	3.5	1.6			3s			0.065	1.65	Foggy	The Staff.
Wakayama	29.87	758.7	29.92	759 9	59.8	15.4	63	NE	10.3	4.6			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.01	762.2	60.8	16.0	73	NW			1	5ks	0			0.24	6.0	Fair	Prof. L. Perez.
Guanaxuato	23.55	601.1			62.1	16.7	78	ENE	4.5	2.0		c	9k		E	0	0	Very cloudy	Vicente Fernandez.
Leon	24.43	620.4	29.95	760.7	71.6	22.0	68	E			2		9u		NE			Raining	Prof. M. Leal.
Mazatlan	29.64	752.9	29.90	759.4	75.4	24.1	90	Calm			0	7k	0	E		0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.6	29.97	761.1	59.0	15.0	81	Calm	0	0			10k		NE	0.04	1.0	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.98	609.2	29 90	759.5	67.8	19.9	66	NE			2		8ks		E	0	0	Very cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.38	593.9	30.05	763.2	59.0	15.0	43	Calm	0	0		3k	0	SE		1.61	40.8	Fair	Prof. P. Spina.
San Luis Potosi	24.23	615.4	30.13	765.3	63.1	17.3	77	E			1		10		E	0.09	2.3	Covered	G. Barroeta, M. D.
Tlacotalpam	29.85	758.3	29.87	758.6	77.0	25.0	95	S			2	1	9	SW	S	1.06	27.0	Raining	Prof. M. M. Chàzaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.61	574.4	30.19	766.7	59.9	15.5	83	SE			4		9ks		SE	0.20	5.0	Very cloudy	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.98	761.4	29.98	761.4	68.0	20.0		ENE			4					0	0		
Groningen	30.00	762.1	30.00	763.5	60.8	16.0		ENE								0.157	4.0		
Helder	30.03	762.8	30.03	762.8	59.5	15.3		NE			4					0.008	0.2		
Hellevoetsluis	29.97	761.3	29.97	761.3	66.9	19.4	63	NE			3					0	0		
Utrecht	29.95	760.8	30.00	762.0	66.6	19.2	54	NE			3		8			0	0	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.24	768.2	30.30	769.6	64.0	17.8	41	NNW	14.7	6.6			0			0	0		
Brönö	30.22	767.6	30.26	768.6	46.8	8.2	94	SW	9	4			10			1.004	25.5	Foggy	
Christiania	30.08	764.0	30.22	767.6	77.0	25.0	26	SSW	7	3			0			0	0		
Tromsö	29.93	760.3	29.99	761.7	43.2	6.2	88	W	7	3			10			0.154	3.9		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.86	758.4	30.07	763.7	65.8	18.8	98	E			4		8			0	0		Dr. J. A. Sampaio.
Campo Major	28.93	734.8	29.89	759.3	75.7	24.3	37	SW	5.6	2.5			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.09	764.2	30.17	766.4	67.1	19.5	65	Calm	0	0			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.70	754.3	30.65	763.3	66.9	19.4	52	NNW	13.0	5.8			7	SW		0	0		The Staff.
Ponta Delgada (Azores)	30.02	762.6	30.10	764.4	83.7	17.6	94	S	14.2	6.4			10			0.059	1.5		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0–9	Sea or swell. Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Costa																				
St. Paul de Loando			29.87	758.6	75.2	24.0		W			1		0			1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.02	762.4	66.2	19.0		NW			3		5		NW	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.88	759.0	82.6	28.1		SW			3		10		SW	2	SW	15	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.84	757.9	29.86	758.4	53.1	11.7	78	WNW	9	4			10						Capt. Sseliwerstow.
Astrakhan	29.92	760.0	29.84	757.9	72.7	22.6	57	N	13	6			3s					Light clouds	Capt. Wisganow.
Barnaul	29.28	743.8	29.77	756.2	59.0	15.0	71	NW	4	2			9						Meteorological Obs.
Dorpat	29.91	759.7	30.15	765.7	71.2	21.8	33	W	9	4			0						Prof. Dr. Weihrauch.
Ekaterinburg	28.97	735.8	29.91	759.7	62.2	16.8	36	ESE	4	2		c;ck	10ks						Meteorological Obs.
Irkutsk																			
Kasan	29.52	749.9	29.79	756.7	53.6	12.0	90	NNE	11	5			10n						Physical Cabinet.
Kertch	29.89	759.2	29.91	759.7	64.6	18.1	100	Calm	0	0			10					Thunder-storm.	Lagorio.
Kieff	29.27	743.4	29.88	759.0	67.3	19.6	70	N	7	3			10cks						Physical Cabinet.
Krotkowo*	29.32	744.8	29.78	756.3	68.0	20.0	74	N	11	5			10					Thunder-storm.	Cand. Fatjanow.
Lugan	29.58	751.4	29.78	756.5	66.6	19.2	80	E	2	1			10			Blank	Blank		Meteorological Obs.
Moscow	29.43	747.6	29.96	761.0	69.1	20.6	33	NNW	10.1	4.5			5ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.81	757.2	29.88	759.0	72.5	22.5	70	W	22	10			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.71	754.5	29.79	756.7	49.5	9.7	88	Calm	0	0			5k						
Nukuss																			
Orenburg																			
Pekin (China)	29.52	749.8	29.66	753.4	80.6	27.0	53	SW	7	3			4k						Physical Observatory.
St. Petersburg	30.02	762.4	30.03	762.8	61.0	16.1	57	WNW	20	9			1cs						Central Physical Obs.
Tashkend	28.28	718.2	29.75	755.7	82.0	27.8	41	Calm	0	0			0						Teich, A. M.
Tiflis	28.49	723.6	29.84	757.8	79.5	26.4	27	N	4	2			2ks						Physical Observatory.
Vladivostock																			
Warsaw	29.63	752.7	30.01	763.1	66.6	19.2	81	E	9	4			10ks						Astronomical Obs.
Wilna	29.70	754.4	30.11	764.8	67.8	19.9	53	NNE	7	3			1					Light clouds	Astronomical Obs.
Yeniseisk	29.48	748.7	29.76	755.9	51.8	11.0	50	WNW	20	9			10						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.92	759.9	30.02	762.6	66.7	19.3	58	SSW	4.5	2.00			k			0.264	6.71	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.06	763.4	30.11	764.8	64.8	18.3	74	NW	3.8	1.70		1	8	NW		0.142	3.6	Rainy	Prof. Manuel de Navarro.
Burgos, Met. Obs'y	27.09	688.0			61.3	16.3	52	NE	19.7	8.80			3			0.039	1.0	Light clouds	Domingo Martinez Perez.
Madrid, Royal Observatory	27.76	705.2	29.91	759.7	74.8	23.8	49	S	6.0	2.67		0	0			0	0	Clear.	The Staff.
Murcia, Met. Obs'y	29.85	758.1	29.99	761.8	75.2	24.0	55	E	6.8	3.06		2	4	E		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.11	739.3	30.02	762.4	65.8	18.8	47	NE	9.8	4.4			6			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.97	761.3	30.04	763.0	78.9	26.1	80	Calm	0	0		0	k			0	0	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	29.81	757.1	29.86	758.4	86.0	30.0	86	SE	6.6	3.0			10n		W	0.57	14.5	Rainy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.95	760.7	30.05	763.1	70.3	21.3	74	SSW	6.5	2.9		0	8		SW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	761.9	30.09	764.2	82.4	28.0	79	SE	0	0		4s	5k		SE	0	0	Cloudy	Enriquetadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.87	758.6	29.91	759.6	59.4	15.2		SW			4		5			0	0		
Umea	30.06	763.5	30.11	764.8	64.4	18.0	42	NW			7		9			0	0		
Hernosand	30.13	765.3	30.18	766.6	64.4	18.0	76	W			6		5			0	0		
Stockholm	30.04	763.0	30.22	767.5	74.8	23.8	27	W			4		7			0	0		
Wisby	30.18	766.5	30.24	768.0	55.4	13.0	51	N			2		0			0	0		
Sub-Series.																			
Upsala	30.09	764.2	30.19	766.8	74.8	23.8	34	NNE	4.9	2.2			5	WNW		0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain.		
Barque Australia					J. P. Pâhlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 50° 16′, W. 2° 20′				Blue sky	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.53	724.6	29.96	760.9	62.7	11.5	92	NNE			2		10			0.831	21.1	Covered	The Observatory.
Zurich	28.31	719.0	29.93	760.1	59.9	15.5	74	W			2		7			0	0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.3 mm.; Thermometer, —7.6 Cent. Relative Humidity, +36 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.00	762.1	72.7	22.6	62	ESE	6	2.5			1		SW	6	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.11	764.9	76.6	24.8		SW			2		0			0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.93	760.2	80.1	26.7	63	WSW			2		1ks		SW	0	0		Prof. C. V. A. van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					53.0	11.7		NW	2	0.9			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.96	761.0	30.02	762.5	54.9	12.7	62	N	7	3.1		2c	8ks	NW		0.02	0.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.96	761.0	30.00	762.0	54.1	12.3	77	NE	8	3.6			10s			0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	30.09	764.3	55.5	13.1	86	NW			1	1cs	0			0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.																			H. A. Johnson.
Father Point, Quebec	30.06	763.5	30.08	764.0	46.0	7.8	62	NW	4	1.8		0	0			Inap.	Inap.	Clear.	J. McWilliams.
Fredericton, N. B.	29.98	761.5	30.04	763.0	57.2	14.0	63	NW	1	0.4			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.19	741.4	30.01	762.2	53.5	11.9	73	S	1	0.4		1c	0			0	0	Hazy	James Stewart.
Granton, Ontario	29.06	738.1	30.16	766.1	55.0	12.8	93	N			1	0	0			0	0	Clear.	James Grant.
Halifax, N. S.	29.85	758.2	29.98	761.5	65.0	18.3	73	NW	3	1.3			10ks			0.014	0.35	Cloudy	A. Allison.
Hamilton, Ontario	29.80	756.9	30.19	766.8	53.7	12.1	79	SW			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.79	756.7	30.12	765.0	57.1	13.9	62	N	6	2.7		0	0			0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.98	761.5	30.02	762.5	52.1	11.2	83	E	2	0.9		5ks	0	N		0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.94	760.5	30.14	765.5	55.0	12.8	61	N	4	1.8		0	0			0	0	Clear.	C. H. McLeod, C. E.
Moose Factory, Ontario	30.10	764.5	30.14	765.5	38.0	8.3	89	Calm			0		10n			0.06	1.5	Cloudy	J. R. Nason.
Norwood, Ontario	29.44	747.8	30.12	765.0	56.3	13.5	55	NW	2	0.9		0	0			0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.46	748.3	30.16	766.1	52.0	11.1	66	E	6	2.7		0	0			0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.37	746.0	30.11	764.8	54.7	12.6	55	W			2	0	2ks			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.44	747.8	30.12	765.0	56.1	13.4	81	Calm	0	0		10k	0	NW		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.52	749.8	30.17	766.3	56.1	13.4	78	NE	1	0.4		2c	0	W		0	0	Fair	M. Payne.
Quebec, Quebec	29.78	756.4	30.11	764.8	50.0	10.0	72	E			1		Haze			0	0	Hazy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.70	754.4	30.17	766.3	45.0	7.7	77	Calm	0	0		0	0			0	0	Clear.	W. H. McIntyre.
St. John, N. B.	29.84	757.9	30.00	762.0	56.0	13.3	81	NE	5	2.2			10ks			0.030	0.76	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.43	747.5	30.18	765.8	57.1	13.9	68	S	7	3.1		0	0			Inap.	Inap.	Clear.	K. Stewart.
Stratford, Ontario	28.88	733.5	30.17	766.3	49.9	9.9	79	S	5	2.2		2cs	3ks			0	0	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.90	759.4	29.94	760.5	65.2	18.4	65	N	1	0.4		9ck	0	W		0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.80	756.9	30.19	766.8	54.4	12.4	56	SW	3	1.3		0	0			0	0	Clear.	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.10	739.1	30.16	766.1	56.0	13.3	72	S	3	1.3		6cs	0	W		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.93	760.2	30.00	762.0	54.1	12.3	84	N	5	2.2			10s			Inap.	Inap.	Raining	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.74	755.4	29.98	761.5	57	13.6	81	SW	1	0.4			10			0.05	1.3	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.87	758.7	53.6	12.0		SW			1					0	0		The Commandant.

Note.—The originals give the wind force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.04	763.0	30.12	765.0	56	13.3	69	NW	4	1.8		8cs	0	W		0.39	9.9	Fair	
Alpena, Michigan	29.43	747.5	30.08	764.0	53	11.7	67	SE	9	4.0		2cs	0	Calm		0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.86	733.0	29.97	761.2	70	21.1	90	NW	11	4.9			10s		NW	0.25	6.3	Cloudy	
Atlantic City, New Jersey	30.02	762.5	30.03	762.7	56	13.5	100	NE	19	8.5			10n		NE	0.92	23.4	Light rain	
Augusta, Georgia	29.84	757.9	30.04	763.0	74	23.3	90	Calm	0	0		0	8s		W	0.02	0.5	Fair	
Baltimore, Maryland	30.05	763.3	30.10	764.5	54	12.2	74	NE	10	4.5			10n		Calm	0.47	11.9	Light rain	
Barnegat, New Jersey	30.00	762.0	30.03	762.7	53	11.7	100	N	25	11.2			10n		Calm	1.12	28.4	Light rain	
Bismarck, Dakota	28.16	715.3	30.01	762.2	46	7.8	92	E	8	3.6			10s		Calm	0.04	1.0	Cloudy	
Boerne, Texas	28.62	726.9	29.88	758.9	75	23.9	91	Calm	0	0			10ks		S	0	0	Cloudy	
Boise City, Idaho	27.19	690.6	30.15	765.8	50	10.0	54	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	50	10.0	93	N	6	2.7			10n		Calm	0.21	5.3	Light rain	
Brackettville, Texas	28.89	733.8	29.90	759.4	77	25.0	91	E	12	5.4			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.98	736.1	29.97	761.2	49	9.4	93	E	5	2.2			10ks		E	0.07	1.8	Cloudy	
Brownsville, Texas	29.94	760.5	29.98	761.5	83	28.3	79	SE	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.46	748.3	30.16	766.1	54	12.2	43	NE	2	0.9		5c	Sm'e	SW	Calm	0	0	Fair	
Burkes, Arizona					63	17.2	24	N			1	0	0			0	0	Clear	
Burlington, Vermont	29.84	757.9	30.13	765.3	54	12.2	67	N	8	3.6		0	0			Inap.	Inap.	Clear	
Cairo, Illinois	29.80	756.9	30.19	766.8	64	17.8	58	N	10	4.5		0	0			0.06	1.5	Clear	
Campo, California	27.35	694.7	29.92	760.0	41	5.0	82	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.95	760.7	29.96	761.0	77	25.0	86	SW	22	9.8		5k	2s	W	SW	0	0	Cloudy	
Cape Henry, Virginia	29.92	760.0	29.93	760.2	65	18.3	100	N	11	4.9			10n		N	0.84	21.3	Light rain	
Cape Lookout, N. Carolina	29.96	761.0	29.98	761.5	76	24.4	91	SW	23	10.3		10k	0	W		0	0	Cloudy	
Cape May, New Jersey	29.97	761.2	30.00	762.0	57	13.9	94	N	16	7.2			10n		N	0.44	11.2	Light rain	
Castroville, Texas	29.26	743.2	29.93	760.2	81	27.2	78	S	3	1.3			10s		SE	0.03	0.8	Threatening	
Cedar Keys, Florida	30.03	762.7	30.06	763.5	82	27.8	79	SW	10	4.5		0	8ks		S	Inap.	Inap.	Fair	
Charleston, South Carolina	29.94	760.5	30.00	762.0	81	27.2	70	SW	6	2.7		0	8s		SW	0	0	Cloudy	
Charlotte, North Carolina	29.11	739.4	29.88	758.9	75	23.9	81	SW	5	2.2			10s		SW	0.02	0.5	Cloudy	
Chattanooga, Tennessee	29.24	742.7	30.01	762.2	69	20.6	85	NW	4	1.8		5ck	1ks	W	NW	0.32	8.1	Fair	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	46	7.8	33	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.43	747.5	30.11	764.8	60	15.6	65	SW	4	1.8		0	0			0	0	Clear	
Chincoteague, Virginia	29.95	760.7	29.96	761.0	59	15.0	100	N	32	14.3			10n		NE	0.07	1.8	Light rain	
Cincinnati, Ohio	29.55	750.6	30.20	767.1	57	13.9	63	N	4	1.8		8cs	10ks	W	Calm	0.11	2.8	Cloudy	
Cleveland, Ohio	29.46	748.3	30.19	766.8	54	12.2	74	E	1	0.4			P'g,sme		Calm	0.03	0.8	Cloudy	
Coleman City, Texas	28.33	719.6	29.98	761.5	62	16.7	88	N	5	2.2			10s		W	0	0	Cloudy	
Columbus, Ohio	29.34	745.0	30.17	766.3	52	11.1	86	N	4	1.8			10s		NE	0.08	2.0	Cloudy	
Concho, Texas	28.23	717.0	29.90	759.4	61	16.1	94	NE	12	5.4			10n		Calm	Inap.	Inap.	Light rain	
Corsicana, Texas	29.68	753.9	30.14	765.5	67	19.4	95	N	4	1.8			10n			0.56	14.2	Light rain	
Davenport, Iowa	29.49	749.0	30.12	765.0	59	15.0	76	S	6	2.7		0	0			0	0	Clear	
Dayton, Washington T'y					52	11.1	72	SW			1		10s		W	0	0	Cloudy	
Deadwood, Dakota	25.44	646.2			52	11.1	35	Calm	0	0		5ck	0	W		0	0	Fair	
Decatur, Texas	28.99	736.3	30.14	765.5	64	17.8	94	NE	9	4.0			10s		NE	0.26	6.6	Cloudy	
Delaware Breakwater, Del.	30.00	762.0	30.02	762.5	59	15.0	94	NE	30	13.4			10n		NE	0.14	3.6	Light rain	
Denison, Texas	29.35	745.5	30.14	765.5	62	16.7	94	N	3	1.3			10s		Calm	1.12	28.4	Cloudy	
Denver, Colorado	24.87	631.7	30.09	764.3	49	9.4	57	SE	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	29.23	742.4	30.10	764.5	57	13.9	69	SW	6	2.7		0	0			0	0	Clear	
Detroit, Michigan	29.48	748.8	30.15	765.8	53	11.7	86	W	2	0.9		2ck	0	W		0	0	Clear	
Dodge City, Kansas	27.56	700.0	29.83	757.7	56	13.3	63	Calm	0	0		0	0			0	0	Clear	
Dubuque, Iowa	29.49	746.7	30.09	764.3	59	15.0	70	SW	4	1.8		Haze	1s	Calm	Calm	0.08	2.0	Fair	
Duluth, Minnesota	29.38	746.2	30.06	763.5	45	7.2	84	NE	2	0.9		0	0			0.13	3.3	Clear	
Eagle Pass, Texas	29.21	741.9	29.92	760.0	76	24.4	64	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	29.94	760.5	30.03	762.0	52	11.1	86	W	6	2.7			10n		W	Inap.	Inap.	Light rain	
Edinburg, Texas					87	30.6	92	SE			1	2k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.47	748.5	30.18	766.6	56	13.3	69	SE	2	0.9			10s		NW	0.03	0.8	Cloudy	
Escanaba, Michigan	29.37	746.0	30.02	762.5	49	9.4	85	NW	2	0.9			10s		SW	0	0	Cloudy	
Florence, Arizona	28.35	720.1	29.95	760.7	67	19.4	55	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.08	637.0	30.52	775.2	45	7.2	46	SE	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.80	706.1	29.59	751.6	52	11.1	79	S	7	3.1		5cs	0	NW		0.28	7.1	Fair	
Fort Custer, Montana	26.77	680.0			62	16.7	41	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.34	643.6	30.31	769.9	60	15.6	88	NE	4	1.8			10s		NE	0	0	Threatening	
Fort Elliot, Texas	27.10	688.3	29.34	745.2	52	11.1	79	NW	4	1.8		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.60	751.8	30.14	765.5	62	16.7	83	N	3	1.3			10s		N	0	0	Cloudy	
Fort Grant, Arizona	25.22	640.6	30.02	762.5	71	21.7	22	E	9	4.0		0	0			0	0	Clear	
Fort Griffin, Texas	28.91	734.3	30.17	766.5	62	16.7	94	Calm	0	0			10n		Calm	0.75	19.1	Light rain	
Fort Keogh, Montana	27.14	689.3			52	11.1	71	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.85	707.4	29.72	754.9	66	18.9	84	E	10	4.5			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.96	735.6	30.07	763.8	60	15.6	88	N	3	1.3		0	0			0.06	1.5	Clear	
Fort Stevenson, Dakota	28.11	714.0			50	10.0	71	SE	5	2.2		8k	0	Calm		0	0	Cloudy	
Fort Verde, Arizona					52	11.1	54	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.01	762.2	30.05	763.3	82	27.8	83	S	1	0.4		2c	8ks	Calm	S	0	0	Cloudy	
Grand Haven, Michigan	29.46	748.3	30.10	764.5	62	16.7	67	S	12	5.4		8k	0	W		0	0	Fair	
Helena, Montana					58	14.4	42	SW	5	2.2		5cs	0	S		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.38	746.2	30.15	765.8	60	15.6	82	N	1	0.4		2c	0	W		0.03	0.8	Clear	
Indianola, Texas	30.03	762.7	30.06	763.5	82	27.8	83	S	4	1.8		2c	2ks	Calm	Calm	0	0	Fair	
Jacksboro, Texas	29.00	736.6	30.12	765.0	64	17.8	94	N	3	1.3			10s		N	2.30	58.4	Cloudy	
Jacksonville, Florida	30.03	762.7	30.05	763.3	78	25.6	78	SW	12	5.4		2cs	5s	Calm	SW	0.02	0.5	Fair	
Keokuk, Iowa	29.50	749.3	30.10	764.5	67	19.4	64	S	2	0.9		0	0			0	0	Clear	
Key West, Florida	30.02	762.5	30.05	763.3	81	27.2	67	E	6	2.7		2k	0	E		0	0	Fair	
Kittyhawk, North Carolina	29.95	760.7	29.97	761.2	71	21.7	95	W	18	8.0			10n		W	0.04	1.0	Heavy rain	
Knoxville, Tennessee	29.03	737.3	30.00	762.0	68	20.0	79	N	4	1.8			10ks		N	0.69	17.5	Threatening	
La Crosse, Wisconsin	29.29	744.0	30.01	762.2	57	13.9	69	S	5	2.2		0	2ks		S	0.05	1.3	Fair	
La Mesilla, New Mexico	26.17	664.7	30.32	770.1	61	16.1	16	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.59	751.6	29.92	760.0	81	27.2	78	SE	3	1.3		5k	0	SE		0	0	Fair	
Leavenworth, Kansas	29.31	744.5	30.14	765.5	59	15.0	70	Calm	0	0		0	0			0	0	Clear	
Lewiston, Idaho	29.22	742.2	29.86	758.4	57	13.9	48	S	1	0.4		5cs	0	Calm		0	0	Fair	
Little Rock, Arkansas	29.81	757.2	30.13	765.3	65	18.3	94	N	3	1.3			10s		Calm	0.92	23.4	Cloudy	
Los Angeles, California	29.57	751.1	29.90	759.4	57	13.9	87	SE	1	0.4			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.59	751.6	30.15	765.8	55	12.8	74	N	10	4.5		2k	5s	S	Calm	0.03	0.8	Fair	
Lynchburg, Virginia	29.36	745.7	30.03	762.7	61	16.1	88	NE	8	3.6			10n			0.62	15.7	Light rain	
Madison, Wisconsin	29.07	738.4	30.04	763.0	50	13.3	62	SW	15	6.7		5cs	0	W		Inap.	Inap.	Fair	
Marquette, Michigan	29.35	745.5	30.05	763.3	50	10.0	72	SE	2	0.9			10s		SE	0.05	1.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.46	722.9	30.19	766.8	69	20.6	95	NE	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Memphis Tennessee	29.65	753.1	30.08	764.0	63	17.2	78.	NE	7	3.1		0	8ks		NE	0.62	15.7	Cloudy	
Milwaukee, Wisconsin	29.35	745.5	30.06	763.5	61	16.1	61	SW	6	2.7		3ck;k	0	SW		0	0	Fair	
Mobile, Alabama	30.03	762.7	30.07	763.8	79	26.1	87	W	6	2.7		5ck	2s	W	Calm	0	0	Fair	
Montgomery, Alabama	29.85	758.2	30.08	764.0	73	22.8	95	NW	7	3.1			10ks		NW	0	0	Cloudy	
Morgantown, West Virginia	29.12	739.6	30.09	764.3	59	15.0	70	NE	6	2.7			10s		Calm	0.33	8.1	Cloudy	
Mt Washington, N H	23.82	605.0	30.18	766.6	31	— 0.6	79	N	15	6.7			10s		N	0.13	3.3	Cloudy	
Nashville, Tennessee	29.59	751.6	30.12	765.0	63	17.2	83	N	12	5.4			10s		N	0.10	2.5	Cloudy	
New Haven, Connecticut	29.94	760.5	30.05	763.3	49	9 4	93	NE	11	4.9			10n		NE	0.83	21.1	Light rain	
New London, Connecticut	30.02	762.5	30.07	763.8	53	11.7	93	N	6	2.7			10n		Calm	0.35	8.9	Light rain	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	80	26.7	86	SW	3	1.3			10s		SW	0.03	0.8	Cloudy	
Newport, Rhode Island	29.98	761.5	30.03	762.7	51	10.6	100	NE	8	3.6			10n		Calm	0.34	8.6	Light rain	
New River, North Carolina					77	25.0	86	SW			2		10ks		SW			Cloudy	
New York, New York	29.91	759.7	30.09	764.3	51	10.6	86	N	10	4.5			10n		N	1.23	31.2	Light rain	
Norfolk, Virginia	29.91	759.7	29.97	761.2	64	17.8	94	NE	12	5.4			10n		NE	0.40	10.2	Light rain	
North Platte, Nebraska	27.14	689.3	29.70	754.4	51	10.6	46	SW	6	2.7		0	0			0	0	Clear	
Olympia, Washington Ter	30.09	764.3	30.13	765.3	47.5	8.6	88	S	4	1.8		5k	2ks	W	W	Inap.	Inap.	Cloudy	
Omaha, Nebraska	28.94	735.1	30.01	762.2	64	17.8	53	S	10	4.5		0	1s		Calm	0	0	Clear	
Oswego, New York	29.83	757.7	30.16	766.1	51	10.6	72	N	4	1.8		1c	0	W		0.01	0.3	Clear	
Pembina, Dakota	29.14	740.1	29.96	761.0	47	8.3	85	S	4	1.8		2c	0	NW		0	0	Clear	
Pensacola, Florida	30.04	763.0	30.07	763.8	81	27.2	78	NW	5	2.2		2c;k	0	Calm;NW		0	0	Clear	
Philadelphia, Pennsylvania	30.02	762.5	30.07	763 8	52	11.1	86	NE	18	8.0			10n		NE	0.31	7.9	Light rain	
Phœnix, Arizona	28.72	729.5	30.43	772.9	77	25.0	31	E	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	17.92	455.2	30.13	765.3	27	— 2.8	53	SW	30	13.4		0	0			0	0	Clear	
Pilot Point, Texas	29.37	746.0	30.21	767.3	64	17.8	94	N	4	1.8			10ks		S	0.02	0.5	Cloudy	
Pioche, Nevada	24.09	611.9	29.86	758.4	46	9.4	18	Calm	0	0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.34	745.2	30.15	765.8	52	11.1	86	NE	4	1.8			10s		Calm	0.16	4.1	Cloudy	
Port Huron, Michigan	29.48	748.8	30.14	765.5	54	12.2	74	SW	1	0.4		0	0			0	0	Clear	
Portland, Maine	30.02	762.5	30.06	763.5	54	12.2	80	S	5	2.2			10s		Calm	0.53	13.5	Cloudy	
Portland, Oregon	30.10	764.5	30.17	766.3	55	12.8	81	NW	2	0.9			10s		W	0	0	Cloudy	
Portsmouth, North Carolina					77	25.0	86	SW	24	10.7		10k	0	SW		0	0	Cloudy	
Prescott, Arizona	24.80	629.9	30.16	766.1	47	8.3	41	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.03	762.7	30.05	763.3	77	25.0	77	E	10	4.5		5ck	0	SE		0.27	6.9	Fair	
Red Bluff, California	29.51	749.5	29.86	758.4	64.0	17.8	53	NW	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas	29.82	757.4	30.03	762.7	80	26.7	87	SE	8	3.6		5cs	2s	Calm	SE	0	0	Fair	
Rochester, New York	29.53	750.0	30.15	765.8	54	12.2	49	NE	6	2.7		2c	0	SW		0.04	1.0	Clear	
Roseburg, Oregon	29.50	750.8	30.13	765.3	54.5	12.5	87	N	7	3.1			10ks		NE	0	0	Cloudy	
Sacramento, California	29.76	755.9	29.83	757.7	63	17.2	62	SE	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.59	751.6	30.16	766.1	61	16.1	61	NE	6	2.7		0	0			0.01	0.3	Clear	
St. Paul, Minnesota	29.14	740.1	29.96	761.0	53	11.7	80	N	2	0.9		2c	0	NW		0.30	7.6	Clear	
Salt Lake City, Utah	25.66	651.8	29.99	761.7	55	12.8	33	SE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.38	746.2	30.05	763.3	83	28.3	79	SE	2	0.9			10n		Calm	0.11	2.8	Light rain	
San Diego, California	29.86	758.4	29.94	760.5	60	15.6	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.51	749.5	30.18	766.6	56	13.3	75	E	5	2.2		2c	0	Calm		0.10	2.5	Fair	
Sandy Hook, New Jersey	30.03	762.7	30 06	763.5	57	13.9	52	N	24	10.7			10n		Calm	0 63	16.0	Light rain	
San Francisco, California	29.83	757.7	29.89	759.2	53	11 7	80	W	15	6.7		0	0			0	0	Clear	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	49	9.4	51	SE	1	0.4		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	29.94	760.5	30.02	762.5	84	28.9	68	SW	5	2.2		1k	Haze	Calm	Calm	0.09	2.3	Clear	
Shreveport, Louisiana	29.87	758.7	30.08	764.0	72	22.2	80	N	2	0.9			10s		Calm	0.25	6.3	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	29.98	761.5	30.01	762.2	79	26.1	82	SW	16	7.2		5k	2ks	SW	S	0	0	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.51	749.5	30.18	766.6	62	16.7	56	E	5	2.2		0	0			0	0	Clear	
Springfield, Massachusetts	29.96	761.0	30.09	764.3	51	10.6	93	N	4	1.8			10n		NE	1.19	30.2	Light rain	
Stockton, Texas	27.09	688.1	30.09	764 3	61	16.1	94	NE	6	2.7			10s		Calm	0.04	1.0	Threatening	
Thatcher's Island, Mass	30.05	763.3	30.11	764.8	52	11.1	100	N	6	2.7			10n		N	0.20	5.1	Light rain	
Toledo, Ohio	29.44	747.8	30.11	764.8	61	16.1	71	SW	6	2.7		0	0			0	0	Clear	
Tucson, Arizona	27.45	697.2	30.00	762.0	68	20.0	18	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.72	754.9	30.22	767.6	51	10.6	76	NW	2	0.9		1cs	0	Calm		0	0	Clear	
Uvalde, Texas	29.07	738.4	29.96	761.0	80	26.7	82	SE	4	1.8		2c	8s	Calm	S	0	0	Cloudy	
Vicksburg, Mississippi	29.83	757.7	30.08	764.0	74	23.3	90	Calm	0	0		2k	5s	SW	E	0.03	0.8	Fair	
Virginia City, Montana	24.25	615.9	29.73	755.1	41	5.0	33	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.46	748.3	29.82	757.4	64.5	18.1	56	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.01	762.2	30.12	765.0	52	11.1	86	N	12	5.4			10s		N	0.18	4.6	Cloudy	
Wickenburg, Arizona					56	13.3	35	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.90	759.4	29.97	761.2	76	24.4	91	SW	12	5.4		2cs	5s	SW	SW	0.69	17.5	Fair	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	45	7.2	24	NE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.01	762.2	30.04	763.0	52	11.1	93	E	11	4.9			10n		N	0.37	9.4	Light rain	
Yankton, Dakota	28.70	729.0	29.97	761.2	60	15.6	88	W	15	6.7		8ck	0	W		0	0	Fair	
Yuma, Arizona	29.63	752.6	29.77	756.1	65	18.3	40	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0			60.5	15.8	65	N	1	0.4			10n			0.04	1.0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.02	762.5	30.07	763.8	78	25.6	82	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.98	761 5	29.99	761.7	78	25.6	87	Calm	0	0		8c	2s	Calm		0	0	Cloudy	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	78.5	25.8	78	E	7	3.1		10	10	SE	E	1.25	31.7	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.04	763 0	30.04	763.0	79	26.1	87	E			2	5ck	6ks	E		0.020	0.51	½ cloudy	C. J. Hering.
Puerto Perrio, U.S.Col'bia*	29.43	747.5	29.99	761.7	77	25.0	95	SE			1		10ks			0.68	17.3		Francesco J. Cisneros
Rivas, Nicaragua					77	25							7k		SE	0.08	2.	Covered	Earl Flint.
Sanago de Cuba, W. I.	30.01	762.2	30.04	763.0	78	25.6	82	Calm	0	0		4cs	8ks		SE	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.90	759 4	29.95	760.7	31.0	— 0.6	95	NW	6	2.7		4k	2s	NW	NW	0	0	Cloudy	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Bracketville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,263 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,596 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1,856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales. Owing to change of observers and instruments, the reduced pressures at Kingston, are now higher by 0.02 inch, than they have been since May 6th, 1880. Previous to Feb. 1st, 1880, the published observations of "James Gall" should be entirely rejected.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	OBSERVER.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.10	764.5	78	25.6	91	NE	4	1.8	.....	.....	5	.....	NE	.....	.....	.....	.....	Fair	
§ Navy Yard, Portsmouth, N. H.	30.10	764.5	53	11.7	61	NW	6	2.7	.....	.....	10	.....	.....	0.6	15.	.....	.....	Raining	
Naval Hospital, Yokohama, Japan	29.83	757.7	59.5	15.3	97	Calm	.....	.....	0	1ck	.....	Calm	.....	0.10	2.5	.....	.....	Clear	
§ Adams, Punta Arenas, Costa Rica	29.93	760.2	79	26.1	91	SE	.....	.....	1	.....	10	.....	SE	.....	.....	.....	.....	Cloudy	
§ Alaska, Callao, Peru *	30.00	762.0	62	16.7	58	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	SW	Foggy	
§ Alert, Yokohama, Japan	29.81	757.2	63	17.2	89	SSW	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	Clear	
§ Alliance, N. 38° 03', W. 69° 48'	30.03	762.7	74	23.3	95	SSW	.....	.....	3	.....	8	.....	SW	0	0	Smooth	SW	Fair	
§ Ashuelot, Shanghai, China	29.94	760.5	65	18.3	84	SE	.....	.....	1	.....	10	.....	Calm	0	0	None	.....	Cloudy	
§ Colorado, New York, N. Y.	30.01	762.2	51	10.6	93	NNE	10	4.5	.....	.....	10	.....	N	0.11	2.8	.....	.....	Rainy	
§ Constitution, New York, N. Y.	30.05	763.3	51	10.6	100	NNE	7	3.1	.....	.....	10	.....	NNE	.....	.....	.....	.....	Raining	
§ Franklin, Off Navy Yard, Norfolk, Va	29.97	761.2	66	18.9	89	N	10.8	4.8	.....	.....	10	.....	N	0.30	7.6	.....	.....	Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	29.90	759.4	61	16.1	??	WSW	2.4	1.1	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Jamestown, Sitka, Alaska *	29.86	758.4	43	6.1	92	ESE	.....	.....	2	.....	5	.....	.....	.....	.....	Smooth	.....	Fair	
§ Kearsarge, N. 36° 20', W. 75° 26'	29.96	761.0	74	23.3	95	SW	.....	.....	3	.....	10	.....	SW	.....	.....	Moderate	SW	Cloudy	
§ Lackawana, Entering La Union, San Salvador. †	30.06	763.5	82	27.8	87	NE	.....	.....	1	.....	10	.....	NE	.....	.....	Smooth	NE	Cloudy	
§ Marion, Port Stanley, Falkland I'ds	30.29	769.4	37	2.8	71	NE	.....	.....	3	.....	10	.....	.....	Blank	Blank	Smooth	.....	Cloudy	
§ Michigan, Erie, Pa.	30.06	763.5	52	11.1	86	SW	.....	.....	2	.....	2	.....	W	.....	.....	.....	.....	Hazy	
§ Minnesota, Navy Yard, Brooklyn, N.Y. *	30.06	763.5	51	10.6	100	NE	.....	.....	3	.....	10	.....	NE	.....	.....	.....	.....	Rainy	
§ Monocacy, Chefoo, China	29.84	757.9	64	17.8	78	SW	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy	
§ New Hampshire, Port Royal, S. C.	30.00	762.0	78	25.6	82	SSW	16	7.2	.....	.....	5	W	WSW	0	0	.....	.....	Fair	
Nipsic. Villafranca, France	29.97	761.2	67	19.4	69	S	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	.....	D. clouds	
§ Onward, Callao Bay, Peru †	30.01	762.2	62	16.7	94	SSE	.....	.....	2	.....	10	.....	S	.....	.....	Long	W	Misty	
§ Palos, Shanghai, China	29.93	760.2	65	18.3	84	SE	.....	.....	2	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
§ Passaic, Washington, D. C.	30.12	765.0	53	11.7	100	NE	.....	.....	3	.....	10	.....	NE	0.9	23.	.....	.....	Cloudy	
§ Pensacola, San Francisco, Cal.	29.87	758.7	57	13.9	81	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	S	Hazy	
§ Portsmouth, Bermudas	30.14	765.5	73	22.8	95	SE	.....	.....	4	.....	8	.....	.....	.....	.....	Smooth	.....	Raining	
§ Powhatan, New York, N. Y.	30.06	763.5	53	11.7	86	NNE	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Rainy	
§ Quinnebaug, Antwerp, Belgium	29.93	760.2	66	18.9	50	E	.....	.....	3	.....	10	.....	E	.....	.....	.....	.....	Cloudy	
§ Richmond, Shanghai, China	29.93	760.2	68	20.0	84	E	.....	.....	1	.....	10	.....	Calm	0	0	.....	.....	Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.17	766.3	78	25.6	100	SE	1	0.4	.....	.....	2	.....	S	0	0	.....	.....	Fair	
§ Saratoga, Cadiz, Spain	30.04	763.0	70	21.1	85	SW	.....	.....	2	.....	8	.....	SSE	0	0	.....	.....	Cloudy	
§ Shenandoah, Montevideo, Uruguay	30.23	767.8	49	9.4	71	N	.....	.....	3	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
§ St. Louis, League Island, Pa.	30.06	763.5	56	13.3	81	NNE	8	3.6	.....	.....	10	.....	NNE	0.5	13.	.....	.....	Light rain	
Swatara, N. 11° 00', E. 101° 39' †	29.80	756.9	85	29.4	72	S	.....	.....	2	.....	2	.....	S	.....	.....	Smooth	.....	Clear	
§ Tennessee, New York, N. Y.	30.07	763.8	53	11.7	80	NE	.....	.....	3–4	.....	10	.....	NE	0.66	16.8	Smooth	.....	Rainy	
§ Ticonderoga, N. 34° 40', E. 135° 12'	29.90	759.4	69	20.6	90	N	.....	.....	4	.....	0	.....	.....	.....	.....	Mod'ate	N	Clear	
§ Trenton, Villafranca, France	29.94	760.5	74	23.3	51	Var.	.....	.....	1	.....	8	.....	.....	13 hours		None	.....	Cloudy	
§ Vandalia, New London, Conn.	30.06	763.5	53	11.7	93	N	.....	.....	3	.....	10	.....	.....	.....	.....	.....	.....	Heavy rain	
§ Wabash, Boston, Mass.	30.09	764.3	59	15.0	76	NNW	7	3.1	.....	.....	10	.....	.....	0.18	4.6	.....	.....	Raining	
§ Wachusett, Sandy Point, Strait of Magellan	29.82	757.4	42	5.6	100	N	.....	.....	5–6	.....	10	.....	E	Showers		Mod'ate	NE	Cloudy	
Wyoming, Villafranca, France	29.96	761.0	66	18.9	74	ENE	.....	.....	1	.....	2	.....	E	.....	.....	Smooth	E	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			*W. E. Jago.
S. S. Circassian																			*R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 39° 37', W. 55° 19'	30.10	764.5	76	24.4	82	W			1		2		W	0	0	Mod'ate	WSW	Fair	
S. S. Ohio, Henry Morrison, Liverpool, Eng. *†	30.21	767.3	55	12.8	93	NNE			3		10		NE	1 h'r	1 h'r			Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge N. 40° 29', W. 70° 33' *†	29.98	761.5	52	11.1	100	NE			4		8		WSW	6 h'rs	6 h'rs	Mod'ate	NE	Cloudy	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger.																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 48° 49', W. 30° 48' *	29.98	761.5	69	20.6	70	S			0		10		S	0	0	Light	SW	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 42° 44', W. 45° 58'	30.22	767.6	59	15.0	70	E			2		2		E	0	0	Light	NE	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.				
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama, Japan †	29.71	754.6	61	16.1	94	NE			1		2		ENE			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 39° 28', W. 176° 12' †	29.58	751.3	59	15.0	82	SW			4		10n		SW	Const	d'ble	Rough	SW	Overcast	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Junct. Willamette & Columbia rivers.	30.20	767.1	54	12.2	87	NW *			3		5fs		W					Fair	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal. †	29.95	760.7	54	12.2		W			4–5		0							Clear	
§ S. S. Idaho, E. Alexander. S. S. Orizaba																			
§ S. S. State of California, G. Dohney, San Francisco, Cal. †	29.86	758.4	49	9.4		NW			2		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.91	759.7	80	26.7	95	Calm			0		8		Calm			Mod'ate Cross	SE;SW	Cloudy	F. A. Johnston. Banneman.
§S. S. Australia																			
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, S. 34° 00′, E. 166° 30′.... †	29.65	753.1	59	15.0	76	SW			2		0					Smooth	SW	Clear.	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 12° 00′, W. 87° 40′.....†	29.97	761.2	78	25.6	95	SSE			1		10		SE	1.	25.	Large	SW	Rainy	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, Hong-Kong, China.....†	29.84	757.9	82	27.8	83	E			2		5		SW					Showery	
§S. S. City of Sidney, H.C. Dearborn, S. 3° 19′, W 167° 10′.....*†	29.73	755.1	84	28.9		ENE			6		5		ENE	0	0	Rough	ENE	Squally	E. LeSack. F. S. Doane.
§S.S. City of Tokio, J. Maury																			
§S. S. Colima, R. R. Searle.																			
§S.S. Dakota, D. E. Griffiths, N. 48° 22′, W. 124° 52′....†	30.18	766.6	57	13.9	81	W			2		8		W			Mod'ate	W	Hazy	D. E. Griffiths.
§S.S. Granada, J M Cavarly N. 9° 28′, W. 84° 40′.....†	29.94	760.5	79	26.1	91	NW			1		10n		NW	Heavy	Heavy	Light	S	Clearing	
§S. S. Idaho, E. Alexander, N. 42° 56′, W. 124° 40′....†	30.21	767.3	63	17.2		S			1		10		WNW			Smooth	W	Hazy	E. Alexander.
§S.S. Zealandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 48° 43′, W 12° 46′.....†	30.22	767.6	56	13.3		NE			2		10		N			Light		Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 41° 29′, W. 62° 25′.....†	29.95	760.7	65	18.3		W			4		Mist		W			Mod'ate	SW	Rain & fog	H. N. Goulden. J. Jones.
S. S. Britanic, H. Perry.....																			
S. S. Celtic, B. Gleadell.....																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 40° 29′, W. 72° 05′.....†	30.07	763.8	58	14.4		NE			5		10n			1.25	31.7	Rough short	ENE	Stormy	Mehaffey.
Schr Adele Fuller, J. Jorgensen, N. 37° 45′, W. 74° 57′.....†	29.96	761.0	74	23.3	81	SSW	8	3.6			10k		S	0	0	Short		Cloudy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Manabo, Porto Rico ....†	30.09	764.3	85	29.4		ESE			3		2		ESE	0	0	Rough	SE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 18° 10′, W. 3° 25′.....*†	30.26	768.6	69	20.6		ESE			5		8		SE			Mod'at	SSW;SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 50° 36′, W. 5° 23′.....†	29.86	758.4				S			2		10		S	Light	Light	Long		Foggy	S. S. Minor.
Brigantine George, W. H. Champlin, N. 32° 48′ W. 71° 25′.....†	30.19	766.8	78	25.6		ESE			1		2			0	0	Smooth		Fine	
Iron Cross, W. Randall.....																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 42° 24′, W. 64° 50′.....	30.00	762.0	52	11.1	100	WSW			4		2		NW	0	0	Smooth		Hazy	James S. Garvin.

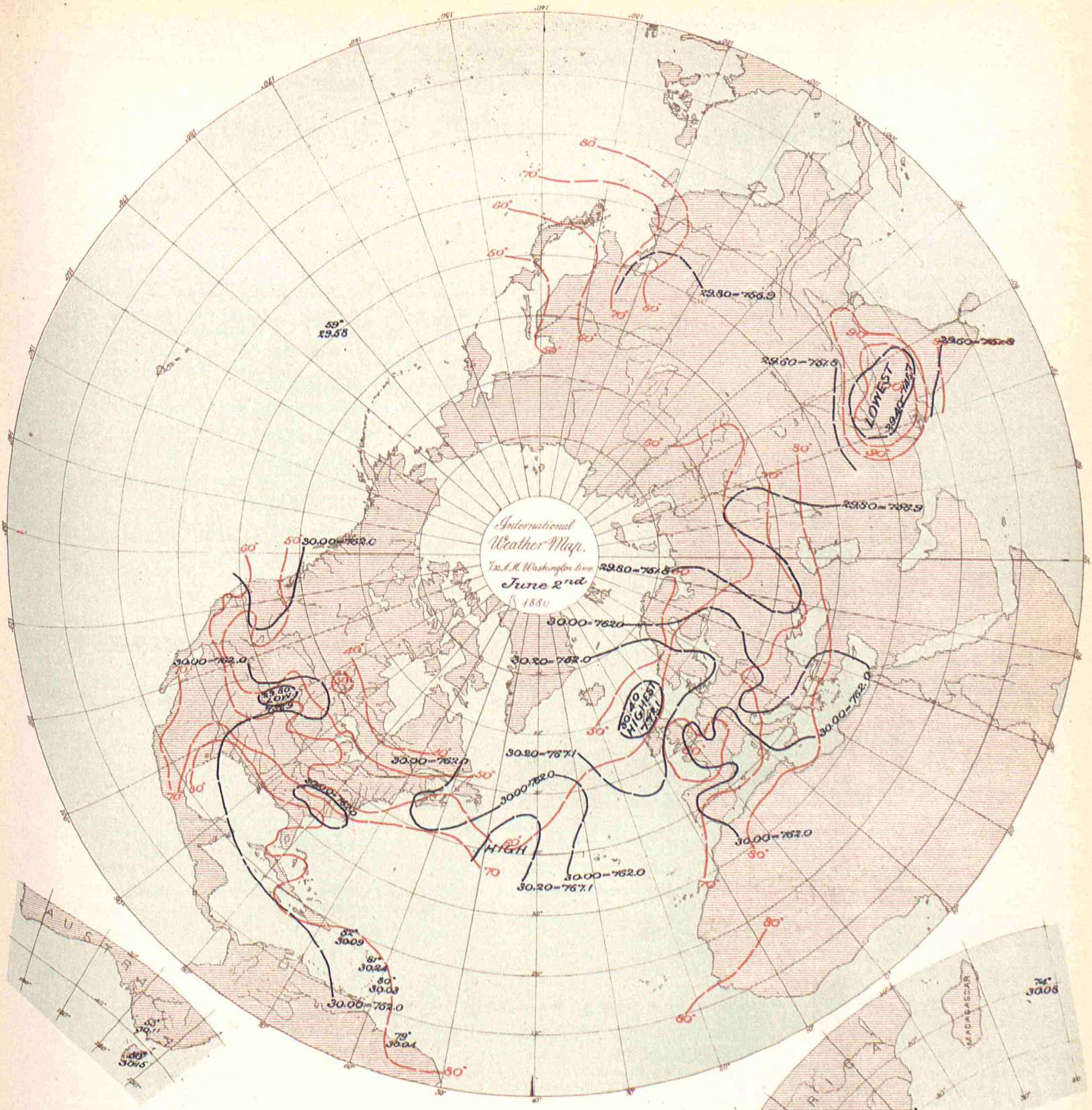
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 3, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.03	762.7	78.3	25.7	76	WNW			2		6			0	0	Cloudy	Metge.
Algiers			29.97	761.3	74.5	23.6	64	WNW			3		1			0	0	Very fair	Nicolas.
La Galle			30.00	762.0	70.7	21.5	82	NE			3		3			0	0	Pretty fair	Fonfrède.
Tunis			29.95	760.8															Jacques.
Sfax			29.98	761.5															Gau.
Saida			29.99	761.8															Charon.
Tebessa			30.02	762.4	83.5	28.6	21	NW			2		9			0	0	Very cloudy	Watrin.
Geriville			30.01	762.2	87.8	31.0	40	W			2		0			0.039	1.0	Clear	Lonchamp.
Laghouat			29.98	761.5	91.6	33.1	17	SSW			4		3			Inap.	Inap.	Pretty fair	Herlin.
Biskra			29.96	761.0	93.9	34.4	37	NW			3		3			Inap.	Inap.	Pretty fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.32	744.8	29.85	758.2	73.0	22.8	52	W			6		6			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.09	738.9	29.85	758.3	70.5	21.4	57	SSW	6.5	2.9			10			0.035	0.9		Dr. Wierzbicki.
Eperies	29.00	736.7	29.84	758.0	73.8	23.2	50	S			1		10ks			0	0		Julius Mikolik.
Gratz	28.59	726.3	29.79	756.6	72.9	22.7	43	S			3		3			0	0		Andreas Rospini.
Hermannstadt	28.51	724.2	29.86	758.5	78.8	26.0	41	E			1		1			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.54	724.9	29.84	758.0	65.3	18.5	59	Calm			0		2			0	0		The Staff.
Lemberg	28.89	733.8	29.84	757.8	72.7	22.6	55	SE			1		7			0.079	2.0		Dr. T. Stanecki.
Pola	29.85	758.1	29.96	760.9	67.3	19.6	81	W			1		6			0	0		I.R. Hydrographic Office
Szathmar	29.47	748.5	29.91	759.7	80.6	27.0	43	S			2		6			0.063	1.6		Pet. Pancsics, S. J.
Szegedin	29.60	751.8	29.87	758.6	76.3	24.6	48	S			3		6			0.098	2.50		Karl Stancel.
Trieste	29.87	758.7	29.97	761.3	66.2	19.0	92	Calm			0		5			0	0		P. Busin.
Vienna	29.18	741.2	29.92	760.0	61.5	16.4	73	W			3		8			0.008	0.2		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau
Brussels	29.63	752.5	29.82	757.5	58.1	14.5	84	SW			2		10		WSW	0.518	13.15	Light rain	Royal Observatory.
Furnes	29.85	758.2	29.87	758.8	56.8	13.8	94	NW			1		10			0.283	7.2	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.98	761.5	30.07	763.8	58.2	14.6		NW	19	8.5			10			0.050	1.27	Overcast	W. Boswell.
Ardrossan	30.07	763.8	30.08	764.0	64	17.8		NW			1		1					Blue sky	G.Carrick.
Armagh, (Observatory)	29.91	759.7	30.13	765.3	65.0	18.3		N	11	4.9			1					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.01	762.2	64.0	17.8		N	10	4.5			7					D. clouds	John Hartnup.
Bolton (Sharples)	29.46	748.3	29.97	761.2	55.5	13.1		ENE	27	12.1			10					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.60	751.8	29.99	761.7	55.8	13.2	69	E			1		5			0.03	0.8	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	82	27.8		NE			3		3					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.81	757.2	29.91	759.7	52.5	11.4		N			2		10					Drizzling	H. Todd.
Cardington			29.90	759.4	52.0	11.1		NE			1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.77	756.1	29.90	759.4	57.0	13.9		Calm			0		9k					Gloomy	Lance Crp'l Hocker, R.E.
Donaghadee	30.08	764.0	30.12	765.0	59	15.0		NNE			3		0					Blue sky	J. Mac Gowan.
Dover	29.81	757.2	29.84	757.9	59	15.0		N			4		10					Misty	J. Costello.
Falmouth (Observatory)	29.75	755.6	29.97	761.2	55.9	13.3		NNW			3		10					Foggy	The Staff.
Fort Napier, Natal	27.92	709.2	30.13	765.3	67.4	19.7		S			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.70	754.4	29.93	760.2	88	31.1		N			1		10					D clouds	
Galway (Queen's College)			30.13	765.3	62.5	16.9		N			4		0					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.00	762.0	30.06	763.5	73.0	23.1		SW			5		8					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.84	757.9	30.05	763.3	66.8	19.3		SE			1		0					Blue sky	D. G. Maclean.
Great Yarmouth	29.86	758.4	29.87	758.7	53	11.7		N			3		8					Rain & fog	G. T. Watson.
Greenwich (Royal Obs'y)	29.71	754.6	29.88	758.9	55.9	13.3		N			1		10					Overcast	The Staff, for G.B.Airy.
Guernsey	29.70	754.4	29.92	760.0	53.5	11.9		NW			2		8					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.14	765.5	30.26	768.6	59	15.0		N			4		4k			0	0	Fine	M. P. Moyle.
Holyhead	30.03	762.7	30.06	763.5	55	12.8		N			3		2					Blue sky	John Tilston.
Jersey	29.66	753.4	29.95	760.7	56.1	13.4		NW			2		7					Gloomy	J. Fisher.
Kew (Observatory)	29.86	758.4	29.90	759.4	55.0	13.1		N	10	4.5			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.69	754.1	29.95	760.7	52.0	11.1		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.85	758.2	29.92	760.0	72	22.2		NE			2		0					Blue sky	A. King.
Nairn	30.04	763.0	30.13	765.3	55	12.8		NNW			3		10					Drizzling	W. D. Penny.
Nassau, Bahamas			30.07	763.8	84.0	28.9		SE			0		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.80	756.9	29.99	761.7	55.0	12.8		NNE			4		10k		NE	0.059	1.50	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.43	747.5	29.96	761.0	52.0	11.1		N			2		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.70	754.4	29.95	760.7	52.5	11.4		N			1		10					Drizzling	The Staff, for E. J. Stone, Esq.
Plymouth	29.87	758.7	29.95	760.7	56.6	13.7		NW			2		10					Overcast	John Merrifield.
*Roche's Point	30.04	763.0	30.15	765.8	65	18.3		NNE			4		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.86	758.4	30.02	762.5	52	11.1		N			3		10					Raining	John C. Walker.
Sandwick Manse, Orkneys			30.13	765.3	49.9	9.9		N	30	13.4			10					Drizzling	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.86	758.4	29.93	760.2	70.4	21.3		SW			1		5					D. clouds	Serg't W. H. Lyne.
Sheffield	29.73	755.1	30.01	762.2	55.7	13.2		NE			1		9			0.01	0.3	Overcast	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	68.0	20.0	51	SE			3		0			0.075	1.91	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.02	762.5	59.2	15.1		NE	11	4.9			7					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.71	754.6	29.92	760.0	55.0	12.8		NE			2		10					Overcast	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.94	760.5	29.96	761.0	62	16.7		N			4		7					Gloomy	W. Newcombe.
Valencia (Observatory)	30.15	765.8	30.17	766.3	60.3	15.7		N	23	10.3			7					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.32	770.1	30.36	771.1	63.6	17.6	64	WNW	9.3	4.2		0	8			0	0	Cloudy	The Staff, for D. Gill.
Colesberg Bridge, Cape Col.																			
Constable, Cape Colony																0	0		Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.03	762.7	53.0	11.7	76	N			3		7kn			0.11	2.8	Fine	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			30.07	763.8	66.5	19.2		E			2		2k			0.04	1.0	Fine	C. Meldrum.
Mauritius (Observatory)	29.88	758.9	30.06	763.6	77.0	25.0	74	SSE	9.0	4.0		0	1			0.08	2.0	Misting	R. L. J. Ellery.
Melbourne (Observatory)	30.19	766.8	30.28	769.1	50.0	10.0	93	W	3	1.3			10						J. Youngclause.
Monach Lt-house, Hebrides			30.25	768.3	51	10.6		NNE			4	5	5	NE		0	0		Robert Burnet.
North Unst, Shetland I's			30.04	763.0				N			6	8	8	N		0	0		

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. Colesberg Bridge and Constable, unknown. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES.

VESSELS.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount.	Clouds. Direction.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																Capt. J.P Maclear, R.N.
City of Agra																Capt. Thos. Young.
City of Cashmere																Capt. W. M. Grieve.
Barque Tommewyne																Capt. Jas. Buchan.
Ship British Commodore, N. 39° 25′, W. 37° 00′			29.95	760.7	64	17.8		NE		6	5		6	NE; Confused	Misty	Capt. J. W. Thorne.
Barque Decapolis																Capt. T. M. Almond.
Barque Dochra																Capt. H Spalding.
S. S. Ethiopia																Capt. A. Campbell.
Barque Fedalma																Capt. H. L. Fox.
Brig. Fylde																Capt. L. C. Dart.
S. S. German, N. 3° 20′, W. 11° 39′			30.00	762.0	81	27.2		S		3	3				D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																Capt. Wm. Waring.
Barque Hope																Capt. Jas. Campbell.
S. S. Richmond																Capt. W. H. Stuart.
Barque Royal Alexandra																Capt. W. P. Hughes.
S. S. Strathleven																Capt. C. W. Pearson.
S. S. Sunbeam																Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	67.1	19.5	90	Calm			0	3c;ck				Inap.	Inap.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.81	757.2	29.86	758.4	64.8	18.2	49	ESE			2		0						
Fanöe	29.78	756.4	29.80	756.9	74.1	23.4	45	E			4		3						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.38	771.7	30.43	772.8	46.8	8.2	81	E			2		0						
Thorshavn (Faröe)	30.26	768.7	30.30	769.6	48.3	6.3	74	N			5		4						
Vestervig	29.77	756.1	29.86	758.5	71.1	21.7	43	ENE			2		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.35	745.6	29.91	759.6	64.4	18	62	NW			1		5ks	E	N	0.08	2.	Cloudy	Collignon, Director.
Amiens, Normal School	29.76	755.8	29.86	758.5	66.9	19.4	72	ENE			1		2		SW	0.16	4.	Slightly cld'y	Vaillant, Director.
Arras, Engineer School	29.56	750.8	29.81	757.2	55.4	13.0	88	NNW			2		10n	E		0.081	2.05	Covered	Klein, Commandant.
Avignon, Normal School	29.87	758.7	29.95	760.7	74.7	23.7	50	N			1		2		S	0	0	Partly cld'y	Giraud, Director.
Bar-sur-Seine	29.35	745.6	29.91	759.6	59.2	15.1	74	SW			1		10		SW	0.106	2.7	Covered	C. Saillard, Director.
Beauvais, Normal School	29.57	751.0	29.83	757.6	64.6	18.1	59	ENE			1		8		NNE	0.049	1.25	Raining	Frère Eugene Marie.
Besançon, Normal School	29.08	738.6	29.96	760.9	62.6	17	62	SW			1		5		SW	0.291	7.4	Cloudy	A. Carré, Director.
Bordeaux	29.71	754.5	29.90	759.5	61.5	16.4	57	ESE			1		10		ESE	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.08	738.6	30.00	762.1	68.0	20	50	S			1		8kn	W	W	0.08	2.	Very cloudy	Marlot, Director.
Bourges, Normal School	29.34	745.2	29.88	758.9	63.3	17.4	74	W			2		kn		W	0.138	3.5		M. Gence, Director.
Brest, Naval Observatory	29.72	755.0	29.97	761.2	57.9	14.4	78	N			2		10		N	0	0	Misty	Ch. de Rermaree, Dir.
Caen, Normal School	29.78	756.3	29.84	757.9	58.3	14.6	93	NW			1		10		NW	0.252	6.4	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.46	748.2	29.86	758.4	71.2	21.8	46	E			2		5		E	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.58	751.3	29.90	759.4	57.9	14.4	93	S			2		8		SE	0.087	2.2	Very cloudy	Jadot, Director
Chartres, Normal School	29.30	744.2	29.85	758.2	66.6	19.2	90	NW			1		5		SE	0.28	7.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.55	725.2	29.87	758.7	64.9	18.3	56	NW			1		5			0.004	0.1		Alluard, Director.
Commercy, Normal School	29.01	736.9	29.85	758.3	61.9	16.6	70	W			3		kn	W	W	0.031	0.8		Dr. Coullet, Director.
Commune de Gréasque*	28.87	733.3	30.01	762.3	68.0	20	42	SW			2		8		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.12	739.6	29.86	758.4	69.1	20.6	50	WNW			1	ck				0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.74	755.5	29.96	760.9	61.5	16.4	79	NW			1		8		W	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.60	751.7	29.86	758.4	60.8	16	83	W			2		10		W	0.059	1.5	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.66	738.0	29.96	761.0	64.6	18.1	65	NNW			1		10k		W			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.86	758.4	29.96	760.9	60.4	15.8	75	NNW			2		8		N	0.063	1.60	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.32	744.7	29.93	760.3	67.3	19.6	44	SE			1		1cn		SSE	0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.70	754.3	29.96	761.0	71.4	21.9	49	W			1		9		W	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.87	733.2	29.89	759.2	61.2	16.2	67	SW			3		kn		SW	0.08	2.		Barbier, Director.
Mont-Louis	24.75	628.6	29.98	761.6	51.8	11.0	83	W	16.8	7.5			8		W	0.512	13.0		M. Cave, for Dr. Fines.
Nice	29.92	760.0	29.96	760.9	69.4	20.8	69	SE			3		2	SE	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.72	755.0	29.93	760.1	72.9	22.7	55	S			3		5		S	0	0	Cloudy	M. Boyer, Director.
Perpignan	29.70	756.6	29.89	759.2	66.7	19.3	70	SE	7.4	3.3			7	SW	E	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.40	569.0			39.2	4.0							10		SW	0.669	17.0	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																		Raining	M. Tallieu
Privas, Normal School	28.87	733.2	29.89	759.3	70.7	21.5	46	S			2		5	S	S				Alluard, Director.
Puy de Dome (Summit) Obs	25.09	637.2			46.4	8.0	73	W			2		8			0.079	2.0		
Rochefort, Naval Obs'y	29.93	760.2	29.96	761.0	63.1	17.3	69	SW			1		10	SW	SW	0.55	14.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.80	757.0	29.89	759.2	66.7	19.3	63	N			2		5		NNW	0.138	3.5	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.89	759.2	29.92	760.0	59.2	15.1	78	NW			3		5	NW	NW	0.197	5.01	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.68	753.9	29.85	758.1	64.6	18.1	65	N;E			1		5		SW	0.154	3.9	Cloudy	E. Renou, Director.
Tarbes, Normal School	28.81	731.8	29.87	758.8	60.8	16	65	SW			1								T. Huguet, Director
Toulouse, Observatory	29.92	742.1	29.94	760.5	66.7	19.3	55	NNE			1		10			0.047	1.2	Covered	B. Bailland, Dir.
Tours	29.69	754.1	29.89	759.1	64.8	18.2	57	W			1		8		W	0.063	1.6	¾ covered	M. de Tastes.
Versailles, Observatory	29.36	745.8	29.85	758.3	63.7	17.6	59	NW			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.43	747.5	30.08	764.0	17.6	22	29	SE			1		5			0.08	2.	Cloudy	Nicot, Director.
SUB-SKETCHES.																			
Fort de France, Martinique	30.26	768.5	30.28	769.2	82.4	28										0	0		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.57	751.1			64.4	18.0	59	WNW			1		5		WNW	0.106	2.7		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.88	758.9	29.90	759.5	65.1	18.4	86	E	12.3	5.5			8k			0	0	Al. covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.99	736.3	29.85	758.1	66.2	19.0	56	SW			6		8n	SW		0.098	2.5		Prof. Dr. Hoh.
Berlin	29.52	749.9	29.69	754.1	65.3	18.5	75	NE			1		8			0.807	20.5	Thunder-storm.	Prof. Dr. Arndt
Breslau	29.28	743.8	29.81	757.2	67.3	19.6	77	SSE			3		9			0.069	1.74	Rainy	Royal University Obs'y
Carlsruhe	29.44	747.7	29.85	758.2	66.6	19.2	60	SW			2		9	SW		0	0		Albert Senz.
Cassel	29.17	741.0	29.78	756.4	64.9	18.3	70	NW			4		9	SW		0.055	1.40		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.52	749.8	29.88	759.0	68.5	20.3	31	SW			2		7			0.138	3.5		Physical Society.
Friedrichshafen	28.50	724.0	29.91	759.7	62.6	17.0	57	WSW			4		2	WSW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.68	753.8	29.75	755.6	63.9	17.7	93	NNE			3		9			0.016	0.4		Dr. Reinhold Kleeman.
Kiel	29.77	756.2	29.79	756.6	66.6	19.2	66	ENE			3		6			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.91	759.6	29.98	761.6	74.3	23.5	32	E			4		1			0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.34	745.1	29.75	755.6	59.9	15.5	87	SW			1		10	WSW		0	0		Prof. Dr. Bruhns, Privy Counsellor
Magdeburg	29.52	749.9	29.75	755.6	60.1	15.6	89	WSW			4		10	NW		1.476	37.5	Rain & hail.	Dr. Assmann.
Memel	29.85	758.2	29.90	759.4	70.9	21.6	47	NNW			3		3s						Reinbrecht & Issermann
Munich	28.10	713.6	29.95	760.7	64.9	18.3	43	W			4		7	SW		0.075	1.9		Dr. C. Laug.
Neufahrwasser	29.88	759.0	29.90	759.4	62.6	17.0	56	ENE			4		3			0	0		A. Lothes.
Neustadt (Palatinate)	29.34	744.9	29.85	758.2	64.8	18.2	55	W			2		7	W		0.39	10.		Reallehrer Dicknether.
Posen	29.50	749.3	29.78	756.5	63.7	17.6	92	E			2		10			0.016	0.4		Prof. Dr. Magener.
Strassburg (in Alsace)	29.37	745.9	29.90	759.5	66.7	19.3	50	SSW			6		6	SW		0.082	2.07		Imp. University Observatory.
Stuttgart	28.94	735.0	29.81	757.1	65.3	18.5	50	SW					7	E		0.016	0.4		Prof. Dr. Schoder.
Thorn	29.68	753.9	29.87	758.6	71.1	21.7	59	SE			4		6			0.177	4.5		Dr. Cunerth.
Weissenburg (Bavaria)	28.40	721.3	29.97	761.2	64.2	17.9	48	W	6.0	2.7			7k		W	0.213	5.4		Reallehrer J. Hopfner.
Wustrow	29.77	756.2	29.80	756.9	69.3	20.7	64	NE			4		5ks			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.58	751.2	29.95	760.8	79.0	26.1		SW			4.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.41	747.1	29.46	748.4	85.0	29.4	84	S	37.8	16.9			6	SSW		0	0	D. clouds	
Deesa	28.96	735.6	29.41	747.0	104.8	40.4	16	W	12.4	5.5			0			0	0	Misty	
Bombay	29.53	749.9	29.56	750.9	87.1	30.6	77	WNW	13.0	5.8			10		W	0.22	5.6	Overcast	
Poona (Yarrowda)	27.76	705.1	29.62	752.4	71.8	22.1	90	W	18.0	8.0			10	W		0.16	4.1	Thunder storm	
Belgaum	27.12	689.0	29.60	753.3	73.2	22.9	91	SSW	9.0	4.0			7	E	W	0.14	3.6	Threatening	
Lahore	28.62	726.9	29.31	744.5	107.3	41.8	20	Calm	1.0	0.4			6			0	0	D. clouds	
Roorkee	28.48	723.4	29.34	745.4	92.2	33.4	39	E	5.0	2.2						0	0		
Agra	28.50	731.6	29.33	745.0	107.6	42.0	21	N	4.0	1.8						0	0		
Nagpur	28.36	720.4	29.35	745.4	102.4	39.1	29	Calm	4.1	1.8			9		SW	0	0	D. clouds	
Jubbulpore	28.09	713.4	29.38	746.3	100.5	38.1	23	N	5.0	2.2			10			0	0	Overcast	
Lucknow	29.11	739.3	29.47	748.5	98.5	36.9	44	ENE	3.1	1.4						0	0	Blue sky	
Allahabad	29.09	738.8	29.38	746.3	98.4	36.9	45	E	3.8	1.7			0			0	0	Blue sky	
Patna	29.29	744.0	29.47	748.6	86.6	30.0	65	E	3.0	1.3			8	E	E	0.09	2.3	D. clouds	
Hazaribagh	27.45	697.2	29.45	747.9	75.8	24.3	91	NW	7.9	3.5			10		NW	1.9	48.8	Thunder-storm.	
Cuttack	29.39	746.5	29.47	748.6	84.8	29.3	79	SW	1.7	0.8			10			0.76	19.3	Overcast	
Calcutta (Alipore)	29.41	747.0	29.43	747.5	79.4	26.3	92	SW	15.0	6.7			10		SSW	0.49	12.4	Drizzling	
Goalpara	29.20	741.5	29.61	752.0	74.0	23.3	97	ENE	11.2	5.0			10			3.76	95.5	Overcast	
Chittagong	29.53	750.1	29.62	752.4	81.9	27.7	87	SE	9.2	4.1			10			0	0	Overcast	
Sibsagar	29.28	743.8	29.61	752.2	83.2	28.4	86	NE	3.2	1.4			10	SW	SW	2.8	72.4	D. clouds	

Note.—*The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard.* All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Upper 0—10.	Lower 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.55	750.5	29.95	760.7	71.1	21.7	57	W	4.3	1.9			6			0.358	9.1		Prof. Giovanni Clodig.
Milan	29.42	747.2	29.93	760.1	65.9	20.5	56	S	4.3	1.9			2	NE		0	0		Prof. Schiaparelli.
Padua	29.84	757.8	29.95	760.6	69.8	21.0	55	SW	4.9	2.2			7	SW		0.165	4.2		Prof. Dott. Lorenzoni.
Moncalieri	29.03	737.4	29.92	760.0	64.6	18.1	58	E	8.1	1.4			6	NE		0.157	4.0		Prof. P. F. Denza.
Genoa	29.79	756.7	29.98	761.6	65.8	18.8	61	S	4.8	1.9			6	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.05	712.4	29.92	760.0	64.2	17.9	58	E			2		7	SE		0	0		Prof. D. C. Bruno.
Pesaro	29.92	759.9	29.97	761.1	64.6	18.1	80	NE	9.8	4.4			9	SW		0	0		Prof. Luigi Guidi.
Florence	29.71	754.6	29.97	761.1	75.2	24.0	49	W			2		5			0.020	0.5		Cav. F. Meucci.
Leghorn	29.92	759.9	30.00	762.0	71.2	21.8	54	SE	3.8	1.7			5			0	0		Prof. P. Monte.
Rome	29.81	757.2	29.98	761.6	78.8	26.0	41	SSW	14.3	6.4			10			0.020	0.5		Prof. P. S. Ferrari.
Lecce	29.73	755.1	29.98	761.4	79.7	26.5	31	ENE	4.9	2.2			4			0	0		Prof. C. De Giorgi.
Cosenza	29.11	739.4	29.97	761.1	87.1	30.6	68	NW	0.7	0.3			0			0	0		Prof. D. Conti.
Cagliari	29.74	755.3	29.93	760.2	72.3	22.4	70	S			4		6	SW		0.020	0.5		Prof. A. Pacinotti.
Palermo	29.73	755.2	29.98	761.5	78.8	26.0	42	NE	4.3	1.9			3			0	0		Prof. G. Cincciatore.
Syracuse	29.93	760.2	29.97	761.3	73.0	22.8	60	E	3.8	1.7			8	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.46	748.3	29.97	761.1	80.6	27.0	40	SE	3.8	1.7			9			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.3	16.8	78	NNE	1.4	0.6			1cs			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.73	755.1	29.98	760.2	66.0	18.9	81	SW	0.8	0.4			0			0	0	Clear	S. Takéhayashi.
Tokei, (Yeddo) Observatory	29.90	759.4	29.97	761.2	61.2	16.2	80	NNE	3.5	1.6			10s			0.001	0.03	Cloudy	The Staff.
Wakayama	29.87	758.7	29.93	760.2	60.6	15.9	74	SSW	1.6	0.7			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.09	637.3	30.08	764.0	59.9	15.5	74	Calm			0		9k			0.32	8.2	Very cloudy	Prof. L. Perez.
Guanaxuato	23.72	602.6			62.6	17.0	72	ENE	5.6	2.5		3c;ok	1nc	SW;E	SE;N	0.03	0.10		Vicente Fernandez.
Leon	24.48	621.7	30.05	763.3	68.5	20.3	73	E			4	3c	5kn		E	Inap.	Inap.	Cloudy	Prof. M. Leal.
Mazatlan	29.71	754.5	29.97	761.2	77.0	25.0	65	E			1	9k	0	E		Inap.	Inap.	Very cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.13	587.5	30.08	764.0	58.1	14.5	85	Calm	0	0			10k		E	0.29	7.3	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	24.02	610.1	29.95	760.7	65.1	18.4	87	N			1		9ks		SE	0.13	3.4	Very cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.45	595.7	30.17	766.3	56.8	13.8	68	Calm	0	0		8k	0			0.032	0.8	Fair	Prof. P. Spina.
San Luis Potosi	24.29	616.9	30.21	767.3	62.6	17.0	73	E			1		10		E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpan	29.04	760.5	29.95	760.8	77.0	25.0	95	Calm			0	2	7	NE		0.23	5.9	Raining	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.67	575.8	30.27	768.8	57.2	14.0	82	SE			1		10n		SE	Inap.	Inap.	Raining	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.84	758.0	29.84	758.0	60.6	15.9		W			2					0.303	7.7		
Groningen	29.72	754.8	29.77	756.2	64.2	17.9		NE								0.024	0.6		
Helder	29.80	756.9	29.80	756.9	60.8	16.0		N			1					0.264	6.7		
Hellevoetsluis	29.80	757.0	29.80	757.0	58.1	14.5	95	NW			1					0	0		
Utrecht	29.76	755.9	29.81	757.1	61.3	16.3	87	SE			1		8			0.598	15.2	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.87	758.8	29.93	760.2	55.0	12.8	77	NNW	6.0	2.7	.....	.....	4	.....	.....	0	0	.....	
Brönö	29.76	755.9	29.80	756.9	44.2	6.8	85	NW	9	4	.....	.....	10	.....	.....	0	0	.....	
Christiania	29.64	752.8	29.78	756.3	75.0	23.9	27	SSW	20	9	.....	.....	0	.....	.....	0	0	.....	
Tromsö	29.62	752.4	29.68	753.8	40.5	4.7	74	N	18	8	.....	.....	10	.....	.....	0.319	8.1	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.95	760.6	30.15	765.9	69.3	20.7	88	ESE	.....	.....	3	.....	5	.....	.....	0.236	6.0	.....	Dr. J. A. Sampaio.
Campo Major	29.01	736.8	30.00	761.9	64.8	18.2	46	WNW	10.5	4.7	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.12	765.1	30.21	767.3	67.1	19.5	68	Calm	0	0	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.76	756.0	30.13	765.2	64.6	18.1	43	NW	13.7	6.1	.....	.....	4	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.08	764.1	30.15	765.9	71.6	22.0	69	Calm	0	0	.....	.....	4	.....	.....	0.256	6.5	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando	.....	.....	29.91	759.6	75.6	24.2	.....	W	.....	.....	1	.....	0	.....	.....	1	W	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't.
Rio Lima, s. c. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sà da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela	.....	.....	30.01	762.3	63.0	17.2	.....	N	.....	.....	3	.....	10	.....	.....	2	NW	.....	Overcast	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China	.....	.....	29.90	759.4	84.9	29.4	.....	SW	.....	.....	2	.....	10	.....	SW	1	SW	10	Thunder-[storm.	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.80	756.9	29.82	757.4	49.8	9.9	59	NNW	9	4	.....	.....	3ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.85	758.1	29.76	756.0	82.9	28.2	39	WSW	16	7	.....	.....	5ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.44	747.8	29.93	760.2	62.4	16.9	46	NW	0	0	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.69	754.2	29.93	760.1	70.9	21.6	39	NW	4	2	.....	.....	2k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.50	724.0	29.45	747.9	52.9	11.6	75	W	18	8	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.33	745.0	29.60	751.7	59.5	15.3	62	WSW	11	5	.....	.....	8u	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.85	758.1	29.87	758.6	66.9	19.4	94	S	2	1	.....	.....	3	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.30	744.2	29.92	759.9	70.2	21.2	37	NNE	4	2	.....	ck	3ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.31	744.5	29.78	756.3	54.9	12.7	50	WNW	0	0	.....	.....	9	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.55	750.6	29.75	755.6	73.4	23.0	59	NE	4	2	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.25	743.0	29.78	756.4	67.5	19.7	39	NNW	7.8	3.5	.....	.....	6ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.80	757.0	29.87	758.8	76.6	24.8	61	N	9	4	.....	.....	5k;3s	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.53	750.0	29.61	752.2	48.4	9.1	92	E	9	4	.....	5ck	.....	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.56	750.7	29.70	754.3	79.0	26.1	46	SW	4	2	.....	.....	4k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.87	758.8	29.89	759.2	61.2	16.2	58	NW	13	6	.....	.....	3ks;n	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.26	717.7	29.72	755.0	83.5	28.6	47	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.45	722.6	29.80	756.9	74.5	23.6	37	NW	4	2	.....	.....	10ks	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.46	748.2	29.86	758.5	72.5	22.5	57	SE	13	6	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.55	750.6	29.95	760.8	72.0	22.7	36	ENE	4	2	.....	.....	1	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Yeniseisk	29.66	753.3	29.95	760.7	41.2	5.1	84	NW	11	5	.....	.....	8	.....	.....	.....	.....	Rain & hail.	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.82	757.4	29.92	760.0	66.2	19	65	SSE	8.5	1.56	.....	.....	9	.....	.....	0.060	1.53	Misty	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.99	761.8	30.05	763.3	53.4	11.9	93	NW	1.9	0.86	.....	.....	10	.....	.....	0.366	9.3	Raining	Prof. Manuel de Navarro.
Burgos, Met. Obs'y	26.99	685.5	.....	.....	48.6	9.2	95	NE	19.7	8.80	.....	.....	8	.....	.....	0	0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.69	703.4	29.85	758.2	69.4	20.8	45	SW	23.1	10.34	.....	2	8	.....	.....	0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.81	757.2	29.96	760.9	79.7	26.5	62	SE	4.2	1.86	.....	3	5	NW	.....	0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.11	739.3	30.00	761.9	58.8	14.9	60	NW	6.9	3.1	.....	.....	9	.....	.....	0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.99	761.8	30.06	763.4	75.8	26.6	77	NE	2.9	1.3	.....	c	k	.....	.....	0	0	Clear	Benito Vines, S. J.
Manila, Philippine Islands	29.85	758.1	29.90	759.4	82.5	28.1	93	NE	1.6	0.8	.....	.....	10n	.....	W	0.155	39.4	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.02	762.4	30.12	764.9	68.9	20.5	62	WNW	11.2	5.0	.....	0	10	.....	S	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.6	30.11	764.9	80.2	26.8	86	SE	0	0	.....	7s	4kn	.....	SE	0	0	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.76	756.0	29.80	757.0	46.4	8.0		S			2		10					Raining	
Umea	29.75	755.7	29.80	757.0	55.4	13.0	68	SW			6		9			0	0		
Hernosand	29.82	757.5	29.87	758.8	56.8	13.8	98	SSE			6		5			0.012	0.3		
Stockholm	29.71	754.5	29.88	759.0	72.3	22.4	81	SSE			2		0			0	0		
Wisby	29.91	759.6	29.97	761.1	63.7	17.6	47	W			2		0			0	0		
Sub-Series.																			
Upsala	29.73	755.2	29.82	757.4	78.8	26.0	31	SSW	12.1	5.4			0			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia																				J. P. Pahlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr
Saga, N. 49° 43′, W. 4° 42′			29.98	761.4	55.9	13.3		NE			3		9						Misty	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.52	724.4	29.91	759.8	65.7	18.7	41	SW			4		3			0.201	5.1	Vapory		The Observatory.
Zurich	28.31	719.1	29.91	759.6	67.3	19.6	55	W			2		5		W	0	0	Cloudy		The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.5 mm.; Thermometer, —0.5 Cent. Relative Humidity, —15 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level, the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.97	761.3	79.3	26.3	54	ESE	3	1.5			4		SW	0	0			The Observatory.
Fao, Persian Gulf																				
Valona			30.03	762.8	79.0	26.1		SW			1		0			0	0	Clear.		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y			29.86	758.4	80.2	26.8	63	SW			3		0			0	0			Prof. C. V. A. van Dyck.

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					49.0	9.4		Calm	0	0		0	0			0	0	Clear.		Hon. J. Ferguson.
Chatham, N. B.	30.18	766.6	30.24	768.1	51.4	10.8	83	NE	2	0.9		10ck	0	NW		0	0	Fair.		G. A. Blair.
Charlottetown, P. E. Island	30.12	765.0	30.16	766.1	50.1	10.1	64	NE	15	6.7			10s			0.010	0.25	Cloudy		H. J. Cundall, C. E
Cornwall, Ontario	29.85	758.2	30.04	763.0	51.1	10.6	99	SW			1		9s			0	0	Cloudy		James Smith, M. A
Dalhousie, N. B.	30.06	763.5	30.23	767.8	45.0	7.2	72	N			2	0	0			0	0	Clear.		H. A. Johnson.
Father Point, Quebec	30.20	767.1	30.22	767.6	47.5	8.6	74	NW	1	0.4		2c	0	Calm		0	0	Clear.		J. McWilliams.
Fredericton, N. B.	30.15	765.8	30.22	767.6	55.1	12.8	56	E	7	3.1		0	0			6	0	Clear.		Prof. Harrison.
Fort Garry, Manitoba	28.93	734.8	29.73	755.1	56.8	13.8	82	SW	6	2.7		0	0			0	0	Hazy.		James Stewart.
Granton, Ontario	29.06	738.1	30.17	766.3	52.0	11.1	87	N			1	0	0			0.26	6.6	Clear.		James Grant.
Halifax, N. S.	30.00	762.0	30.13	765.3	49.0	9.4	84	N	6	2.7			10n			0.222	5.64	Cloudy		A. Allison.
Hamilton, Ontario	29.75	755.6	30.14	765.5	58.8	14.6	81	SW			1	0	0			0	0	Clear.		Geo. Dickson, B. A.
Heart's Content, N. F.																				E. Weedon.
Kingston, Ontario	29.78	756.4	30.11	764.8	54.1	12.3	76	SW	7	3.1			10ks			0.03	0.8	Cloudy		S. Woods, M. A.
Little Glace Bay, N. S.	30.11	764.8	30.15	765.8	44.1	6.7	86	SE	4	1.8		0	0			0.36	9.1	Raining		C. H. Rigby.
Montreal, Quebec	29.89	759.2	30.08	764.0	57.1	13.9	75	SW	1	0.4		1k	7ks	W		0	0	Cloudy		C. H. McLeod, C. E.
Moose Factory, Ontario	30.15	765.8	30.18	766.6	52.8	11.6	76	Calm			0	6c	0			0	0	Fair.		J. R. Nason.
Norwood, Ontario	29.38	746.2	30.07	763.8	53.5	11.9	67	NW	9	4.0		8k	0	NW		0	0	Cloudy		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.46	748.3	30.16	766.1	50.5	10.3	75	N	6	2.7		2ck	0	N		0.05	1.3	Fair.		Rev. R. Mosley.
Peterboro, Ontario	29.39	746.5	30.13	765.3	54.7	12.6	67	NW			2	0	7ks			0	0	Fair.		J. F. Jeffers, M. A.
Port Dover, Ontario	29.45	748.0	30.14	765.5	57.1	13.9	94	NW	7	3.1		5k	0	W		0.05	1.3	Fair.		H. Morgan.
Port Stanley, Ontario	29.50	749.3	30.14	765.5	58.1	14.5	82	W	4	1.8		5k	0	W		0	0	Cloudy		M. Payne.
Quebec, Quebec	29.85	758.2	30.17	766.3	55.0	12.8	74	NE			3	Haze	Haze			0	0	Hazy		Capt. Ashe, R. N.
Rockliffe, Ontario	29.60	751.8	30.06	763.5	50.0	10.0	86	Calm	0	0			8ks			0.15	3.8	Cloudy		W. H. McIntyre.
St. John, N. B.	30.00	762.0	30.16	766.1	53.0	11.7	70	NE	9	4.0		5k	0			0	0	Clearing		G. Murdock, C. E.
Saugeen, Ontario	29.47	748.5	30.10	766.8	50.1	10.1	81	NE	6	2.7		4k	0	N		0.09	2.3	Fair.		K. Stewart.
Stratford, Ontario	28.86	733.0	30.15	765.8	49.0	9.4	92	NW	5	2.2		3cs	0	NW		0.404	10.26	Fair.		C. J. MacGregor, M. A.
Sydney, C. B.	30.09	764.3	30.13	765.3	47.0	8.3	86	NE	2	0.9			10n			0.38	9.7	Cloudy		T. C. Hill, C. E.
Toronto, Ontario	29.78	756.4	30.16	766.1	53.1	11.7	75	NW	11	4.9		5k	0	N		Inap.	Inap.	Fair.		Magnetic Observatory.
Windsor, N. S.																				Prof. John E. Oram, M. A
Woodstock, Ontario	29.08	738.6	30.13	765.3	55.6	13.1	73	NW	6	2.7		1k	0	W		0.10	2.5	Clear		Professor Wolverton.
Yarmouth, N. S.	29.98	761.5	30.05	763.3	55.1	12.8	70	E	8	3.6		6k	4s	W		0.14	3.6	Cloudy		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.94	760.5	30.10	766.8	55	12.8	80		2	0.9			10n			0	0	Cloudy		John Delany.
St. Pierre, N. F., Pilophial Maritime.			30.02	762.5	46.0	7.8		SE			1					1.64	41.7			The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.09	764.3	30.17	766.8	62	16.7	51	NE	2	0.9		0	0			0	0	Clear.	
Alpena, Michigan	29.52	749.8	30.18	766.6	47	8.3	92	N	1	0.4		0	0			0.18	4.6	Clear.	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.97	735.8	30.10	764.5	64	17.8	67	E	14	6.3		8k	0	E		0	0	Cloudy	
Atlantic City, New Jersey	30.15	765.8	30.16	766.1	61	16.1	77	N	11	4.9		0	0			0.13	3.3	Clear	
Augusta, Georgia	30.00	762.0	30.20	767.1	67	19.4	64	NE	12	5.4		2cs	0	NE		0	0	Fair	
Baltimore, Maryland	30.14	765.5	30.19	766.8	62	16.7	51	N	8	3.6		0	0			0.03	0.8	Clear.	
Barnegat, New Jersey	30.12	765.0	30.14	765.5	61	16.1	71	N	12	5.4		0	0			0.09	2.3	Clear.	
Bismar k, Dakota	28.00	711.2	29.86	758.4	57	13.9	63	N	8	3.6		2c	2s	W	Calm	0.03	0.8	Fair	
Boerne, Texas	28.61	726.7	29.88	758.9	73	22.8	100	S	5	2.2		8k	0	S		0	0	Cloudy	
Boise City, Idaho	26.98	685.3	29.94	760.5	50	10.0	45	SE	2	0.9		2k	5ks	SW	SW	0	0	Fair	
Boston, Massachusetts	30.01	762.2	30.16	766.1	63	17.2	47	N	7	3.1		Haze	0	Calm		0.03	0.8	Clear	
Brackettville, Texas	28.87	733.3	29.88	758.9	74	23.3	81	E	9	4.0		0	5ks		E	0	0	Fair	
Breckenridge, Minnesota	28.82	732.0	29.79	756.7	57	13.9	94	Calm	0	0		5k	2s	W	SW	0	0	Cloudy	
Brownsville, Texas	29.96	761.0	30.01	762.2	81	27.2	78	Calm	0	0		2c	0	Calm		0	0	Clear	
Buffalo, New York	29.42	747.3	30.11	764.8	57	13.9	75	NW	8	3.6		7k	2s	W	W	0.01	0.3	Cloudy	
Burkes, Arizona					63	17.2	33	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.84	757.9	30.12	765.0	55	12.8	62	SW	7	3.1		2ck	0	W		0	0	Fair	
Cairo, Illinois	29.83	757.7	30.22	767.6	67	19.4	64	E	3	1.3		0	0			0	0	Clear	
Campo, California	27.37	695.2	29.94	760.5	36	2.2	80	SW	3	1.3		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	64	17.8	100	NE	19	8.5			10s		N	2.46	62.5	Cloudy	
Cape Henry, Virginia	30.12	765.0	30.14	765.5	61	16.1	71	N	9	4.0		0	0			0.95	24.1	Clear.	
Cape Lookout, N. Carolina	30.11	764.8	30.12	765.0	63	17.2	83	N	20	8.9		5k	5s	NW	Calm	1.53	38.9	Cloudy	
Cape May, New Jersey	30.12	765.0	30.15	765.8	63	17.2	67	N	17	7.6		0	0			0.17	4.3	Clear.	
Castroville, Texas	29.27	743.4	29.94	760.5	79	26.1	82	Calm	0	0		0	5s		S	0.06	1.5	Fair	
Cedar Keys, Florida	30.02	762.5	30.04	763.0	78	25.6	95	NW	4	1.8		0	5s		Calm	1.58	40.1	Fair	
Charleston, South Carolina	30.07	763.8	30.13	765.3	64	17.8	83	NE	11	4.9			10s		NE	1.61	40.9	Threatening	
Charlotte, North Carolina	29.34	745.2	30.15	765.8	62	16.7	57	E	5	2.2		0	0			0	0	Clear	
Chattanooga, Tennessee	29.38	746.2	30.17	766.3	60	15.6	71	NE	12	5.4		2k	1ks	S	S	0	0	Fair	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	49	9.4	24	NW	6	2.7		0	0			0	0	Clear.	
Chicago, Illinois	29.43	747.5	30.10	764.5	61	16.1	66	SW	7	3.1		5ck	0	NW		0.01	0.3	Fair	
Chincoteague, Virginia	30.13	765.3	30.15	765.8	60	15.6	83	N	14	6.3		0	0			0.28	7.1	Clear.	
Cincinnati, Ohio	29.59	751.6	30.24	768.1	57	13.9	78	SE	2	0.9		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.47	748.5	30.19	766.8	58	14.4	82	S	2	0.9		0	8ks		SW	0.04	1.0	Cloudy	
Coleman City, Texas	28.24	717.3	29.85	758.2	70	21.1	85	Calm	0	0			10s		S	0.06	1.5	Cloudy	
Columbus, Ohio	29.37	746.0	30.20	767.1	58	14.4	70	SE	1	0.4		0	Haze		Calm	0	0	Clear	
Concho, Texas	28.12	714.2	29.73	755.1	74	23.3	86	S	10	4.5		10k	0	S		0	0	Cloudy	
Corsicana, Texas	29.62	752.3	30.08	764.0	72	22.2	95	NE	4	1.8			10s		Calm	0.14	3.6	Cloudy	
Davenport, Iowa	29.47	748.5	30.10	764.5	63	17.2	62	S	4	1.8		0	0			0	0	Clear	
Dayton, Washington T'y					45	7.2	68	S			4	5cs	0	W		0	0	Fair	
Deadwood, Dakota	25.37	644.4			48	8.9	49	Calm	0	0		5c	0	W		0	0	Fair	
Decatur, Texas	28.92	734.6	30.05	763.3	70	21.1	90	E	7	3.1			10s		Calm	0	0	Cloudy	
Delaware Breakwater, Del.	30.14	765.5	30.16	766.1	63	17.2	72	N	30	13.4		0	0			0.09	2.3	Clear.	
Denison, Texas	29.31	744.5	30.09	764.3	66	18.9	95	SE	3	1.3			10s		Calm	0.01	0.3	Cloudy	
Denver, Colorado	24.72	627.9	29.94	760.5	55	12.8	33	S	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	29.14	740.1	30.00	762.0	62	16.7	72	SW	1	0.4		2k	2ks	SW	SW	Inap.	Inap.	Fair	
Detroit, Michigan	29.50	749.3	30.16	766.1	57	13.9	81	W	4	1.8			10s		W	0.11	2.8	Cloudy	
Dodge City, Kansas	27.31	693.7	29.49	749.0	65	18.3	84	S	16	7.2		5ck	0	S		0	0	Fair	
Dubuque, Iowa	29.37	746.0	30.05	763.3	64	17.8	68	SE	6	2.7		5ck	Haze	S	Calm	0	0	Fair	
Duluth, Minnesota	29.30	744.2	29.98	761.5	45	7.2	84	NE	16	7.2		5k	0	W		0	0	Fair	
Eagle Pass, Texas	29.22	742.2	29.92	760.0	80	26.7	78	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	30.98	764.0	30.15	765.8	50	10.0	79	NE	12	5.4		0	0			0.08	2.0	Clear.	
Edinburg, Texas					79	26.1	91	SE			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.44	747.8	30.15	765.8	61	16.1	66	W	8	3.6		0	5ks		W	0	0	Fair	
Escanaba, Michigan	29.47	748.5	30.12	765.0	55	12.8	74	E	7	3.1		2c	5ks	S	SW	Inap.	Inap.	Fair	
Florence, Arizona	28.40	721.3	30.00	762.0	69	20.6	61	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.06	636.5	30.51	774.9	47	8.3	41	E	6	2.7		0	0			0	0	Clear.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.81	706.4	29.62	752.3	48	8.9	92	NW				2cs	0	NW		0	0	Fair	
Fort Custer, Montana	26.67	677.4			56	13.3	62	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	69	20.6	75	SW	4	1.8		2cs	0	W		0	0	Fair	
Fort Elliot, Texas	26.97	685.0	29.10	739.1	69	20.6	85	SE	14	6.3			10n		SE	Inap.	Inap.	Light rain.	
Fort Gibson, Indian Ter.	29.56	750.8	30.08	764.0	69	20.6	80	SE	6	2.7		0	0			0	0	Clear	
Fort Grant, Arizona	25.22	640.6	30.02	762.5	69	20.6	5	N	8	3.6		0	0			0	0	Clear.	
Fort Griffin, Texas	28.78	731.0	30.02	762.5	70	21.1	95	Calm	0	0			10s		Calm	Inap.	Inap.	Cloudy	
Fort Keogh, Montana	27.08	687.8			59	15.0	40	NE	1	0.4		0	0			0	0	Clear	
Fort McKavett, Texas	27.78	705.6	29.62	752.3	72	22.2	55	S	8	3.6		1c	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.84	732.5	29.92	760.0	66	18.9	95	SE	11	4.9			10s		Calm	0	0	Cloudy	
Fort Stevenson, Dakota	27.99	710.9			55	12.8	68	Calm	0	0		0	0			0	0	Clear.	
Fort Verde, Arizona					50	10.0	32	SW			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.03	762.7	30.07	763.8	81	27.2	78	S	1	0.4		2c	5ks	Calm	S	Inap.	Inap.	Cloudy	
Grand Haven, Michigan	29.48	748.8	30.13	765.3	56	13.3	94	SW	10	4.5			10n		Calm	0.50	12.7	Light rain.	
Helena, Montana					46	7.8	47	S	2	0.9		5cs	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.42	747.3	30.18	766.6	64	17.8	68	N	1	0.4		0	0			0	0	Clear.	
Indianola, Texas	30.04	762.0	30.06	763.5	79	26.1	87	S	4	1.8		2k	0	Calm		0	0	Fair	
Jacksboro, Texas	28.93	734.8	30.02	762.5	72	22.2	90	SE	8	3.6			10s		SE	0	0	Cloudy	
Jacksonville, Florida	30.03	762.7	30.06	763.5	78	25.6	78	NE	12	5.4		5k	0	NE		Inap.	Inap.	Fair	
Keokuk, Iowa	29.46	748.3	30.06	763.5	64	17.8	68	S	5	2.2		1cs	0	W		0	0	Clear.	
Key West, Florida	30.06	763.5	30.09	764.3	80	26.7	74	SE	5	2.2		2k	0	SE		Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.11	764.8	30.14	765.5	60	15.6	82	NE	20	11.6		5k	0	NE		0.19	4.8	Fair	
Knoxville, Tennessee	29.10	739.1	30.19	766.8	59	15.0	68	NE	5	2.2		0	0			0.05	1.3	Clear	
La Crosse, Wisconsin	29.25	742.9	29.97	761.2	62	16.7	77	S	9	4.0		0	0			0.10	2.5	Clear	
La Mesilla, New Mexico	26.12	663.4	30.27	768.8	67	19.4	55	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.59	751.6	29.91	759.7	81	27.2	74	SE	6	2.7		1cs	0	Calm		0	0	Clear	
Leavenworth, Kansas	29.17	740.9	29.99	761.7	63	17.2	72	SE	7	3.1		0	0			0	0	Clear	
Lewiston, Idaho	29.08	738.6	29.72	754.9	49	9.4	42	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.84	757.9	30.16	766.1	64	17.8	89	Calm	0	0		0	0			0	0	Clear.	
Los Angeles, California	29.62	752.3	29.95	760.7	57	13.9	87	SE	4	1.8			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.64	752.8	30.20	767.1	62	16.7	67	NE	2	0.9		0	Sm'e		Calm	0	0	Clear.	
Lynchburg, Virginia	29.54	750.3	30.29	767.6	63	17.2	57	W	4	1.8		0	0			0.03	0.8	Clear	
Madison, Wisconsin	29.05	737.9	30.01	762.2	60	15.6	77	SW	15	6.7		5cs	2s	W	W	1.20	30.5	Cloudy	
Marquette, Michigan	29.42	747.3	30.13	765.3	47	8.3	77	N	2	0.9		5k	0	NW		0.22	5.6	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.40	721.3	30.08	764.0	75	23.9	86	S	3	1.3	.....	2k	5ks	S	S	Inap.	Inap.	Fair	
Memphis, Tennessee	29.81	757.2	30.14	765.5	67	19.4	60	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.38	746.2	30.10	764.5	59	15.0	76	SE	7	3.1	.....	5k	1ks	W	Calm	2.04	51.8	Fair	
Mobile, Alabama	30.06	763.5	30.11	764.8	74	23.3	81	N	9	4.0	.....	5ck	0	W	.....	Inap.	Inap.	Fair	
Montgomery, Alabama	29.89	759.2	30.12	765.0	71	21.7	80	N	5	2.2	.....	0	0	.....	.....	0.12	3.0	Clear	
Morgantown, West Virginia	29.22	742.2	30.22	767.6	56	13.3	75	Calm	0	0	.....	0	0	.....	.....	0.04	1.0	Clear	
Mt Washington, N H	23.93	607.8	30.29	769.4	36	2.2	80	S	10	4.5	.....	8k	8s	SW	S	0	0	Fair	
Nashville, Tennessee	29.67	753 6	30.20	767.1	65	18.3	58	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
New Haven, Connecticut	30.02	762.5	30.14	765.5	62	16.7	61	N	8	3.6	.....	5c	0	N	.....	Inap.	Inap.	Fair	
New London, Connecticut	30.09	764.3	30.14	765.5	63	17.2	57	N	5	2.2	.....	0	0	.....	.....	0.05	1.3	Clear	
New Orleans, Louisiana	30.03	762.7	30.09	764.3	78	25.6	78	NE	8	3.6	.....	5c	0	NW	.....	0.07	1.8	Fair	
Newport, Rhode Island	30.07	763.8	30.12	765.0	59.5	15.3	63	NW	12	5.4	.....	0	0	.....	.....	0.22	5.6	Clear	
New River, North Carolina	.....	.....	.....	.....	63	17.2	73	N	.....	.....	1	5cs	0	NE	.....	.....	.....	Fair	
New York, New York	29.99	761.7	30.17	766.3	61	16.1	61	NW	5	2.2	.....	5c	Haze	Calm	Calm	Inap.	Inap.	Fair	
Norfolk, Virginia	30.09	764.3	30.15	765.8	64	17.8	53	NE	12	5.4	.....	0	Haze	.....	Calm	0.46	11.7	Clear	
North Platte, Nebraska	26.96	684.8	29.41	747.0	63	17.2	75	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter	30.00	762.0	30.04	763.0	47.0	8.3	69	S	3	1.3	.....	0	5s	.....	W	0	0	Fair	
Omaha, Nebraska	28.78	731.0	29.83	757.7	67	19.4	64	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Oswego, New York	29.83	757.7	30.16	766.1	52	11.1	79	S	4	1.8	.....	.....	10n	.....	W	0 01	0.3	Light rain	
Pembina, Dakota	28.89	733.8	29.69	754.1	54	12.2	93	S	8	3.6	.....	5c	0	W	.....	0.35	8.9	Fair	
Pensacola, Florida	30.07	763.8	30.10	764.5	76	24.4	73	N	4	1.8	.....	9k	0	N	.....	0	0	Cloudy	
Philadelphia, Pennsylvania	30.12	765 0	30.17	766.3	59	15.0	65	N	9	4.0	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
Phœnix, Arizona	28.74	730.0	30.45	773.4	80	26.7	37	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.98	456.7	30.19	766.8	31	— 0.6	38	W	36	16.1	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.31	744.5	30.13	765.3	69	20.6	95	SE	6	2.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Pioche, Nevada	23.96	608.6	29.73	755.1	57	13.9	10	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.38	746.2	30.19	766.8	55	12.8	81	Calm	0	0	.....	0	2ks	.....	Calm	0	0	Clear	
Port Huron, Michigan	29.52	749.8	30.19	766.8	50	10.0	79	NE	4	1.8	.....	.....	10s	.....	W	0.12	3.0	Cloudy	
Portland, Maine	30.10	764.5	30.15	765.8	60	15.6	65	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	30.04	763.0	30.12	765.0	49	9.4	71	NW	9	4.0	.....	.....	10s	.....	W	0	0	Cloudy	
Portsmouth, North Carolina	.....	.....	.....	.....	64	17.8	78	NE	22	9.8	.....	10k	0	NE	.....	1.27	32.3	Cloudy	
Prescott, Arizona	24.77	629.2	30.13	765.3	47	8.3	34	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	85	29.4	68	S	11	4.9	.....	3c;ck	0	W;S	.....	Inap.	Inap.	Fair	
Red Bluff, California	29.53	750.0	29.88	758.9	59.0	15.0	70	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.86	758.4	30.07	763.8	80	26.7	82	SE	3	1.3	.....	2c	0	Calm	.....	0	0	Clear	
Rochester, New York	29.52	749.8	30.14	765.5	50	10.0	93	SW	4	1.8	.....	.....	10n	.....	SW	0.06	1.5	Light rain	
Roseburg, Oregon	29.57	751.1	30.14	765.5	48.5	9.2	74	NW	2	0.9	.....	.....	10ks	.....	Calm	0	0	Cloudy	
Sacramento, California	29.77	756.1	29.85	758.2	54	12.2	74	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.61	752.1	30.18	766 6	63	17.2	62	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.03	737.3	29.82	757.4	61	16.1	77	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Salt Lake City, Utah	25.45	646.4	29.78	756.4	67	19.4	9	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.38	746.2	30.05	763.3	79	26.1	82	SE	2	0.9	.....	0	5ks	.....	SE	1.14	29.0	Fair	
San Diego, California	29.91	759.7	29.98	761.5	60	15 6	88	SW	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.52	749.8	30.19	766.8	61	16.1	71	SW	5	2.2	.....	.....	10ks	.....	W	0.10	2.5	Cloudy	
Sandy Hook, New Jersey	30.11	764.8	30.14	765.5	60	15.6	71	N	17	7.6	.....	0	0	.....	.....	0.11	2.8	Clear	
San Francisco, California	29.87	758.7	29.94	760.5	52	11.1	82	SW	9	4.0	.....	0	Fog	.....	SW	0	0	Fair	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	58	14.4	48	SE	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Savannah, Georgia	30.04	763.0	30.14	765.5	65	18.3	94	NE	6	2.7	.....	.....	10n	.....	NE	0.05	1.3	Light rain	
Shreveport, Louisiana	29.91	759.7	30.12	765.0	71	21.7	85	E	4	1.8	.....	.....	10s	.....	Calm	0.01	0 3	Cloudy	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.12	765.0	30.15	765.8	62	16.7	77	N	8	3.6	.....	8k	1ks	NW	Calm	0.55	14.0	Cloudy	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.51	749.5	30.18	766.6	64	17.8	63	S	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Springfield, Massachusetts	30.05	763.3	30.18	766.6	64	17.8	58	Calm	0	0	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Stockton, Texas	26.98	685.3	29.98	761.5	73	22.8	90	S	10	4.5	.....	5cs	0	Calm	.....	0	0	Fair	
Thatcher's Island, Mass	30.12	765.0	30.18	766.6	56	13.3	87	N	14	6.3	.....	5k	0	N	.....	0.09	2.3	Fair	
Toledo, Ohio	29.47	748.5	30.15	765.8	61	16.1	71	SW	4	1.8	.....	.....	10s	.....	SW	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.49	698.2	30.04	763.0	73	22.8	17	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.61	752.1	30.10	764.5	52	11.1	54	SW	23	10.3	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.09	738.9	29.97	761.2	78	25.6	86	SE	3	1.3	.....	10k	0	S	.....	0	0	Cloudy	
Vicksburg, Mississippi	29.91	759.7	30.16	766.1	72	22.2	80	Calm	0	0	.....	2k	1s	NW	Calm	0	0	Fair	
Virginia City, Montana	24.14	613.1	29.62	752.3	49	9.4	37	SE	1	0.4	.....	.....	10ks	.....	W	0.08	2.0	Cloudy	
Visalia, California	29.48	748.8	29.84	757.9	58.5	14.7	56	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	30.06	763.5	30.17	766.3	62	16.7	56	N	6	2.7	.....	0	0	.....	.....	0.06	1.5	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	69	20.6	31	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.07	763.8	30.15	765.8	63	17.2	72	N	8	3.6	.....	2cs	0	Calm	.....	1.27	32.3	Fair	
Winnemucca, Nevada	25.50	647.7	29.86	758.4	70	10.0	39	SW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	30.06	763.5	30.10	764.5	60	15.6	60	NE	15	6.7	.....	0	0	.....	.....	0.22	5.6	Clear	
Yankton, Dakota	28.55	725.2	29.78	756.4	66	18.9	69	SE	6	2.7	.....	2ck	0	W	.....	0	0	Fair	
Yuma, Arizona	29.64	752.8	29.78	756.4	69	20.6	65	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.05	560.1	.....	.....	59.0	15.0	71	Calm	0	0	.....	5k	0	.....	.....	0.14	3.6	Fair	Thomas Herran.
Havana, Cuba, W. I	30.04	763.0	30.08	764.0	80	26.7	78	Calm	0	0	.....	.....	0	.....	.....	0	0	Clear	Chas Hasselbrink.
Kingston, Jamaica, W. I	30.03	762.7	30.04	763.0	81	27.2	80	SE	8	3.6	.....	5c	2s	SE	Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I	29.97	761.2	30.05	763.3	81.5	27.5	78	NE	6	2.7	.....	8	5s	E	E	0.08	2.0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	78	25.6	86	E	.....	.....	2	.....	8ks	.....	.....	1.150	29.21	Cloudy	C. J. Hering.
Puerto Perrio, U.S.Col'bia	29.46	748.3	30.02	762.5	76	24.4	94	S	.....	.....	1	.....	10ks	.....	.....	0.22	5.6	.....	Francesco J. Cisneros.
Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	SE	.....	.....	.....	0	6	SE	.....	0.12	3.	Cloudy	Earl Flint.
Santiago de Cuba, W. I	30.04	763.0	30.07	763.8	80	26.7	78	NW	1.2	0.5	.....	1c	0	.....	.....	0	0	.....	Robert Mason
St. Thomas, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A	29.80	756.9	29.85	758.3	30.0	— 1.1	95	NE	10	4.5	.....	3k	0	NE	.....	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m., Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,260 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,585 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft.; or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm., Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales. Owing to change of observers and instruments, the reduced pressures at Kingston, are now higher by 0.02 inch. than they have been since May 6th, 1880. Previous to Feb. 1st. 1880, the barometric observations of "James Gall" should be entirely rejected.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.08	764.0	75	23.9	86	NW	4	1.8			8		NW					Fair	
§ Navy Yard, Portsmouth, N. H.	30.15	765.8	62	16.7	83	N	4	1.8			2			0.1	3.			Fair	
Naval Hospital, Yokohama, Japan	29.93	760.2	61	16.1	88	N			3		5ks		NE	Slight	Slight			Clearing	
§ Adams, Punta Arenas, Costa Rica	29.95	760.7	78	25.6	86	Calm			0		2							Fair	
§ Alaska, Callao, Peru *	29.98	761.5	63	17.2	89	Calm			0		10					Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.94	760.5	66	18.9	84	NNW			3		10		Calm			Smooth		Cloudy	
§ Alliance, N. 38° 35', W. 67° 54'	29.89	759.2	67	19.4	100	N			3		10		N	Light	Light	Smooth	SW	Rainy	
§ Ashuelot, Shanghai, China	29.90	759.4	66	18.9	84	SSE			3		8		E	0	0	None		Cloudy	
§ Colorado, New York, N. Y.	30.13	765.3	61	16.1	77	NNE	3	1.3			5		Calm	0.02	0.5			Misty	
§ Constitution, New York, N. Y.	30.08	764.0	59	15.0	70	NNE	9	4.0			8		W					Fair	
§ Franklin, Off Navy Yard, Norfolk, Va	30.12	765.0	62	16.7	72	NNE	10	4.5			2		N	0.51	13.0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.92	760.0	56	13.3	100	SW	4.8	2.1			8		SW	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	30.09	764.3	47	8.3	100	WSW			4		10					Mod'ate		Cloudy	
§ Kearsarge, Hampton Roads, Va	30.14	765.5	63	17.2	89	NW			3		2		NE			Smooth		Clear	
§ Lackawanna, La Union, San Salvador †	30.05	763.3	79	26.1	91	Calm			0		8		W			Smooth	W	Fair	
§ Marion, Port Stanley, Falkland I'ds	30.10	764.5	41	5.0	91	NNE			6		10			Blank	Blank	Smooth		Cloudy	
§ Michigan, Erie, Pa.	30.11	764.8	60	15.6	82	WSW			2		8		SW					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.12	765.0	61	16.1	82	NE			3		8		Calm					Foggy	
§ Monocacy, Chefoo, China	29.84	757.9	68	20.0	74	SSW			1-2		0							Hazy	
§ New Hampshire, Port Royal, S. C.	30.18	766.6	65	18.3	94	S	22	9.8			10		Calm	0.64	16.3			Cloudy	
Nipsic, Leghorn, Italy	30.48	774.2	70	21.1	90	WNW			1		5					Smooth		D. clouds	
§ Onward, Callao Bay, Peru †	29.98	761.5	64	17.8	94	Calm			0		10		S			Long	W	Misty	
§ Palos, Shanghai, China	29.92	760.0	66	18.9	89	ESE			1		5		E					Fair	
§ Passaic, Washington, D. C.	30.18	766.6	61	16.1	82	Calm			0		0			0	0			Clear	
§ Pensacola, San Francisco, Cal.	29.89	759.2	53	11.7	86	SW			2		1		SW			Smooth	S	Hazy	
§ Portsmouth, Bermudas	30.07	763.8	74	23.3	95	WSW			4		10		SW			Easy	SW	Cloudy	
§ Powhatan, New York, N. Y.	30.15	765.8	58	14.4	82	NNE			3		5		N					Fair	
§ Quinnebaug, Antwerp, Belgium	29.83	757.7	61	16.1	88	NW			1		10		SW					Light rain	
§ Richmond, Shanghai, China	30.19	766.8	69	20.6	90	ENE			1		6?							Cloudy	
§ Rio Bravo, Brownsville, Texas †	30.19	766.8	76	24.4	100	SE	1	0.4			2		Calm	0	0			Fair	
§ Saratoga, Cadiz, Spain	30.06	763.5	71	21.7	66	NW			3		5		Calm	0	0			Fair	
§ Shenandoah, Montevideo, Uruguay	30.17	766.3	52	11.1	86	NNE			3		2		NNE			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.13	765.3	62	16.7	77	NNE	5	2.2			0			0	0			Clear	
Swatara, N. 9° 16' E. 103° 07' †	29.81	757.2	86	30.0	72	W			2		2		W			Smooth		Clear	
§ Tennessee, New York, N. Y.	30.14	765.5	62	16.7	77	N			6		8		Calm	0	0	Smooth		Cloudy	
§ Ticonderoga, Kobe, Japan	29.93	760.2	69	20.6	90	NNE			1		0					Smooth		Clear	
§ Trenton, Villafranca, France	29.93	760.2	72	22.2	67	ESE			3		5			0	0	None		Cloudy	
§ Vandalia, New London, Conn.	30.13	765.3	57	13.9	75	N			2		0							Clear	
§ Wabash, Boston, Mass.	30.12	765.0	61	16.1	61	N	7	3.1			2			0.025	0.64			Fair	
§ Wachusett, Sandy Point, Strait of Magellan	29.42	747.3	45	7.2	100	NE			4		10		N			Mod'ate	NE	Rainy	
Wyoming, Villafranca, France	29.95	760.7	66	18.9	74	ESE			1		2		SE			Smooth	SE	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 37° 23', W. 74° 22'	30.13	765.2	60	15.6		NNE			5		5		NE			Mod'ate	NE	Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent. N. 40° 01', W. 49° 17'	30.18	766.6	65	18.3	89	N			1		8		W	0	0	Smooth		Cloudy	
S. S. Ohio, Henry Morrison, Queenstown, Ireland †	30.15	765.8	65	18.3	89	N			3		5		N	0	0			Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains. N. 46° 47', W. 38° 03' *	30.09	764.3	68	20.0	74	S			2		10			0	0	Light	S	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, Yokohama, Japan †	29.92	760.0	64	17.8	89	NNW			4		2		N			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 38° 52', W. 174° 23' †	29.87	758.7	60	15.6	100	swtow			5–6		10n		W	Consi	d'ble	Rough	W	Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan. N. 44° 35', W. 124° 24'	30.17	766.3	48	8.9	85	W			4		8ks		W			Mod'ate	NNW	Cloudy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander. N. 35° 16', W. 120° 54' †	30.02	762.5	52	11.1		NW			2		0					Mod'ate	WNW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal. †	29.87	758.7	45	7.2		NW			3		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.93	760.2	75	23.9	95	SE			2		10		SE			Mod'ate	SSE	Cloudy	F. A. Johnston. Banneman.
§ S. S. Australia																			
§ S. S. China, W. B. Seabury.																			J. M. Lacklan.
§ S. S. City of Chester, J. M. Lacklan.																			
§ S. S. City of New York, W. B. Cobb, S. 33° 58′, E. 162° 30′.... †	29.93	760.2	64	17.8	94	SSW			3		8		Calm			Smooth	SW	Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 9° 34′, W. 85° 13′.....†	29.95	760.7	78	25.6	91	ESE			2		5		E	0	0	Mod'ate	SW	Fair	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China.....†	29.78	756.4	82	27.8	83	SW			3		8		SW	Light	Light			Squally	
§ S. S. City of Sidney, H. C. Dearborn, N. 1° 19′, W. 165° 49′....*†	29.73	755.1	82	27.8		ESE			5		5		E	0	0	Mod'ate	E	Squally	E. LeSack. F. S. Doane.
§ S. S. City of Tokio, J. Maury																			
§ S. S. Colima, R. R. Searle.																			
§ S. S. Dakota, D. E. Griffiths, Esquimalt, Vancouver I'd..... †	30.14	765.5	51	10.6	79	S			3		5		NW			Mod'ate	W	Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 10° 39′, W. 85° 32′.....†	29.95	760.7	80	26.7	91	N			3	2c		N		Heavy	Heavy	Light	S	Clear	
§ S. S. Idaho, E. Alexander, N. 38° 40′, W. 123° 27′...†	30.11	764.8	61	16.1		NNW			7		0					Heavy	NW	Clear	E. Alexander.
§ S. S. Zalandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 49° 27′, W. 68° 39′.....†	29.96	761.0	56	13.3		NNE			2		8		N	0	0			Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 40° 43′, W. 70° 28′.....†	29.87	758.7	52	11.1		N			4		8		N			Mod'ate	NE	Misty	H. N. Goulden. J. Jones.
S. S. Britanic, H. Perry																			
S. S. Celtic, B. Gleadell																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 38° 14′, W. 74° 09′.....†	30.18	766.6	65	18.3		NNE			5		1		N	0.25	6.3	Long	NE	Fine	Mehaffey.
Schr. Adele Fuller, J. Jorgensen, N. 38° 36′, W. 73° 36′.....†	30.11	764.8	61	16.1	71	N	10	4.5			0			1.02	25.9	Rough	NE	Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Monabo, Porto Rico ....†	30.09	764.3	85	29.4		E			5		2		E	0	0	Rough	SSE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 16° 10′, W. 5° 50′.....*†	30.20	767.1	70	21.1		ESE			5		8		ESE			Mod'ate	SSW; SE	Threatening	B. F. Woodbury.
Schr. Delia Hodgkins, N. 51° 25′, W. 56° 56′.....†	30.11	764.8				E			3		8		E	Light	Light	Long	E	Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 34° 28′ W. 71° 30′.....†	30.11	764.8	76	24.4		N			5		8		N	0	0	Rough	NW	Squally	W. Randall.
Iron Cross, W. Randall																			
Ship Jumná, Jas. S. Garvin, N. 42° 05′, W. 63° 00′.....	29.87	758.7	49	9.4	??	NNE			7		10		NE	10h'rs	10h'rs	Mod'ate	NE	Heavy rain	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 4, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.04	763.1	74.1	23.4	74	WNW			3		6			0	0	Cloudy	Metge.
Algiers			29.99	761.7	70.5	21.4	73	W			6		1			0	0	Very fair	Nicolas.
La Calle			29.99	761.8	72.1	22.3	81	NE			1		10			0	0	Covered	Fonfrède.
Tunis			29.96	760.9															Jacques.
Sfax			30.00	762.0															Gau.
Saida			30.02	762.4															Charon.
Tebessa			30.02	762.6	74.7	23.7	47	N			2		8			0.067	1.7	Very cloudy	Watrin.
Geriville			30.03	762.8	77.9	25.5	48	NW			2		0			0	0	Clear	Lonchamp.
Laghouat			29.98	761.4	85.6	29.8	33	SSW			1		3			0	0	Pretty fair	Herlin.
Biskra			29.98	761.6	89.2	31.8	37	NW			5		4			Inap	Inap.	Cloudy	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.23	742.5	29.76	755.9	72.3	22.4	51	SW			6		6			0.020	0.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.95	735.4	29.68	753.9	76.3	24.6	45	SSE	3.4	1.5			8			0.047	1.2		Dr. Wierzbicki.
Eperies	28.80	733.0	29.74	755.3	69.8	21.0	62	S			2		9ks			0.217	5.50		Julius Mikolik.
Gratz	28.50	723.9	29.69	754.2	73.4	23.0	59	SW			3		5			0	0		Andreas Rospini.
Hermannstadt	28.44	722.3	29.81	757.2	74.6	23.1	63	SE			2		10			0.293	7.45	Thunder-storm.	Prof. A. Gottschling.
Kremsmünster, Observatory	28.31	719.1	29.59	751.5	72.0	22.2	64	ENE			1		10			0.051	1.3		The Staff.
Lemberg	28.70	730.5	29.69	754.2	74.8	23.8	52	S			2		7			0.004	0.1		Dr. T. Stanecki.
Pola	29.74	755.5	29.85	758.3	67.3	19.6	81	S			1		10			0.228	5.8		I.R. Hydrographic Office.
Szathmar	29.40	746.8	29.85	758.1	72.0	22.2	68	W			5		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.53	750.1	29.80	756.9	73.4	23.0	58	SW			1		6			0.104	2.65		Karl Stancel.
Trieste	29.75	755.7	29.85	758.3	66.9	19.4	92	SW			1		10			0.217	5.5	Raining	P. Busin.
Vienna	28.99	736.3	29.72	754.9	70.9	21.6	60	SE			3		5			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau
Brussels	29.54	750.3	29.74	755.4	55.9	13.3	59	WNW			3	3	7		NW	0.209	5.30		Royal Observatory.
Furnes	29.83	757.7	29.85	758.3	52.3	11.3	80	NE			4		10			0.094	2.4	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE.—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 8, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru'n'tal error and temperature. Inches.	Barometer. Corrected for instru'n'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.93	760.2	30.03	762.7	47.6	8.7		N	26	11.6			6			0.060	1.52	Squally	W. Boswell.
Ardrossan	30.05	763.3	30.07	763.8	55	12.8		NNW			3		3					Blue sky	G. Carrick.
Armagh, (Observatory)	29.92	760.0	30.14	765.5	54.0	12.2		N	9	4.0			3					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.02	762.5	53.9	12.2		NW	18	8.0			5					D. clouds	John Hartnup.
Bolton (Sharples)	29.47	748.5	29.98	761.5	47.1	8.4		NNE	6	2.7			6					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.62	752.3	30.01	762.2	51.1	10.6	66	NE			2		8			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.96	761.0	29.99	761.7	83	28.3		NE			3		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.81	757.2	29.90	759.4	53.0	11.7		N			2		7					D. clouds	H. Todd.
Cardington			29.90	759.4	58.0	14.4		NE			2		5					D. clouds	John McLaren.
Chatham (School M. E.)	29.76	755.9	29.89	759.2	54.1	12.3		N			2		9k					Gloomy	Lance Crp'l Hocker, R.E.
Donaghadee	30.08	764.0	30.13	765.3	55	12.8		NNE			5		0					Blue sky	J. Mac Gowan.
Dover	29.80	756.9	29.82	757.4	63	11.7		NE			4		10					Overcast	J. Costello.
Falmouth (Observatory)	29.74	755.4	29.97	761.2	56.3	13.5		N			2		10					Overcast	The Staff.
Fort Napier, Natal	27.95	709.9	30.15	765.8	66.5	19.2		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.94	760.5	87	30.6		SE			1		8					D. clouds	
Galway (Queen's College)			30.16	766.1	54	12.2		N			4		8					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.02	762.5	30.07	763.8	69.0	20.6		W			6		4					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.81	757.9	30.04	763.0	55.1	12.8		N			2		6k					D. clouds	D. G. Maclean.
Great Yarmouth	29.85	758.2	29.86	758.4	53	11.7		NNW			3		6					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.73	755.1	29.91	759.7	53.6	12.0		N			4		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.69	754.1	29.91	759.7	52	11.1		NNE			2		8					Misty	Dr. S. E. Hoskins, F.R.S.
Helston	30.15	765.8	30.27	768.8	57	13.9		N			4	4ck				0.10	2.5	Fine	M. P. Moyle.
Holyhead	30.04	763.0	30.07	763.8	52	11.1		NNE			4		1					Blue sky	John Tilston.
Jersey	29.65	753.1	29.94	760.5	52.0	11.1		NNE			3		10					Gloomy	J. Fisher.
Kew (Observatory)	29.88	758.9	29.92	760.0	54.1	12.3		NNE	20	8.9			7					Misty	The Met'g'l Office.
Leicester (Museum)	29.68	753.9	29.93	760.2	53.6	12.0		N			2		8					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.80	756.9	29.87	758.7	71.4	21.9		E			2		4					D. clouds	A. King.
Nairn	30.02	762.5	30.11	764.8	52	11.1		NW			6		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.10	764.5	73.5	23.1		NW			2		10			Blank	Blank	Gloomy	C. S. Duncombe.
Nottingham (Observatory)	29.79	756.7	29.98	761.5	54.3	12.4		N			5		7k;ks;d		N	0.040	1.02	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.44	747.8	29.96	761.0	54.4	12.4		NNE;N			4–5		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.71	754.6	29.96	761.0	52.7	11.5		N			3		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.88	758.9	29.96	761.0	53.9	12.2		NE			2		10					Drizzling	John Merrifield.
*Roche's Point	30.08	764.0	30.19	766.8	62	16.7		NNE			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.88	758.9	30.04	763.0	53	11.7		NNE			5		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			30.05	763.3	49.5	9.7		NW	34	15.2			2					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.34	757.9	29.91	759.7	77.2	25.1		Calm			0		2					D. clouds	Serg't W. H. Lyne.
Sheffield	29.72	754.9	30.00	762.0	54.5	12.5		NE			2		8			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.10	764.5	30.13	765.3	54.7	12.6	63	NE			2		10			0	0	Overcast	Rev. F. Redford, A.M.
Stonyhurst (Observatory)			30.02	762.5	47.0	8.3		NNW	16	7.2			10					Rain & hail	Rev. S. J. Perry.
Stratfield Turgiss	29.71	754.6	29.93	760.2	53.2	11.8		NE			3–4		9					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.98	761.5	30.01	762.2	56	13.3		N			4		10					Raining	W. Newcombe.
Valencia (Observatory)	30.18	766.6	30.21	767.3	56.2	13.4		N	21	9.4			5					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony												0	1			0	0	Clear	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.18	766.6	30.22	767.6	71.3	21.8	50	SSW	8.6	3.8			8k			0.02	0.5		Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.45	773.4	50.0	10.0	81	NW			2		8k			0	0	Cloudy	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			30.07	763.8	54.0	12.2		NE			4		8k			0	0	Fine	C. Meldrum.
Mauritius (Observatory)	29.88	758.9	30.07	763.7	76.8	24.9	71	SSE	11.0	4.9		0	2			0.02	0.5	Dense fog	R. L. J. Ellery.
Melbourne (Observatory)	30.18	766.6	30.27	768.8	46.4	8.0	93	NE	6	2.7			2			0	0		J. Youngclause.
Monach Lt-house, Hebrides			30.18	766.6	49	9.4		N			4	5	5	NW		0	0		Robert Burnet.
North Unst, Shetland I's			29.94	760.5				N			6	6	4	N					

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 40° 00′, W. 37° 00′			30.18	766.6	66	18.9		E			6		4			6	ENE	Misty	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, N. 7° 42′, W. 14° 23′			29.97	761.2	82	27.8		WSW			1		5					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	67.6	19.8	88	Calm			0	1c				0.55	14.	Clear.	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	L'w'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer
Copenhagen	29.36	745.7	29.41	746.9	64.0	17.8	67	NW			2		4						
Fanöe	29.51	749.6	29.53	750.1	54.3	12.4	72	NW			6		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.02	762.4	30.06	763.5	48.0	8.9	91	SW			2		10					Foggy	
Thorshavn (Faröe)	30.05	763.3	30.09	764.2	53.1	11.7	45	NE			2		2						
Vestervig	29.41	746.9	29.50	749.3	53.4	11.9	71	WNW			4		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	L'w'r 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer
Alençon, Normal School	29.35	745.5	29.90	759.5	55.4	13	77	NE			1		8n		NE	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	29.73	755.2	29.84	758.0	58.6	14.8	93	N			1		2		NE	0	0	Slightly cld'y	Vaillant, Director.
Arras, Engineer School	29.62	752.3	29.88	758.9	48.6	8.2	86	N			2		10k;n		E	0.291	7.40	Covered	Klein, Commandant.
Avignon, Normal School	29.79	756.6	29.87	758.6	67.1	19.5	72	N			1		5		SSW	0.228	5.8	Cloudy	Giraud, Director.
Bar-sur-Seine	29.24	742.6	29.78	756.4	59.0	15.6	68	W			1		10		W	Inap.	Inap.	Covered	C. Saillard, Director.
Beauvais, Normal School	29.57	751.0	29.84	757.8	54.5	12.5	76	N			1		10		N	0.226	5.75	Covered	Frère Eugene Marie.
Besançon, Normal School	28.93	734.8	29.81	757.1	60.4	15.8	71	S			1		10		W	0.374	9.5	Covered	A. Carré, Director.
Bordeaux	29.65	753.2	29.85	758.2	57.4	14.1	86	NE			1		10	WNW	NW	0.244	6.2	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.98	736.0	29.90	759.4	60.8	16	79	SE			1		10n	SW	SW	0.55	14.	Covered	Marlot, Director.
Bourges, Normal School	29.34	745.2	29.89	759.1	55.2	12.9	94	NW			1		n		NW	0.016	0.4		M. Gence, Director.
Brest, Naval Observatory	29.71	754.6	29.95	760.8	58.6	14.8	72	N			2		8		N	0.010	0.26	Misty	Ch. de Kermaree, Dir
Caen, Normal School	29.79	756.7	29.87	758.6	53.8	12.1	86	NNW			2		10		NNW	0.024	0.6	Raining	M. Bietrix, Director.
Carcassonne, N. School	29.45	748.1	29.86	758.4	65.8	18.8	59	W			1		8		W	0.453	11.5	Very cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.49	749.0	29.80	757.0	56.8	13.8	95	W			2		10		NW	0.276	7.0	Covered	Jadot, Director
Chartres, Normal School	29.24	742.6	29.80	756.9	52.5	11.4	80	N			1		10		S	0.874	22.2	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.50	723.8	29.83	757.7	58.3	14.6	64	W			1		10			0.472	12.0		Alluard, Director.
Commercy, Normal School	28.91	734.3	29.75	755.7	60.8	16	73	W			3		k		W	0.004	0.1		Dr. Coullet, Director.
Commune de Gréasque*	28.76	730.6	29.91	759.6	64.8	18.2	71	SW			1		8		SW	0.291	7.4		L. Kina, Director.
Grenoble, Normal School	29.06	738.0	29.81	757.2	59.4	15.2	87	WNW			1		kn			0.500	12.70		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.69	754.0	29.89	759.3	60.8	16.0	50	NW			1		5		NW	0	0	Cloudy	Moullot, Director.
Le Mans, Normal School	29.54	750.3	29.85	758.1	54.3	12.4	94	NNE			2		10		N	0.091	2.3	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.93	734.9	29.84	757.8	61.3	16.3	75	SW			1		10n		W			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.85	758.1	29.95	760.7	55.8	13.2	81	N			3		5		N	0.091	2.30	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.24	742.6	29.85	758.3	55.0	12.8	95	N			1		10		NE	0.602	15.3	Raining	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.60	751.7	29.86	758.5	66.4	19.1	68	WSW			1		5		SW	0.402	10.20		E. Stephan, Director.
Mirecourt, Normal School	28.74	730.1	29.77	756.1	58.6	14.8	78	SW			1		n		SW	0.32	8.		Barbier, Director.
Mont-Louis	24.70	627.4	29.94	760.4	45.9	7.7	83	SE	9.4	4.2			6		S	0.146	3.7		M. Cave, for Dr. Fines.
Nice	29.83	757.7	29.86	758.5	67.6	19.8	76	S			2		10	W	S	0.051	1.3	Light rain	Capt. Boissière, Director.
Nismes, Normal School	29.66	753.4	29.86	758.5	66.4	19.1	64	W			1		5		W	0.32	8.	Cloudy	M. Boyer, Director.
Perpignan	29.79	756.6	29.89	759.2	61.3	16.3	67	NW	5.6	2.5			10		NW	0.224	5.7		Dr. Fines.
Pic du Midi (Plantade) H. P	22.40	568.9			29.8	—1.2							10		SW	0.461	11.7	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.82	731.9	29.87	758.7	59.0	15	82	S			2		5	S	S	0.20	5.	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	24.96	633.9			38.1	3.4	100	WSW			4		10			0.795	20.2	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	29.86	758.4	29.89	759.2	63.3	17.4	70	SW			2		10	SW	SW	0.35	9.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.75	755.6	29.84	757.8	54.1	12.3	92	N			2		10		NE	0.016	0.4	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.86	758.4	29.89	759.2	62.6	17.0	90	NNE			3		8	NNE	NNE			Raining	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.65	753.1	29.84	757.3	54.7	12.6	93	N			1		10		N	0.004	0.1	Covered	E. Renou, Director.
Tarbes, Normal School	28.85	732.8	29.93	760.3	53.6	12	72	W			1								T. Huguet, Director
Toulouse, Observatory	29.24	742.6	29.97	761.2	59.9	15.5	72	W			4		10			0.445	11.3	Covered	B. Bailland, Dir.
Tours	29.63	752.5	29.82	757.5	60.4	15.8	57	SSE			1		10		W	0.016	0.4	Covered	M. de Tastes.
Versailles, Observatory	29.32	744.6	29.81	757.2	55.0	12.8	79	N			1					0.076	1.93		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.12	739.6	29.82	757.5	60.1	15.6	73	SE			1		10			0.543	13.8	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.20	767.0	30.23	767.7	81.3	27.4										0	0		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.54	750.2			54.7	12.6	85	NNW			1		10		NNW	0.154	3.9		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.84	758.0	29.87	758.6	62.6	17.0	85	E	7.2	3.2			6			0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,2[illegible]4.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,81[illegible] ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	28.84	732.4	29.69	754.0	68.9	20.5	54	SW			6		7n	SW		0	0		Prof. Dr. Hoh.
Berlin	29.37	746.1	29.54	750.3	61.2	16.2	83	NW			4		8			1.268	32.2		Prof. Dr. Arndt.
Breslau	29.16	740.7	29.69	754.0	72.3	22.4	40	SW			3		6			0.027	0.68		Royal University Obs'y
Carlsruhe	29.29	744.0	29.71	754.5	66.0	18.9	67	SW			2		10	SW		0.268	6.8	Raining	Albert Senz.
Cassel	29.02	737.2	29.63	752.5	62.8	17.1	73	SW			2		8	W		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.37	746.1	29.74	755.3	68.9	20.5	44	WSW			2		8			Inap.	Inap		Physical Society.
Friedrichshafen	28.35	720.0	29.76	755.8	59.4	15.2	77	SW			5		10	WSW		1.193	30.3		Chief Telegrapher Wilhelm.
Hamburg	29.45	748.1	29.52	749.9	60.6	15.9	93	WNW			3		10			0.594	15.1		Dr. Reinhold Kleeman.
Kiel	29.48	748.7	29.49	749.1	61.7	16.5	74	NW			2		9			0.018	0.45		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.47	748.6	29.55	750.6	59.9	15.5	83	S			8		9			0.985	4.7		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.20	741.8	29.61	752.1	68.2	20.1	50	SW			4		7	WNW		0.874	22.2		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.38	746.2	29.60	751.9	61.5	16.4	71	SW			5		8ks	SW		0.433	11.0		Dr. Assmann.
Memel	29.50	749.4	29.55	750.5	60.4	15.8	87	SSW			4		10n					Showery	Reinbrecht & Issermann.
Munich	27.91	708.9	29.75	755.7	68.4	20.2	42	NW			2		9			0	0		Dr. C. Lang.
Neufahrwasser	29.47	748.6	29.49	749.0	59.4	15.2	87	SSW			5		10			0.236	6.0	Raining	A. Lothes.
Neustadt (Palatinate)	29.17	740.9	29.69	754.1	67.5	19.7	50	WSW			2		5	W		0	0		Reallehrer Dicknether.
Posen	29.31	744.5	29.59	751.5	70.2	21.2	47	SW			8		6			0.551	14.0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.21	742.0	29.78	756.5	66.4	19.1	54	SSW			7		10					Raining	Imp. University Observatory.
Stuttgart	28.78	730.9	29.64	752.9	65.3	18.5	47	W					10	W		0.228	5.8		Prof. Dr. Schoder.
Thorn	29.40	746.7	29.58	751.4	68.0	20.0	53	SW			5		5			0.020	0.5		Dr. Cunerth.
Weissenburg (Bavaria)	28.25	717.5	29.81	757.2	67.3	19.6	43	W	1.3	0.6		6ck		W		0	0		Reallehrer J. Hopfner.
Wustrow	29.47	748.4	29.49	749.1	60.1	15.6	83	SW			1		10s			0.028	0.7		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 430 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.8	29.94	760.4	82.4	28.0		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.47	748.5	29.52	749.7	86.4	30.2	84	S	28.5	12.7			3	S		0	0		D. clouds
Deesa	29.02	737.0	29.46	748.4	104.6	40.3	16	W	10.2	4.6			0			0	0		Misty
Bombay	29.59	751.5	29.62	752.5	86.7	30.4	70	SW	14.0	6.3			3	WNW		0.03	0.8		D. clouds
Poona (Yarrowda)	27.79	706.0	29.62	752.4	82.3	27.9	70	WSW	15.0	6.7			8	E	E	0.53	13.5		Threatening
Belgaum	27.16	689.8	29.69	754.2	64.1	23.4	80	S	15.0	6.7			9	SE	S	0	0		D. clouds
Lahore	28.65	727.8	29.34	745.4	107.3	41.8	13	Calm	1.8	0.8			0			0	0		Blue sky
Roorkee	28.45	722.7	29.30	744.1	104.9	40.5	18	NW	5.0	2.2						0	0		
Agra	28.79	731.3	29.32	744.7	104.6	40.3	19	N	3.6	1.6						0	0		
Nagpur	28.43	722.0	29.42	747.2	100.9	38.3	30	S	6.6	3.0			5		SW	0	0		D. clouds
Jubbulpore	28.10	713.7	29.39	746.4	103.7	39.8	25	NW	4.5	2.0			8			0	0		Overcast
Lucknow	29.06	738.1	29.42	747.1	101.7	38.7	40	SSE	3.1	1.4						0	0		Blue sky
Allahabad	29.07	738.4	29.36	745.9	102.0	38.9	39	NE	3.5	1.6			9	WNW		0	0		D. clouds
Patna	29.26	743.2	29.44	747.7	86.2	30.1	67	SE	3.2	1.4			8	SE	SE	0.05	1.3		D. clouds
Hazaribagh	27.53	699.2	29.53	750.0	75.8	24.3	82	NW	12.1	5.4			9		NW	0.25	6.4		Drizzling
Cuttack	29.43	747.4	29.51	749.5	87.9	31.1	75	S	6.6	3.0			7			0.12	3.0		D. clouds
Calcutta (Alipore)	29.48	748.9	29.51	749.4	74.9	23.8	93	SW	11.0	4.9			10		SW	2.07	52.6		Drizzling
Goalpara	29.13	739.9	29.54	750.2	75.6	24.2	99	ESE	10.9	4.9			10			2.81	71.4		Raining
Chittagong	29.52	749.8	29.61	752.1	81.1	27.3	91	ESE	8.9	4.0			8			0.04	1.0		D. clouds
Sibsagar	29.27	743.5	29.60	751.9	83.0	28.3	87	NE	2.2	1.0			8	W	W	0.35	8.9		D. clouds

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.45	748.1	29.85	758.3	68.7	20.4	57	SW	4.9	2.2			9			0	0		Prof. Giovanni Clodig.
Milan	29.28	743.6	29.78	756.5	64.2	17.9	38	E	4.9	2.2			8	SE		0.142	3.6		Prof. Schiaparelli.
Padua	29.72	754.9	29.83	757.7	63.9	17.7	80	N	8.7	3.9			10	S		0.012	0.3		Prof. Dott. Lorenzoni.
Moncalieri	28.88	733.6	29.78	756.3	60.1	15.6	84	N	6.9	3.1			7	NW		0.913	23.2		Prof. P. F. Denza.
Genoa	29.68	753.8	29.87	758 7	61.9	16.6	73	SE	8.1	3.6			8	SW		0.012	0.3		Prof. G. M. Garibaldi.
Mondovi	27.90	708.6	29.77	756.2	61.9	16.6	74	N			4		9			0	0		Prof. D. C. Bruno.
Pesaro	29.79	756.7	29.84	757.9	64.6	18.1	78	N	4.3	1.9			10	SSW		0.043	1.1		Prof. Luigi Guidi.
Florence	29 60	751.9	29.85	758.3	66.2	19.0	81	SW			2		10	SW		0.232	5.9		Cav. F. Meucci.
Leghorn	29.80	757.0	29.89	759.2	66.0	18.9	76	WSW	6.3	2.8			4	SSW		0.098	2.5		Prof. P. Monte.
Rome	29.72	754 8	29.89	759.2	77.9	25.5	48	S	18.6	8.3			10			0	0		Prof. P. S. Ferrari.
Lecce	29.67	753.5	29.91	759.8	85.1	29.5	24	SSW	6.3	2.8			8			0	0		Prof. C. De Giorgi.
Cosenza	29.06	738.0	29.91	759.6	83.8	28.8	65	NW	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.67	753.7	29.87	758.6	76.1	24.5	57	S			2		8	W		0	0		Prof. A. Pacinotti.
Palermo	29.71	754.6	29.96	760.9	76.1	24.5	46	E	4.3	1.9			7			0	0		Frof. G. Ciacciatore.
Syracuse	29.87	758.8	29.92	759.9	76.1	24.5	68	E	4.9	2.2			8	W		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.40	746.7	29.90	759.5	76.3	24.6	53	SW	0.7	0.3			10			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					64.5	18.1	68	NNE	6.3	2.8			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.74	755.4	29.93	760 2	66.9	19.4	79	SW	0.7	0.3			2s			0	0	Light fog	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.92	759.9	29.99	761.7	61.3	16.3	92	S	2.0	0.9		0	0			0	0	Clear	The Staff.
Wakayama	29.92	759.9	29.97	761 2	66.0	18.9	86	S	0.8	0.4			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima											0	5cs	0			0.016	0.4	Fair	R. Banda, C. E.
Guadalajara	25.11	637.5	30.11	764.7	58.6	14.8	74	Calm											Prof. L. Perez.
Guanaxuato	23.73	602.8			62.2	16.8	76	ENE	7.0	3.3		5c	1s	Calm	Calm	0	0	Clear	Vicente Fernandez.
Leon	24.46	621.2	30.55	763.2	66.9	19.4	78	W			1	2c	0	E		Inap	Inap.	Clear	Prof. M. Leal.
Mazatlan	29.70	754.4	29.96	760.9	78.8	26.0	84	N			1	8ck	0			0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.13	587.5	30.07	763.7	58.6	14.8	77	Calm	0	0			10k			0	0		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	24.01	609.9	25.94	765.4	63.9	17.7	75	N			1	1cs	0			0.004	0.1	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.47	596.0	30.29	769.3	50.2	10.1	54	Calm	0	0		1c	0			0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.26	616.3	30.15	765.9	64.6	18.1	67	E			1	2	8	W	E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpam	29.96	761.0	29.97	761.3	77.0	25.0	95	NW			1	1	1	NE	NW	0.008	0.2	Clear	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.66	575.6	30.26	768.6	56.8	13.8	79	Calm			0	1c	0	SE		0	0	Clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,490 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.80	756.8	29.80	756.8	52.0	11.1		NNW			5					0.839	21.3		
Groningen	29.60	751.8	29.65	753.2	52.9	11.6		N			5					0.803	20.4		
Helder	29.72	755.0	29.72	755.0	50.9	10.5		N			6					0.024	0.6		
Hellevoetsluis	29.75	755.6	29.75	755.6	52.2	11.2	90	NNW			4					1.252	31.8		
Utrecht	29.69	754.2	29.74	755.4	55.2	12.9	85	NW			3		8			0.236	6.0	Very cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.45	747.9	29.50	749.3	57.6	14.2	57	NNW	18.6	8.3			2			0.240	6.1		
Brönö	29.77	756.1	29.81	757.1	46.4	8.0	59	NNW	18	8			2			0.110	2.8		
Christiania	29.34	745.1	29.48	748.7	65.7	18.7	37	NNE	9	4			9			0	0		
Tromsö	29.73	755.1	29.78	756.5	39.4	4.1	72	N	9	4			9			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.10	764.4	30.30	769.7	65.8	18.8	98	E			4		8					Raining	Dr. J. A. Sampaio.
Campo Major	29.05	737.9	30.04	762.9	66.9	19.4	38	N	5.6	2.5			3			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.19	766.9	30.28	769.1	67.1	19.5	69	W	4.9	2.2			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.82	757.4	30.18	766.5	64.4	18.0	56	NNW	15.0	6.7			7			0	0		The Staff.
Ponta Delgada (Azores)	30.21	767.2	30.26	769.0	65.1	18.4	90	ESE	5.6	2.5			10			0.079	2.0	Light rain	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																				
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello																				J. F. R. de Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.93	760.3	74.7	23.7		WNW			2		2		WNW	1	WNW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.02	762.4	65.7	18.7		N			3		3		NW	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.86	758.5	83.3	28.5		SW			3		10		SW	2	SW	19	Raining	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.59	751.6	29.61	752.1	58.1	14.5	71	S	7	3			10						Capt. Sseliwerstow.
Astrakhan	29.91	759.7	29.83	757.6	82.0	27.8	42	SSW	4	2		c	9ks						Capt. Wisganow.
Barnaul	29.27	743.5	29.75	755.6	70.5	21.4	47	S	0	0			3					Light clouds	Meteorological Obs.
Dorpat	29.43	747.6	29.66	753.4	78.4	25.8	35	S	7	3		9ck							Prof. Dr. Weihrauch.
Ekaterinburg	28.71	729.2	29.66	753.3	50.0	10.0	86	NE	4	2			10					Raining	Meteorological Obs.
Irkutsk																			
Kasan	29.56	750.7	29.82	757.3	64.8	18.2	41	NNW	9	4			5k						Physical Cabinet.
Kertch	29.04	760.5	29.96	761.0	68.0	20.0	88	S	2	1			4						Lagorio.
Kieff	29.21	741.8	29.80	757.0	75.2	24.0	36	SSE	11	5		ck	6ks					Light clouds	Physical Cabinet.
Krotkowo*	29.45	747.9	29.91	759.6	63.3	17.4	51	N	9	4			3						Cand. Fatjanow.
Lugan	29.07	753.6	29.87	758.6	77.9	25.5	38	NE	9	4			3						Meteorological Obs.
Moscow	29.42	747.3	29.95	760.6	70.3	21.3	41	S	7.8	3.5			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.87	758.7	29.94	760.5	79.0	26.1	48	S	4	2			6cs;n						Kurdakof.
Nikolaievsk, on the Amoor	29.73	755.2	29.82	757.4	46.6	8.1	81	Calm	0	0		2ck							
Nukuss																			
Orenburg																			
Pekin (China)	29.59	751.6	29.73	755.2	77.7	25.4	47	SE	9	4			7n						Physical Observatory.
St. Petersburg	29.70	754.3	29.71	754.7	74.8	23.8	36	SSE	11	5			2k						Central Physical Obs.
Tashkend	28.26	717.9	29.72	755.0	85.3	29.6	46	Calm	0	0			0						Teich, A. M.
Tiflis	28.52	724.3	29.91	759.6	64.2	17.9	64	NW	13	6			10						Physical Observatory.
Vladivostock																			
Warsaw	29.26	743.3	29.67	753.6	71.1	21.7	46	SW	16	7			4k						Astronomical Obs.
Wilna	29.26	743.3	29.66	753.4	73.9	23.3	47	SSW	13	6			5					Heavy clouds	Astronomical Obs.
Yeniseisk	29.65	753.2	29.94	760.4	55.6	13.1	49	SE	2	1			10						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.79	756.6	29.89	759.3	65.8	18.8	65	SSE	5.2	2.31			3			0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	29.97	761.3	30.03	762.7	60.8	16.0	72	NW	1.0	0.43			10			0.130	3.3	Rainy	Prof. Manuel de Navernao.
Burgos, Met. Obs'y	27.04	687.2			59.0	15.0	58	W	1.2	0.56			7			0.079	2.0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.78	705.5	29.94	760.4	70.9	21.6	44	SW	6.7	3.00		0	8			0	0	Very cloudy	The Staff.
Murcia, Met. Obs'y	30.16	766.0	30.30	769.7	82.4	28.0	47	NE	3.0	1.33		2	4	E		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.21	741.8	30.11	764.7	56.1	13.4	85	NW	5.6	2.5			10			0.012	0.3	Covered	R. Gil Villanuevia, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.0	30.07	763.6	82.3	27.9	77	SE	3.6	1.6		0	0			0.031	0.8	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.3	29.92	759.6	84.3	29.1	81	SSW	1.4	2.0		3c	4kn	E	W	0.21	5.4	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	762.8	30.13	765.3	69.9	19.4	52	WNW	15.7	7.0		0	4		W	0	0		Capt. C. Pulaxon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.6	30.08	763.9	81.3	27.4	84	E	0	0		4cs	4k		E	0	0	D. clouds	Enrique Tadeo, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.65	753.1	29.69	754.1	52.2	11.2	.....	NW	.....	.....	2	.....	7	.....	.....	0.197	5.0	.....	
Umea	29.65	753.2	29.71	754.5	61.2	16.2	40	NW	.....	.....	2	.....	8	.....	.....	0	0	.....	
Hernosand	29.67	753.7	29.72	755.0	49.6	9.8	95	S	.....	.....	2	.....	10	.....	.....	0	0	.....	
Stockholm	29.39	746.6	29.57	751.1	55.8	13.2	62	ENE	.....	.....	6	.....	5	.....	.....	.....	.....	Raining	
Wisby	29.43	747.6	29.49	749.1	66.2	19.0	63	SSE	.....	.....	4	.....	7	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.49	749.1	29.58	751.3	51.4	10.8	75	NNE	10.5	4.7	.....	.....	10	.....	SE	0.087	2.20	Raining	Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 47° 02′, W. 10° 15′	.....	.....	30.11	764.9	55.8	13.2	.....	N	.....	.....	5	.....	10	.....	.....	.....	.....	.....	Overcast	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.41	721.7	29.82	757.5	60.1	15.6	65	S	.....	.....	2	.....	10	.....	.....	0.413	10.5	Covered	The Observatory.
Zurich	28.20	716.2	29.83	757.6	55.8	13.2	89	W	.....	.....	2	.....	9	.....	.....	0.709	18.0	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —4.3 mm.; Thermometer, —3.7 Cent. Relative Humidity, +9 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.96	761.0	79.7	26.5	43	SE	4	2.0	.....	.....	2	.....	NE	6	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.98	761.6	79.2	26.2	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.98	761.5	77.4	25.2	70	WNW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	55.0	12.8	.....	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	30.21	767.3	30.27	768.8	56.8	13.8	54	NE	9	4.0	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30.11	764.8	30.15	765.8	48.3	9.1	84	NE	15	6.7	.....	0	5s	.....	.....	0	0	Fair	H. J. Cundall, C. E
Cornwall, Ontario	29.99	761.7	30.18	766.6	54.6	12.6	95	W	.....	.....	1	5cs	0	.....	.....	0.176	4.47	Fair	James Smith, M. A.
Dalhousie, N. B.	30.12	765.0	30.29	769.4	50.0	10.0	60	W	.....	.....	1	0	1s	.....	.....	0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.29	769.4	30.31	769.9	54.6	12.6	47	SE	5	2.2	.....	4k	0	Calm	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.21	767.3	30.28	769.1	55.9	13.3	48	NE	6	2.7	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	28.93	734.8	29.74	755.4	54.0	12.2	93	NE	5	2.2	.....	0	5ks	.....	.....	0.050	1.27	Cloudy	James Stewart.
Granton, Ontario	29.04	737.6	30.13	765.3	55.0	12.8	87	SE	.....	.....	1	0	0	.....	.....	0.21	5.3	Clear	James Grant.
Halifax, N. S.	30.01	762.2	30.14	765.5	55.0	12.8	68	NE	11	4.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	A. Allison.
Hamilton, Ontario	29.84	757.9	30.24	768.1	53.5	11.9	77	NE	.....	.....	1	10cs	0	N	.....	0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.88	758.9	30.22	767.6	54.0	12.2	77	E	3	1.3	.....	1ck	0	SE	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.90	759.4	29.94	760.5	43.1	6.2	94	NE	8	3.6	.....	10n	.....	.....	.....	0.48	12.2	Misty	C. H. Rigby.
Montreal, Quebec	30.03	762.7	30.28	767.8	56.2	13.4	79	NW	3	1.3	.....	1k	8ks	E	.....	0.06	1.8	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.98	761.5	30.01	762.2	63.5	17.5	48	SW	.....	.....	1	5c	0	.....	.....	0	0	Fair	J. R. Nason.
Norwood, Ontario	29.54	750.3	30.28	767.8	51.3	10.7	88	N	1	0.4	.....	10k	0	.....	.....	0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.51	749.5	30.21	767.3	50.5	10.3	79	SE	9	4.0	.....	5k	5ks	SW	.....	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.51	749.5	30.26	768.6	56.7	13.7	87	Calm	.....	.....	0	9k	0	.....	.....	0	0	Cloudy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.53	750.0	30.22	767.6	56.1	13.4	94	E	7	3.1	.....	6k	0	W	.....	0.14	3.6	Fair	H. Morgan.
Port Stanley, Ontario	29.55	750.6	30.19	766.8	58.1	14.5	88	E	12	5.4	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy	M. Payne.
Quebec, Quebec	29.96	761.0	30.28	769.1	52.0	11.1	93	E	.....	.....	1	.....	10n	.....	.....	0.14	3.6	Light rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.77	756.1	30.24	768.1	39.3	4.1	91	Calm	0	0	.....	.....	Fog	.....	.....	0	0	Foggy	W. H. McIntyre.
St. John, N. B.	30.04	763.0	30.20	767.1	51.0	10.6	65	N	12	5.4	.....	1c	0	.....	.....	0	0	Fair	G. Murdock, C. E.
Saugeen, Ontario	29.45	748.0	30.16	766.1	50.1	10.1	92	SE	12	5.4	.....	.....	10ks	.....	.....	0.13	3.3	Light rain	R. Stewart.
Stratford, Ontario	28.93	734.8	30.21	767.3	49.9	9.9	93	SE	4	1.8	.....	.....	10s	.....	.....	0.242	6.15	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	29.93	760.2	29.97	761.2	44.5	6.9	98	N	16	7.2	.....	.....	10n	.....	.....	0.26	6.6	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.87	758.7	30.26	768.6	51.9	11.1	75	NE	2	0.9	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.13	739.9	30.20	767.1	53.7	12.1	92	E	7	3.1	.....	.....	10s	.....	.....	0.21	5.3	Cloudy	Professor Wolverton.
Yarmouth, N. S.	30.12	765.0	30.20	767.1	55.6	13.1	67	N	5	2.2	.....	2ck	0	W	.....	0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.73	755.1	29.98	761.5	47	8.3	100	SE	4	1.8	.....	.....	10n	.....	.....	0.10	2.5	Cloudy	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	29.80	756.9	42.8	6.0	.....	SE	.....	.....	3	.....	.....	.....	.....	0.24	6.1	.....	The Commandant
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	30.19	766.8	30.28	769.1	62	16.7	51	E	4	1.8		0	0			Inap.	Inap.	Clear	
Alpena, Michigan	29.41	747.0	30.05	763.3	56	13.3	87	S	10	4.5			10s		S	0.08	2.0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.06	738.1	30.20	767.1	65	18.3	58	E	12	5.4		1c	0	Calm		0	0	Clear	
Atlantic City, New Jersey	30.25	768.3	30.26	768.6	61	16.1	77	NW	7	3.1		Haze	0	Calm		0	0	Clear	
Augusta, Georgia	30.10	764.5	30.30	769.6	69	20.6	65	NE	2	0.9		5cs	0	NW		0	0	Fair	
Baltimore, Maryland	30.23	767.8	30.28	769.1	65	18.3	63	NE	6	2.7		0	0			0.13	3.3	Clear	
Barnegat, New Jersey	30.22	767.6	30.24	768.1	65	18.3	68	N	12	5.4		0	Haze		Calm	0	0	Hazy	
Bismarck, Dakota	27.81	706.4	29.67	753.6	59	15.0	70	NE	25	11.2		0	0			0.15	3.8	Clear	
Boerne, Texas	28.54	724.9	29.81	757.2	72	22.2	90	S	7	3.1		5k	0	S		0	0	Cloudy	
Boise City, Idaho	27.20	690.9	30.06	763.5	43	6.1	59	NW	4	1.8		2k	0	Calm		0	0	Fair	
Boston, Massachusetts	30.09	764.3	30.24	768.1	62	16.7	72	E	3	1.3		Haze	0	Calm		0	0	Dense haze	
Brackettville, Texas	28.80	731.5	29.81	757.2	75	23.9	81	E	12	5.4		0	0			0	0	Clear	
Breckenridge, Minnesota	28.52	724.4	29.45	748.0	62	16.7	100	SE	22	9.8			10s		SE	0.68	17.3	Cloudy	
Brownsville, Texas	29.92	760.0	29.97	761.2	83	28.3	87	SE	3	1.3		5cs	0	Calm		0	0	Fair	
Buffalo, New York	29.53	750.0	30.23	767.8	56	13.5	75	SW	4	1.8			10s		W	0	0	Cloudy	
Burkes, Arizona					77	25.0	25	Calm			0	2ck	5s	W	W	0	0	Cloudy	
Burlington, Vermont	29.96	761.0	30.25	768.3	57	13.9	63	N	5	2.2		0	2ks		N	Inap.	Inap.	Fair	
Cairo, Illinois	29.72	754.9	30.10	764.5	66	18.9	69	S	6	2.7			10s		Calm	0	0	Cloudy	
Campo, California	27.37	695.2	29.94	760.5	32	0.0	79	SE	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	67	19.4	69	NE	12	5.4		0	0			0	0	Clear	
Cape Henry, Virginia	30.26	768.6	30.27	768.8	63	17.2	72	SW	5	2.2		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.24	768.1	30.26	768.6	68	20.0	56	NE	21	9.4		0	0			0	0	Clear	
Cape May, New Jersey	30.22	767.6	30.25	768.3	64	17.8	72	NE	6	2.7		0	0			0	0	Clear	
Castroville, Texas	29.20	741.7	29.88	758.9	77	25.0	77	S	4	1.8			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.11	764.8	30.13	765.3	74	23.3	86	NE	15	6.7		0	0			2.22	56.4	Clear	
Charleston, South Carolina	30.18	766.6	30.24	768.1	70	21.1	70	NE	12	5.4		0	0			0	0	Clear	
Charlotte, North Carolina	29.43	747.5	30.23	767.8	66	18.9	45	E	3	1.3		0	Sm'e		Calm	0	0	Clear	
Chattanooga, Tennessee	29.38	746.2	30.16	766.1	69	20.6	65	SE	6	2.7		1c	0	Calm		0	0	Clear	
Cheyenne, Wyoming	23.80	604.5	29.74	755.4	66	18.9	11	SW	12	5.4		0	0			0	0	Clear	
Chicago, Illinois	29.31	744.5	29.98	761.5	64	17.8	73	SW	10	4.5			10n		Calm	0.05	1.3	Light rain	
Chincoteague, Virginia	30.24	768.1	30.26	768.6	64	17.8	87	S	4	1.8		Haze	Haze	Calm	Calm	0	0	Hazy	
Cincinnati, Ohio	29.52	749.8	30.17	766.3	63	17.2	69	SE	4	1.8		7k	Sm'e	Calm	Calm	0	0	Fair	
Cleveland, Ohio	29.46	748.3	30.18	766.6	60.5	15.8	76	SE	7	3.1		5cs;hze	Fog	W		0	0	Fair	
Coleman City, Texas	28.15	715.0	29.74	755.4	73	22.8	76	S	9	4.0		0	0			0	0	Clear	
Columbus, Ohio	29.36	745.7	30.19	766.8	62	16.7	67	SE	1	0.4		0	Sm'e		Calm	0	0	Smoky	
Concho, Texas	28.03	711.9	29.62	752.3	75	23.9	68	S	12	5.4		0	0			0	0	Clear	
Corsicana, Texas	29.54	750.3	29.99	761.7	75	23.9	86	S	12	5.4		0	0			0	0	Clear	
Davenport, Iowa	29.32	744.7	29.94	760.5	60	15.6	94	SE	27	12.1			10n		Calm	3.15	80.0	Heavy rain	
Dayton, Washington T'y					43	6.1	66	S			2	8c	0	SW		0	0	Fair	
Deadwood, Dakota	25.11	637.8			56	13.3	87	SW	4	1.8			Fog		Calm	0	0	Foggy	
Decatur, Texas	28.76	730.5	29.87	758.7	75	23.9	86	SE	16	7.2		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.24	768.1	30.26	768.6	63	17.2	78	NE	15	6.7		0	0			0	0	Clear	
Denison, Texas	29.14	740.1	29.89	759.2	75	23.9	90	S	8	3.6		0	0			Inap.	Inap.	Clear	
Denver, Colorado	24.56	623.8	29.78	756.4	65	18.3	14	SW	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	28.84	732.5	29.67	753.6	68	20.0	79	SE	6	2.7			10s		SE	0	0	Cloudy	
Detroit, Michigan	29.46	748.3	30.12	765.0	61	16.1	82	S	3	1.3			10s		Calm	Inap.	Inap.	Cloudy	
Dodge City, Kansas	27.09	688.1	29.21	741.9	72	22.2	67	SW	10	4.5		0	0			0	0	Clear	
Dubuque, Iowa	29.12	739.6	29.80	756.9	63	17.2	72	SE	20	8.9			10s		SE	2.90	73.7	Clearing	
Duluth, Minnesota	29.13	739.9	29.80	756.9	45	7.2	92	N	3	1.3			10n		Calm	Inap.	Inap.	Light rain	
Eagle Pass, Texas	29.14	740.1	29.83	757.7	82	27.8	67	SE	4	1.8		0	0			0	0	Clear	
Eastport, Maine	30.16	766.1	30.23	767.8	52	11.1	60	N	10	4.5		0	8ks		SW	0	0	Cloudy	
Edinburg, Texas					82	27.8	83	SE			1	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.40	746.7	30.10	764.5	62	16.7	67	SE	2	0.9			10s		Calm	0	0	Cloudy	
Escanaba, Michigan	29.25	742.9	29.88	758.9	60	15.6	82	S	7	3.1		8c	0	NW		0.01	0.3	Fair	
Florence, Arizona	28.40	721.3	30.00	762.0	70	21.1	61	N	1	0.4			10ks		S	0	0	Cloudy	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	45	7.2	53	E	3	1.3		2cs	0	Calm		0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.71	703.8	29.48	748.8	52	11.1	93	NE	4	1.8			10s		NE	0.47	11.9	Cloudy	
Fort Custer, Montana	26.62	676.1			56	13.3	74	NW	3	1.3		5k	0	W		0	0	Fair	
Fort Davis, Texas	25.21	640.3	30.17	766.3	72	22.2	54	SW	3	1.3		0	0			0.15	3.8	Clear	
Fort Elliot, Texas	26.75	679.4	28.84	732.5	72	22.2	71	S	20	8.9		0	0			0.02	0.5	Clear	
Fort Gibson, Indian Ter	29.35	745.5	29.86	758.4	74	23.3	72	SE	16	7.2			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.24	641.1	30.04	763.0	71	21.7	11	NW	2	0.9		0	5s		W	0	0	Fair	
Fort Griffin, Texas	28.63	727.2	29.84	757.9	70	21.1	85	S	14	6.3		0	0			0	0	Clear	
Fort Keogh, Montana	27.05	687.1			57	13.9	76	N	6	2.7			10s		Calm	0.50	12.7	Cloudy	
Fort McKavett, Texas	27.70	703.6	29.54	750.3	72	22.2	80	S	9	4.0		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.63	727.2	29.68	753.9	75	23.9	90	S	16	7.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.88	708.1			55	12.8	74	NE	16	7.2		0	0			0.06	1.5	Clear	
Fort Verde, Arizona					53	11.7	54	S			2		10s		S	0	0	Cloudy	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	81	27.2	78	S	9	4.0		0	8ks		S	0	0	Cloudy	
Grand Haven, Michigan	29.32	744.7	29.95	760.7	65	18.3	63	S	22	9.8			10s		Calm	Inap.	Inap.	Cloudy	
Helena, Montana					45	7.2	61	SW	8	3.6			10n		Calm	Inap.	Inap	Light rain	
Henrietta, Texas																			
Indianapolis, Indiana	29.34	745.2	30.10	764.5	63	17.2	62	S	6	2.7			10s		Calm	0	0	Cloudy	
Indianola, Texas	29.99	761.7	30.02	762.5	83	28.3	71	S	8	3.6		1k	0	Calm		0	0	Clear	
Jacksboro, Texas	28.78	731.0	29.85	758.2	75	23.9	77	SE	10	4.5		0	0			0	0	Clear	
Jacksonville, Florida	30.15	765.8	30.17	766.3	77	25.0	61	NE	12	5.4		5k	0	NE		0	0	Fair	
Keokuk, Iowa	29.19	741.4	29.78	756.4	65	18.3	78	S	13	5.8			10n		S	0.04	1.0	Light rain	
Key West, Florida	30.06	763.5	30.09	764.3	81	27.2	74	SE	5	2.2		2k	0	Calm		0	0	Fair	
Kittyhawk, North Carolina	30.28	769.1	30.30	769.6	64	17.8	78	NE	6	2.7		0	Haze		Calm	0	0	Clear	
Knoxville, Tennessee	29.21	741.9	30.20	767.1	64	17.8	65	NE	2	0.9		8cs	0	Calm		0	0	Fair	
La Crosse, Wisconsin	29.05	737.9	29.75	755.6	64	17.8	78	S	20	8.9			10s		S	0.76	19.3	Cloudy	
La Mesilla, New Mexico	26.05	661.7	30.20	767.1	62	16.7	36	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.51	749.5	29.83	757.7	82	27.8	75	SE	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	28.86	733.0	29.65	753.1	70	21.1	75	S	18	8.0		2k	0	SW		0.13	3.3	Clear	
Lewiston, Idaho	29.32	744.7	29.98	761.5	45	7.2	48	E	2	0.9		0	0			0	0	Clear	
Little Rock, Arkansas	29.72	754.9	30.03	762.7	68	20.0	84	SE	2	0.9			10ks		SW	0	0	Cloudy	
Los Angeles, California	29.64	752.8	29.98	761.5	55	12.8	87	W	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.58	751.3	30.13	765.3	65	18.3	63	SE	4	1.8		9c	Sm'e	Calm	Calm	0	0	Fair	
Lynchburg, Virginia	29.60	751.8	30.28	769.1	63	17.2	62	N	1	0.4		0	Haze			0	0	Clear	
Madison, Wisconsin	28.87	733.3	29.82	757.4	62	16.7	83	SE	16	7.2		8cs	0	W		1.03	26.2	Fair	
Marquette, Michigan	29.16	740.7	29.84	757.9	61	16.1	77	S	4	1.8		5c	0	SE		0.02	0.5	Fair	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.32	719.3	30.00	762.0	76	24.4	77	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.74	755.4	30.07	763.8	67	19.4	64	SE	10	4.5	.....	10cs	0	NE	.....	0	0	Cloudy	
Milwaukee, Wisconsin	29.16	740.7	29.87	758.7	63	17.2	78	S	26	11.6	.....	1cs	8s	Calm	SW	0.30	7.6	Cloudy	
Mobile, Alabama	30.07	763.8	30.11	764.8	77	25.0	77	E	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.95	760.7	30.18	766.6	73	22.8	85	SE	10	4.5	.....	2k	0	SE	.....	0	0	Clear	
Morgantown, West Virginia	29.26	743.2	30.24	768.1	59	15.0	76	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt. Washington, N. H.	23.98	609.1	30.34	770.6	35	1.7	70	N	7	3.1	.....	8k	0	N	.....	0.33	8.4	Fair	
Nashville, Tennessee	29.62	752.3	30.15	765.8	70	21.1	52	E	1	0.4	.....	1c	0	Calm	.....	0	0	Clear	
New Haven, Connecticut	30.13	765.3	30.24	768.1	65	18.3	58	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.20	767.1	30.25	768.3	62	16.7	77	S	4	1.8	.....	1k	0	Calm	.....	0	0	Clear	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	80	26.7	74	E	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Newport, Rhode Island	30.20	767.1	30.25	768.3	60	15.6	77	SW	6	2.7	.....	5k	0	SW	.....	0	0	Fair	
New River, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
New York, New York	30.09	764.3	30.27	768.8	62	16.7	61	NW	6	2.7	.....	2ck	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.22	767.6	30.28	769.1	67	19.4	60	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	26.66	677.2	29.07	738.4	62	16.7	97	NW	7	3.1	.....	.....	Fog	.....	Calm	0	0	Foggy	
Olympia, Washington Ter.	30.17	766.3	30.21	767.3	45	7.2	84	S	3	1.3	.....	0	2s	.....	Calm	Inap.	Inap.	Clear	
Omaha, Nebraska	28.44	722.4	29.45	748.0	75	23.9	60	SE	15	6.7	.....	0	0	.....	.....	0.01	0.3	Clear	
Oswego, New York	29.97	761.2	30.30	769.6	56	13.3	69	S	4	1.8	.....	2c	0	W	.....	0.02	0.5	Fair	
Pembina, Dakota	28.87	733.3	29.67	753.6	55	12.8	81	S	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pensacola, Florida	30.00	764.3	30.12	765.0	77	25.0	82	E	14	6.3	.....	.....	10ks	.....	SE	0	0	Cloudy	
Philadelphia, Pennsylvania	30.23	767.8	30.28	769.1	59	15.0	59	NE	11	4.9	.....	0	Haze	.....	Calm	0.13	3.3	Clear	
Phœnix, Arizona	28.76	730.5	30.46	773.7	80	26.7	51	E	4	1.8	.....	5ck	5s	W	Calm	0	0	Cloudy	
Pike's Peak, Colorado	17.79	452.9	30.00	762.0	29	— 1.7	67	SW	32	14.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.16	740.7	29.96	761.0	77	25.0	87	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.94	608.1	29.71	754.6	53	11.7	14	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.41	747.0	30.22	767.6	56	13.3	81	Calm	0	0	.....	2c	Fog	Calm	.....	0.05	1.3	Clearing	
Port Huron, Michigan	29.46	748.3	30.12	765.0	59	15.0	76	SE	9	4.0	.....	10cs	0	Calm	.....	0	0	Cloudy	
Portland, Maine	30.20	767.1	30.25	768.3	59	15.0	65	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	30.23	767.8	30.30	769.6	48	8.9	93	SE	6	2.7	.....	.....	10n	.....	SW	0.05	1.3	Light rain	
Portsmouth, North Carolina	.....	.....	.....	.....	68	20.0	65	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.71	627.6	30.07	763.8	64	17.8	4	S	12	5.4	.....	10c	0	SW	.....	0	0	Cloudy	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	76	24.4	73	NE	16	7.2	.....	2k;ck	0	Calm;NE	.....	0.74	18.8	Fair	
Red Bluff, California	29.76	755.9	30.12	765.0	57.5	14.2	39	NW	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.78	756.4	29.99	761.7	81	27.2	78	SE	8	3.6	.....	2c	0	Calm	.....	0	0	Clear	
Rochester, New York	29.64	752.8	30.26	768.6	53	11.7	67	SW	4	1.8	.....	9cs	0	W	.....	Inap.	Inap.	Cloudy	
Roseburg, Oregon	29.77	756.1	30.36	771.1	46	7.8	84	Calm	0	0	.....	.....	10n	.....	Calm	0.02	0.5	Light rain	
Sacramento, California	29.96	761.0	30.04	763.0	61	16.1	35	N	16	7.2	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.38	746.2	29.94	760.5	65	18.3	68	S	18	8.0	.....	.....	10n	.....	S	Inap	Inap.	Light rain	
St. Paul, Minnesota	28.86	733.0	29.65	753.1	63	17.2	89	SE	18	8.0	.....	.....	10n	.....	SE	0.27	6.9	Light rain	
Salt Lake City, Utah	25.47	646.9	29.80	756.9	58	14.4	37	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
San Antonio, Texas	29.30	744.2	29.97	761.2	80	26.7	78	S	2	0.9	.....	.....	10s	.....	S	0	0	Cloudy	
San Diego, California	29.92	760.0	29.99	761.7	59	15.0	76	N	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.50	749.3	30.16	766.1	63	17.2	72	S	9	4.0	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.23	767.8	30.26	768.6	60	15.6	60	NE	13	5.8	.....	0	0	.....	.....	0	0	Clear	
San Francisco, California	30.02	762.5	30.09	764.3	52	11.1	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.25	590.5	29.79	756.7	58	14.4	7	E	5	2.2	.....	0	Sm'e	.....	Calm	0	0	Clear	
Savannah, Georgia	30.15	765.8	30.24	768.1	73	22.8	63	NE	6	2.7	.....	1c	0	Calm	.....	Inap.	Inap.	Clear	
Shreveport, Louisiana	29.81	757.2	30.02	762.5	75	23.9	77	E	6	2.7	.....	0	2s	.....	Calm	0	0	Fair	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.24	768.1	30.27	768.8	70	21.1	53	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.30	744.2	29.96	761.0	63	17.2	72	SE	10	4.5	.....	.....	10s	.....	W	0	0	Cloudy	
Springfield, Massachusetts	30.13	765.3	30.26	768.6	62	16.7	56	N	4	1.8	.....	0	0	.....	.....	0.21	5.3	Clear	
Stockton, Texas	26.93	684.0	29.93*	760.2	73	22.8	59	S	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass.	30.20	767.1	30.25	768.3	59	15.0	88	E	7	3.1	.....	Haze	2s	.....	E	0	0	Fair	
Toledo, Ohio	29.40	746.7	30.07	763.8	64	17.8	68	SE	8	3.6	.....	8cs	0	SE	.....	0	0	Cloudy	
Tucson, Arizona	27.48	698.0	30.02	762.5	74	23.3	29	SW	2	0.9	.....	.....	8s	.....	W	0	0	Cloudy	
Umatilla, Oregon	29.81	757.2	30.31	769.9	48	8.9	78	W	11	4.9	.....	0	5s	.....	N	0	0	Fair	
Uvalde, Texas	29.01	736.8	29.79	756.7	75	23.9	86	Calm	0	0	.....	2ck	0	Calm	.....	0	0	Fair	
Vicksburg, Mississippi	29.84	757.9	30.10	764.5	70	21.1	75	SE	5	2.2	.....	5k	0	W	.....	0	0	Fair	
Virginia City, Montana	24.11	612.4	29.59	751.6	39	3.9	91	Calm	0	0	.....	.....	10n	.....	Calm	0.19	4.8	Light rain	
Visalia, California	29.59	751.6	29.96	761.0	54.5	12.5	52	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.17	766.3	30.28	769.1	66	18.9	69	NW	6	2.7	.....	1k	Haze	N	Calm	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	77	25.0	22	NW	.....	.....	1	5k	0	Calm	.....	0	0	Fair	
Wilmington, North Carolina	30.20	767.1	30.28	769.1	69	20.6	56	E	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.66	651.8	30.02	762.5	42	5.6	42	SW	6	2.7	.....	8k	0	SW	.....	0	0	Cloudy	
Wood's Holl, Massachusetts	30.21	767.3	30.24	768.1	60	15.6	82	W	3	1.3	.....	10ck	0	NW	.....	0	0	Cloudy	
Yankton, Dakota	28.24	717.3	29.41	747.0	79	26.1	70	S	11	4.9	.....	5k	0	SW	.....	0	0	Fair	
Yuma, Arizona	29.64	752.8	29.78	756.4	77	25.0	18	W	2	0.9	.....	0	5ks	.....	SW	0	0	Fair	
SUB-SERIES.																			
Bogota, U. S. Colombia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.11	2.8	.....	Thomas Herran.
§Havana, Cuba, W. I.	30.04	763.0	30.09	764.3	80	26.7	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
§Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	81	27.2	80	Calm	0	0	.....	5c	2ks	.....	Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.95	760.7	30.03	762.7	81	27.2	79	NE	3	1.3	.....	0	2cs	.....	NE	0	0	Clear	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	762.2	30.01	762.2	82	27.8	83	E	.....	.....	2	3c	5k	E	.....	0.580	14.73	Fair	C. J. Hering.
Puerto Porrio, U.S.Col'bia ‖	29.42	747.3	29.98	761.5	83	28.3	85	Calm	.....	.....	0	2cs	4cs;ks	.....	.....	0	0	.....	Francesco J. Cisneros.
§Rivas, Nicaragua	.....	.....	.....	.....	77	25	.....	NE	.....	.....	.....	4ck	6	SW	NE	0.20	5.	Partly cov'd	Earl Flint.
Santiago de Cuba, W. I.	30.03	762.7	30.06	763.5	81	27.2	74	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Robert Mason
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	29.84	757.9	29.89	759.2	30.5	— 0.8	95	NE	8	3.6	.....	2c	1s	NE	NE	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft, or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales. *Owing to change of observers and instruments, the reduced pressures at Kingston, are now higher by 0.02 inch, than they have been since May 6th, 1880. Previous to Feb. 1st, 1880, the barometric observations of "James Gall" should be entirely rejected.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.15	765.8	79	26.1	82	E	18	8.0			8d		E					Fair	
§Navy Yard, Portsmouth, N. H.	30.24	768.1	60	15.6	71	ESE	3	1.3			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.95	760.7	65.5	18.6	92	Calm			0		0			0	0			Clear	
§Adams, Punta Arenas, Costa Rica	29.93	760.2	78	25.6	86	E			2		8		E					Cloudy	
§Alaska, Callao, Peru *	29.95	760.7	61	16.1	94	Calm			0		10					Long	SW	Cloudy	
§Alert, Yokohama, Japan	29.88	758.9	69	20.6	81	SW			1		2		Calm	0	0	Smooth		Clear	
§Alliance, N. 38° 14', W. 66° 14'	30.08	764.0	65	18.3	89	N			6		10		N	Light	Light	Mod'ate	NNE	Drizzling	
§Ashuelot, Shanghai, China	29.92	760.0	67	19.4	95	E			1		2		E	0	0	None		Fair	
§Colorado, New York, N. Y.	30.24	768.1	60	15.6	82	NE	3	1.3			0			0	0			Hazy	
§Constitution, New York, N. Y.	30.23	767.8	65	18.3	73	SSW	3	1.3			2		Calm					Fair	
§Franklin, Off Navy Yard, Norfolk, Va	30.26	768.6	62	16.7	77	WSW	6	2.7			0			0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal.	30.04	763.0	55	12.8	100	SW	1.2	0.5			1		SW	0	0			Clear	
§Jamestown, Sitka, Alaska *	29.94	760.5	49	9.4	93	SE			1		10					Mod'ate		Cloudy	
§Kearsarge, Hampton Roads, Va	30.27	768.8	67	19.4	69	WSW			4		0					Smooth		Clear	
§Lackawana, La Union, San Salvador †	30.06	763.5	78	25.6	95	SSW			1		5		SSW					Fair	
§Marion, Port Stanley, Falkland I'ds	29.69	754.1	45	7.2	100	WNW			6		10			Blank	Blank	Smooth		Cloudy	
§Michigan, Erie, Pa.	30.18	766.6	58	14.4	88	SE			1		10							Cloudy	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.25	768.3	60	15.6	82	NE			2		2							Fair	
§Monocacy, Chefoo, China	29.90	759.4	66	18.9	68	SSE			2–3		0							Hazy	
§New Hampshire, Port Royal, S. C.	30.21	767.3	71	21.7	71	NE	20	8.9			2		Calm	0	0			Clear	
§Onward, Callao Bay, Peru †	29.99	761.7	62	16.7	88	ESE			1		10					Long	W	Cloudy	
§Palos, Shanghai, China	29.76	755.9	66	18.9	100	SSE			1		10							Cloudy	
§Passaic, Washington, D. C.	30.29	769.4	67	19.4	74	N			2		5		NW	0	0			Fair	
§Pensacola, San Francisco, Cal.	30.00	762.0	51	10.6	86	Calm			0		0					Smooth	S	Hazy	
§Portsmouth, N. 32° 40', W. 62° 44'	30.10	764.5	72	22.2	100	SSW			4		10		SW			Mod'ate	SSW	Cloudy	
§Powhatan, New York, N. Y.	30.25	768.3	61	16.1	77	NNE			2		2		NW					Clear	
§Quinnebaug, Antwerp, Belgium	29.72	754.9	56	13.3	81	N			3		10		N					Cloudy	
§Richmond, Shanghai, China	29.91	759.7	66	18.9	94	ESE			2		8?			0	0			Clear	
§Rio Bravo, Brownsville, Texas †	30.16	766.1	81	27.2	91	SE	1	0.4			8		SE	0	0			Fair	
§Saratoga, Cadiz, Spain	30.13	765.3	68	20.0	51	NW			6		2			0	0			Hazy	
§Shenandoah, Montevideo, Uruguay	30.12	765.0	56	13.3	87	NNE			3		8		Calm			Smooth		Fair	
§St. Louis, League Island, Pa.	30.22	767.6	63	17.2	72	NNE	7	3.1			2			0	0			Misty	
Swatara, N. 8° 23' E. 105° 11' †	29.81	757.2	81	27.2	87	NNW			4		10		NW			Smooth		Cloudy	
§Tennessee, New York, N. Y.	30.26	768.6	61	16.1	66	NNE			2		2		NW			Smooth		Clear	
§Ticonderoga, Kobe, Japan	29.96	761.0	71	21.7	90	NW			1		0					Smooth		Clear	
§Trenton, Villafranca, France	29.84	757.9	66	18.9	74	SW			1		8			0	0	None		Cloudy	
§Vandalia, New London, Conn.	30.25	768.3	59	15.0	88	SW			2		2		NW					Fair	
§Wabash, Boston, Mass.	30.25	768.3	65	18.3	63	Calm	0	0			5			0	0			Fair	
§Wachusett, Sandy Point, Strait of Magellan	29.37	746.0	42	5.6	91	NW			1		0			0	0	Smooth		Clear	
Wyoming, Villafranca, France	29.86	758.4	66	18.9	74	SSW			3		5		SW			Smooth	SW	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of vessels and captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 39° 20', W. 70° 16'	30.25	768.2	57	13.9		NE			4		0					Smooth	ENE	Clear.	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent, N. 41° 57', W. 44° 02'	30.33	770.4	66	18.9	84	ENE			5		2		E	0	0	Smooth		Clear.	
S. S. Ohio, Henry Morrison, N. 49° 20', W. 16° 35'	30.42	772.7	58	14.4	94	N			3		10		N		Mist	Small	N	Cloudy.	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger, N. 36° 42', W. 122° 00'	30.09	764.3	53	11.7	93	WNW			6		0					Sharp	NW	Clear.	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains, N. 44° 36', W. 41° 47'	30.08	764.0	67	19.4	74	SW			2		8		S	0	0	Smooth		Cloudy.	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 46° 17', W. 35° 06'	30.48	742.2	64	17.8	83	E			2		2		E	0	0	Light	NE	Fair.	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Helmbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of vessels and captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
S. S. Belgic, L. Meyer, Yokohama Japan	29.93	760.2	67	19.4	100	SW			2		2		S			Mod'ate		Clear.	D. A. Joyce.
S. S. Gaelic, W. H. Kidley, N. 38° 13', E 170° 11'	30.18	766.6	58	14.4	100	NW			1		10ks		N	Light	Light	Mod'ate	NW	Overcast.	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, N. 36° 50', W. 124° 16'	30.22	767.6	48	8.9	92	NNW			6		0					Mod'ate	NW	Clear.	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, N. 33° 54', W. 118° 47'	30.00	762.0	59	15.0		SE			1		0					Mod'ate	NW	Clear.	
S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
S. S. State of California, G. Dabney, San Francisco, Cal.	30.02	762.5	44	6.7		NW			3		5		W					Fair.	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.86	758.4	75	23.9	100	NNE			2		10		SE			Mod'ate	SSW	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury																			
§ S. S. City of Chester, J. M. Lucklan,																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, S. 34° 01′, E. 160° 30′.... †	30.11	764.6	64	17.8	78	SW			2		5		Calm			Smooth	SW	Fair	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 8° 30′, W. 83° 33′.....†	29.97	761.2	77	25.0	77	SE			2		5		SE	0.5	13.	Large	S	Squally	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China.....†	29.78	756.4	82	27.8	87	SW			5		10		SW	Mod'ate	Mod'ate			Squally	
§ S. S. City of Sidney, H.C. Dearborn, N. 5° 11′, W 164° 10′....*†	29.79	756.7	79	26.1		ENE			4		8		NE	0	0	Heavy	NE	Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle.																			
§ S.S. Dakota, D. E. Griffiths, Puget Sound.....†	30.20	767.1	50	10.0	79	SE			3		10							Hazy	D. E. Griffiths.
§ S.S. Granada, J M Cavarly N. 13° 29′, W. 89° 18′....†	29.98	761.5	80	26.7	81	NE			3		5cs		NE	Light	Light	Light	SSE	Fair	
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†	29.91	759.7	51	10.6		SW			1		0							Clear	E. Alexander.
§ S.S. Zalandia, R.C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 36° 35′, W. 74° 51′.....†	30.29	769.4	70	21.1		N			1		0			0	0	Long	NE		A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, N. 38° 54′, W. 74° 00′.....†	30.24	768.1	66	18.9	74	S	4	1.8			0			0	0	Swell	NE	Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Monabo, Porto Rico ....†	30.07	763.8	85	29.4		E			5		5		E	0	0	Mod'ate	SE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 14° 57′, W. 7° 30′.....*†	30.14	765.5	71	21.7		SE			4		2		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.31	769.9				E			3		8		E					Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 35° 39′ W. 75° 40′.....†	30.35	770.9	75	23.9		NNE			5		0			0	0	Smooth		Clear	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 42° 24′, W. 60° 39′.....	30.01	762.2	53	11.7	93	NNE			7		10		N	3 h'rs	3 h'rs	Mod'ate	N	Raining	James S. Garvin.

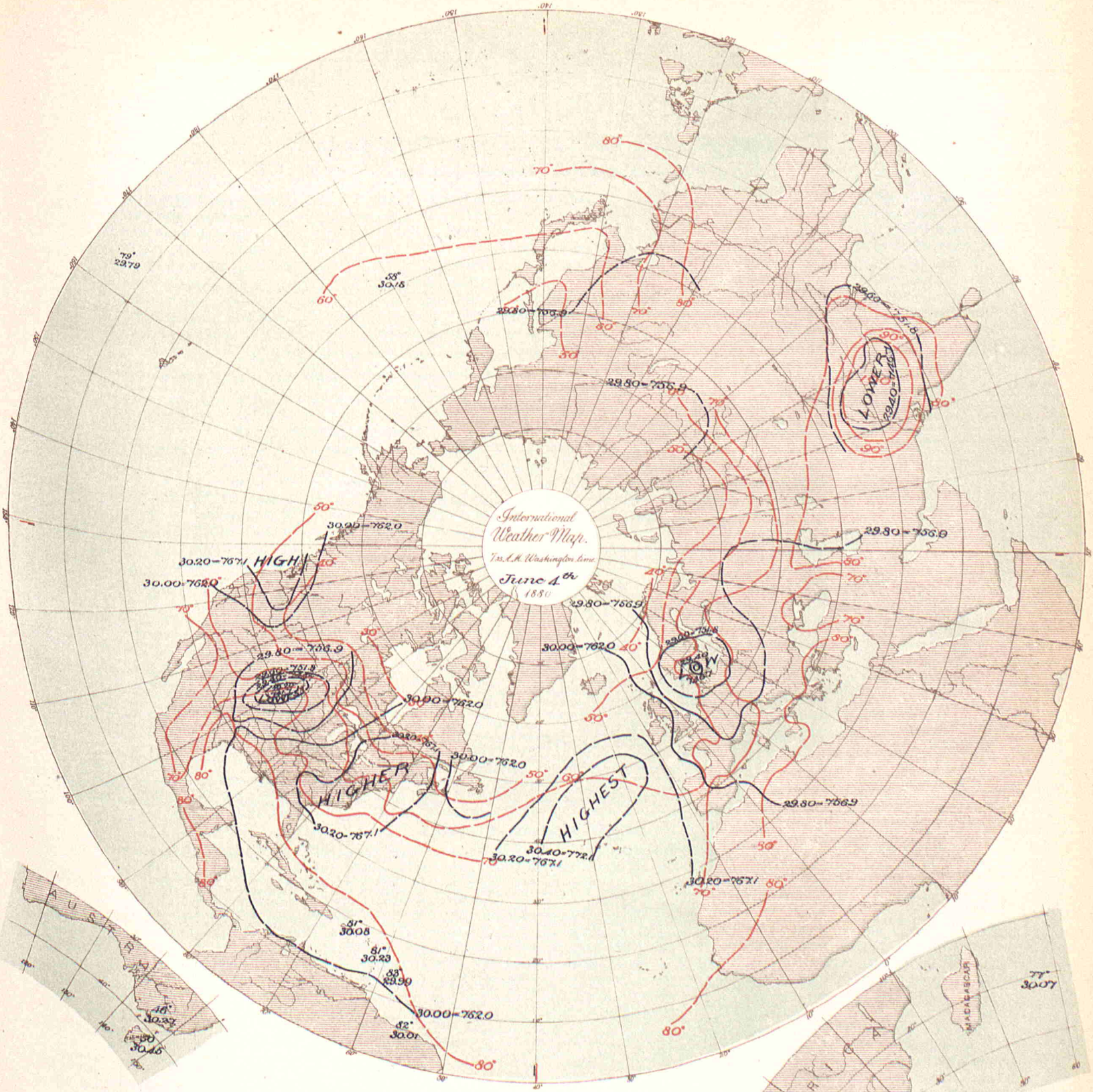
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. *For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the kinds or types, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.*

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 5, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.10	764.5	77.9	25.5	75	WNW			1		0			0	0	Clear	Metge.
Algiers			30.09	764.2	71.6	22.0	63	N			3		0			0	0	Clear	Nicolas.
La Calle			30.10	764.6	67.5	19.7	87	NW			3		10			0.413	10.5	Covered	Foufrède.
Tunis			30.04	762.9												0	0	Cloudy	Jacques.
Sfax			30.08	764.0															Gau.
Saida			30.08	764.0															Charon.
Tebessa			30.07	763.7	67.6	19.8	51	N			3		6			0.248	6.3	Cloudy	Watrin.
Geriville			30.10	764.4	63.9	17.7	66	N			4		0			0.236	6.0	Clear	Lonchamp.
Laghouat			30.04	763.0	81.3	27.4	31	SSW			3		3			0.028	0.7	Pretty fair	Herlin.
Biskra			30.05	763.3	81.7	27.6	41	NW			3		4			0	0	Cloudy	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.19	741.5	29.73	755.2	59.0	15.0	89	SE			2		10			0.957	24.3		Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.89	733.8	29.63	752.7	74.7	23.7	56	NW	3.8	1.7			9			0.130	3.3		Dr. Wierzbicki.
Eperies	28.80	731.6	29.64	752.8	74.1	23.4	56	S			2	c	8ks		N	0.008	0.20		Julius Mikolik.
Gratz	28.44	722.4	29.66	753.3	61.2	16.2	82	SW			3		10			0	0		Andreas Rospini.
Hermannstadt	28.43	722.0	29.76	755.8	80.1	26.7	47	S			2		10			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.40	721.3	29.72	755.0	52.5	11.4	91	WSW			3		10			0.150	3.8		The Staff.
Lemberg	28.73	729.7	29.66	753.4	74.3	23.5	55	SW			3		9			0.256	6.5		Dr. T. Stanecki.
Pola	29.70	754.3	29.80	757.0	68.2	20.1	74	S			2		3			0.303	7.7		I.R. Hydrographic Office.
Szathmar	29.32	744.8	29.76	755.9	79.5	26.4	55	SW			4		3			0.051	1.3		Pet. Pancsics, S. J.
Szegedin	29.40	746.8	29.67	753.5	78.1	25.6	49	SW			3		6			0	0		Karl Slancel.
Trieste	29.71	754.5	29.81	757.1	70.3	21.3	82	SW			1		5			0.228	5.8		P. Busin.
Vienna	28.95	735.3	29.68	753.9	65.1	18.4	71	SSE			1		10			0.079	2.0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.76	755.8	29.96	760.9	49.1	9.5	71	WNW			2		10		NW	0.163	4.15		Royal Observatory.
Furnes	30.00	761.9	30.02	762.5	60.1	15.6	62	NW			4		7			0.394	10.0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 4, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Ab																			
Aberdeen	29.72	754.9	29.82	757.4	54.0	12.2		WNW	6	2.7			10			0.135	3.43	Raining	W. Boswell.
Ardrossan	29.90	759.4	29.91	759.7	52	11.1		WNW			3		8					Overcast	G.Carrick.
Bimagh, (Observatory)	29.84	757.9	30.07	763.8	53.2	11.8		W	10	4.5			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			30.02	762.5	47.8	8.8		W	30	13.4			10					Overcast	John Hartnup.
Bolton (Sharples)	29.45	748.0	29.96	761.0	49.1	9.5		W	24	10.7			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.54	750.3	29.94	760.5	51.2	10.7	87	NW			1		6			0.03	0.8	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.93	760.2	29.96	761.0	83	28.3		NE			1		5					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.86	758.4	29.96	761.0	57.0	13.9		NW			1		10ks					Overcast	H. Todd.
Cardington			29.98	761.5	59.0	15.0		NE			1		7					Blue sky	John McLaren.
Chatham (School M. E.)	29.88	758.9	30.01	762.2	55.1	12.8		NW			3		10k					Gloomy	Lance Crp'l Hocker,R.E.
Donaghadee	29.97	761.2	30.01	762.2	55	12.8		W			3		10					Overcast	J. Mac Gowan.
Dover	29.96	761.0	30.00	762.0	57	13.9		NNW			3		6					½ clouded	J. Costello.
Falmouth (Observatory)	29.97	761.2	30.20	767.1	53.0	11.7		NNW			4		4					D. clouds	The Staff.
Fort Napier, Natal	27.99	710.9	30.19	766.8	66.4	19.1		NE			1		2					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.68	753.9	29.91	759.7	87	30.6		N			1		5					D. clouds	
Galway (Queen's College)			30.13	765.3	55	12.8		W			2		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.04	763.0	30.10	764.5	71.4	21.9		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.68	753.9	29.88	758.9	54.7	12.6		W			2		10k					Gloomy	D. G. Maclean.
Great Yarmouth	29.92	760.0	29.93	760.2	54	12.2		NNW			4		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.83	757.7	30.00	762.0	55.4	13.0		NW			2		9					Almost overcast	The Staff, for G.B.Airy.
Guernsey	29.90	759.4	30.12	765.0	55.5	13.1		WNW			3		3					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.37	771.4	30.49	774.4	58	14.4		NW			6	3ck				0.06	1.5	Fine	M. P. Moyle.
Holyhead	30.02	762.5	30.07	763.8	51	10.6		WNW			4		10					Raining	John Tilston.
Jersey	29.88	758.9	30.18	766.6	55.4	13.0		WNW			3		3					D. clouds	J. Fisher.
Kew (Observatory)	29.97	761.2	30.01	762.2	57.1	13.9		WNW	15	6.7			9					Threatening	The Met'g'l Office.
Leicester (Museum)	29.72	754.9	29.97	761.2	56.9	13.8		NW			1		5					D clouds	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.84	757.9	29.92	760.0	75.6	24.2		NW			2		0					Blue sky	A. King.
Nairn	29.73	755.1	29.82	757.4	54	12.2		NW			5		10					Showery	W. D. Penny.
Nassau, Bahamas			30.06	763.5	70.5	21.4		NE			0		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.79	756.7	29.98	761.5	61.3	16.3		NNW			4	ck	7k		NNW	0.090	2.29	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.49	749.0	30.01	762.2	55.0	12.8		NW			5-6		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.80	756.9	30.06	763.5	56.1	13.4		WNW			4		6					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	30.07	763.8	30.14	765.5	60.0	15.6		NW			4		5					D. clouds	John Merrifield.
*Roche's Point	30.13	765.3	30.24	768.1	60	15.6		N			4		5					clouded	Wm. Kennedy.
St. Ann's Head	30.00	762.0	30.16	766.1	50	10.0		NW			3		7					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.77	756.1	50	10.0		NNW	7	3.1			10					Raining	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.88	758.9	29.94	760.5	76.0	24.4		SW			1		4					D. clouds	Serg't W. H. Lyne.
Sheffield	29.69	754.1	29.96	761.0	61.2	16.2		NW			2		10			0.01	0.3	Overcast	W. F. Cooper.
Silloth Rectory	29.90	759.4	29.93	760.2	50.5	10.3	91	SW			3		10			0.136	3.45	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.00	762.0	51.9	11.1		W	19	8.5			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.82	757.4	30.04	763.0	57.4	14.1		NW			2		8					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	30.16	766.1	30.19	766.8	57	13.9		N			6		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.21	768.1	30.26	768.6	55.2	12.9		W	13	5.8			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West,Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.08	764.0	30.12	765.0	75.2	24.0	38	WNW	3.3	1.5		0	2			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			30.32	770.1	52.0	11.1	87	N			3		7kn			0	0		Francis Abbott,F.R.A.S.
Leith(RestalrigPark)Sc'tl'd			29.88	758.9	58.0	14.4		W			3		10s			0.12	3.0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.80	759.2	30.06	763.9	76.4	24.7	67	SSE	19.5	8.7		0	7		SSE	0	0	Squally	C. Meldrum.
Melbourne (Observatory)	30.04	763.0	30.13	765.3	51.8	11.0	75	N	12	5.4			0			0.01	0.3	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.97	759.4	47	8.3		NW			4		10			0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.78	756.4				NW			4	3	6	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points: the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity.	Wind. Force.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper.	Clouds. Direction. Lower	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer
H. M. S. Alert																		Capt.J.P.Maclear, R.N.
City of Agra																		Capt. Thos. Young.
City of Cashmere																		Capt. W. M. Grieve.
Barque Dommewyne																		Capt. Jas. Buchan.
Ship British Commodore, N. 42° 00′, W. 36° 35′			30.33	770.4	66	18.9		ESE		6		7			7	E	Misty	Capt. J. W. Thorne.
Barque Decapolis																		Capt. T. M. Almond.
Barque Dochra																		Capt. H Spalding.
S. S. Ethiopia																		Capt. A. Campbell.
Barque Fedalma																		Capt. H. L. Fox.
Brig. Fylde																		Capt. L. C. Dart.
S. S. German, N. 11° 54′, W. 17° 35′			29.96	761.0	80	26.7		NNW		3		8					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																		Capt. Wm. Waring.
Barque Hope																		Capt. Jas. Campbell.
S. S. Richmond																		Capt. W. H. Stuart.
Barque Royal Alexandra																		Capt. W. P. Hughes.
S. S. Strathleven																		Capt. C. W. Pearson.
S. S. Sunbeam																		Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.18	665.0	29.89	759.2	68.9	20.5	90	E			2	7ck	1d			0.35	9.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.58	751.4	29.63	752.6	58.5	14.7	43	SW			4		4						
Faröe	29.50	749.3	29.52	749.8	51.3	10.7	89	WSW			6		10						
Godthaab (Greenland)																		Raining	
Stykkisholm (Iceland)	29.65	753.1	29.69	754.2	47.8	8.8	81	SW			2		8						
Thorshavn (Faröe)	29.68	753.8	29.71	754.7	51.1	10.6	72	W			5		7						
Vestervig	29.39	746.4	29.48	748.8	53.2	11.8	66	SE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.60	751.7	30.15	765.7	55.4	13	55	NE			2		8n		NE	0.047	1.2	Very cloudy	Collignon, Director.
Amiens, Normal School	29.93	760.1	30.04	762.9	61.2	16.2	46	N			2		0			0.165	4.2	Clear	Vaillant, Director.
Arras, Engineer School	29.78	756.3	30.04	762.9	50.4	10.2	75	W			3		10kn	E	NW	0.283	7.20	Covered	Klein, Commandant.
Avignon, Normal School	29.85	758.3	29.93	760.3	60.8	16	75	NNE			2		5		WSW	0	0	Cloudy	Giraud, Director.
Bar-sur-Seine	29.44	747.8	30.00	762.0	54.9	12.7	46	NE to NW			3		10	W	NE	0.866	22.5	Covered	C. Saillard, Director.
Beauvais, Normal School	29.78	756.5	30.05	763.3	54.9	12.7	51	NW			3		8		NNW	0 039	1.00	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.10	739.0	30.00	761.9	48.6	9.2	84	N			2		10		N	0.067	1.7	Covered	A. Carré, Director.
Bordeaux	29.90	759.5	30.10	764.5	59.2	15.1	56	N			1		8		NNW	0.157	4.0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.14	740.2	30.06	763.5	48.2	9	92	W			3		10n	NW	NW	0.12	3.	Raining	Marlot, Director.
Bourges, Normal School	29.52	749.9	30.08	764.0	54.3	12.4	65	N			3		cs		N	0.087	2.2		M. Gence, Director.
Brest, Naval Observatory	29.97	761.3	30.22	767.5	57.9	14.4	53	NW			2		4k		NNW	0	0		Ch. de Rermaree, Dir
Caen, Normal School	30.01	762.2	30.08	764.1	58.3	14.6	74	NW			2		8		NW	0.181	4.6	Very cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.64	752.8	30.06	763.4	54.3	12.4	81	W			1		10		W	0.051	1.3	Covered	September, Director.
Châlons-sur-Marne, N. Sch	29.70	754.3	30.02	762.4	55.6	13.1	59	NW			4		8		N	0.169	4.3	Very cloudy	Jadot, Director
Chartres, Normal School	29.48	748.8	30.05	763.2	55.8	13.2	88	N			3		8		S	0.106	2.7		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.69	728.6	30.04	763.1	53.1	11.7	59	N			2		10			0.193	4.9		Allnard, Director.
Commercy, Normal School	29.10	739.2	29.96	761.0	52.9	11.6	54	NW			3		kn	NW	NW	0.272	6.9		Dr. Coullet, Director.
Commune de Gréasque*	28.82	732.0	29.96	761.0	66.9	19.4	56	NW			3		5		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.18	741.2	29.95	760.8	49.6	9.8	89	WNW			2		kn		SE	0.654	16.60		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.98	761.4	30.19	766.9	56.5	13.6	93	W			3		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.83	757.6	30.14	765.5	55.4	13	88	NNE			2		10		N	0.055	1.4	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.68	738.6	29.99	761.8	53.4	11.9	100	NW			2		10		N			Raining	M. Cadoret, Director
Lorient, Naval Observatory	30.10	764.4	30.19	766.9	57.2	14.0	71	WSW			1		5		N	0.098	2.50	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.40	746.8	30.03	762.7	51.3	10.7	80	NW			1		10		NW	0.551	14.0	Raining	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.65	753.0	29.91	759.8	64.6	18.1	68	WSW			2-3		6		W	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.92	734.6	29.97	761.3	50.5	10.3	60	N			3		n		N	0.425	10.8		Barbier, Director.
Mont-Louis	24.80	630.0	30.04	763.0	46.9	8.3	72	S	7.4	3.3			10			0.165	4.2		M. Cave, for Dr. Fines.
Nice	29.72	754.9	29.76	755.8	72.5	22.5	56	W			8		1	W	W	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.71	754.5	29.91	759.6	66.7	19.3	56	NW			1		5		NW	0	0	Cloudy	M. Boyer, Director.
Perpignan	29.87	758.6	29.97	761.2	64.0	17.8	53	NW	26.2	11.7			5	W	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.50	571.5			30.2	—1.0							10		SW	1.177	29.9	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																		Cloudy	M. Tailleu
Privas, Normal School	28.93	734.7	30.00	761.9	53.6	12	63	S			3		5	S	S	0.20	5.	Foggy	Allnard, Director.
Puy de Dome (Summit) Ob	25.11	637.7			30.7	—0.7	100	NW			4		10			0.547	13.9	Covered	Lt E. Devante, Director
Rochefort, Naval Obs'y	30.13	765.2	30.16	766.0	65.1	18.4	59	N			2		10	N	N	0	0	Cloudy	Platrier, Director.
Rouen, Normal School	29.98	761.5	30.07	763.7	58.3	14.6	42	NNW			2		5		NW	0.331	8.4	Clear	Lt. Hercouet, Director.
Saint Malo (Port) Obs'y	30.12	765.0	30.15	765.8	59.4	15.2	66	NW			3		2	NW	NW	0.176	4.48	Very cloudy	E. Renou, Director.
Saint Maur (near Paris)	29.89	759.2	30.06	763.4	55.4	13.0	51	NW			2		9		NW	0.114	2.9		T. Huguet, Director
Tarbes, Normal School	29.02	737.0	30.11	764.8	46.4	8	68	W			1					0.157	4.0	Covered	B. Bailland, Dir.
Toulouse, Observatory	29.42	747.2	30.15	765.7	48.9	9.4	95	NW			3		10			0.327	8.3	¾ covered	M. de Tastes.
Tours	29.91	759.6	30.10	764.6	60.8	16.0	47	NE			1		8		N	0	0		Dr. A. Berigny, Director
Versailles, Observatory	29.57	751.1	30.07	763.6	54.7	12.6	45	N			3					0.35	9.	Covered	Nicot, Director.
Villefranche-sur-Saone, N. S	29.96	743.2	29.98	761.6	49.1	9.5	86	NW			1		10						
SUB-SERIES.																0	0		L'Abbé Marchésl.
Fort de France, Martinique	30.15	765.7	30.17	766.4	81.0	27.2													
Paris, Montsouris Obs'y	29.78	756.3			54.3	12.4	47	NNW			2		7		NNW	0.079	2.0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.71	754.5	29.73	755.1	66.4	19.1	96	E	6.5	2.9			10n			0.055	1.4	Raining	Marc Dechevreus, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.95	735.2	29.80	757.0	51.6	10.9	87	NW			4		8n	W		0.224	5.7	Raining	Prof. Dr. Hoh.
Berlin	29.59	751.5	29.75	755.7	67.8	19.9	54	NW			3		10			0	0		Prof. Dr. Arndt.
Breslau	29.17	740.8	29.69	754.1	65.5	18.6	70	N			2		10			0	0		Royal University Obs'y
Carlsruhe	29.48	748.8	29.91	759.7	48.6	9.2	89	NW			1		10	N		0.102	2.6	Raining	Albert Senz.
Cassel	29.18	741.2	29.78	756.5	56.5	13.6	48	NW			4		8	NW		0.143	3.64		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.56	750.9	29.93	760.1	58.6	14.8	35	NW			1		7			0.020	0.5		Physical Society.
Friedrichshafen	28.40	721.4	29.81	757.2	59.4	15.2	73	SSW			2		6	SW		0.201	5.1		Chief Telegrapher Wilhelm.
Hamburg	29.67	753.5	29.74	755.3	56.5	13.6	70	SW			5		10			0.094	2.4		Dr. Reinhold Kleeman.
Kiel	29.65	753.2	29.67	753.6	56.8	13.8	47	WSW			4		6			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.63	752.5	29.71	754.5	59.5	15.3	81	NW			2		9	SW		0.220	5.6		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.40	746.8	29.82	757.5	52.2	11.2	68	NW			2		10	NW		0.008	0.2	Rainy	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.58	751.4	29.81	757.1	56.8	13.8	52	WNW			4		8ks	WNW		0.024	0.6		Dr. Assmann.
Memel	29.67	753.6	29.72	754.8	53.8	12.1	82	NW			3–4		9cs						Reinbrecht & Issermann.
Munich	27.98	710.5	29.82	757.4	55.2	12.9	73	W			2		10	SW		0.406	10.3	Heavy rain	Dr. C. Lang.
Neufahrwasser	29.69	754.0	29.70	754.4	56.1	13.4	78	NNE			2		4	WSW		0.110	2.8		A. Lothes.
Neustadt (Palatinate)	29.37	745.9	29.89	759.2	50.5	10.3	79	NNW			1		10			0.209	5.3		Reallehrer Dicknether.
Posen	29.43	747.5	29.71	754.6	63.1	17.3	65	W			2		10			0.028	0.7		Prof. Dr. Magener.
Strassburg (in Alsace)	29.41	746.9	29.97	761.1	46.4	8.0	100	N			4		10			0.307	7.80	Raining	Imp. University Observatory.
Stuttgart	28.91	734.4	29.80	756.9	56.3	13.5	35	NW					10			0.102	2.6		Prof. Dr. Schoder.
Thorn	29.48	748.9	29.67	753.6	69.1	20.6	58	SW			2		10			0.268	6.8		Dr. Cunerth.
Weissenburg (Bavaria)	28.43	719.5	29.90	759.4	51.4	10.8	87	NW	1.8	0.8			10		NW	0.484	12.3	Raining	Reallehrer J. Hopfner.
Wustrow	29.70	754.3	29.72	755.0	55.9	13.3	53	WSW			5		8ks			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.1	30.02	762.5	86.2	30.1		SW			1.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.46	748.3	29.51	749.5	87.0	30.6	80	S	30.3	13.5			4	W		0	0	D. clouds	
Deesa	29.01	736.8	29.45	748.1	105.2	40.7	10	SW	11.0	4.9			0			0	0	Blue sky	
Bombay	29.60	751.9	29.64	752.9	86.9	30.5	80	WSW	20.0	8.9			10		WNW	0	0	Overcast	
Poona (Yarrowda)	27.82	706.5	29.67	753.5	77.0	25.0	92	W	15.0	6.7			9	E	W	0.88	22.4	D. clouds	
Belgaum	27.18	690.3	29.71	754.6	74.4	23.6	84	WSW	8.0	3.6			8	E	SW	0.03	0.8	Drizzling	
Lahore	28.61	726.6	29.30	744.2	109.3	42.9	16	Calm	1.7	0.8			0			0	0		
Roorkee	28.42	722.0	29.26	743.2	106.1	41.2	7	NW	5.0	2.2						0	0	Hazy	
Agra	28.80	731.6	29.33	744.9	110.6	43.7	17	NW	8.3	3.7						0	0		
Nagpur	28.47	723.2	29.47	748.4	100.5	38.1	31	Calm	9.6	4.3			9		NW	0	0	D. clouds	
Jubbulpore	28.10	713.8	29.38	746.4	106.7	41.5	17	NW	6.1	2.7			8			0	0	Overcast	
Lucknow	29.09	738.9	29.45	748.0	98.5	36.9	45	NNW	2.5	1.1						0	0	Blue sky	
Allahabad	29.03	737.2	29.32	744.6	108.1	42.3	23	NE	3.0	1.3			1			0	0	D. clouds	
Patna	29.18	741.2	29.36	745.6	89.5	31.9	61	E	2.5	1.1			6	E	E	0	0	D. clouds	
Hazaribagh	27.45	697.1	29.39	746.5	89.0	31.7	69	ESE	8.8	3.9			7		W	0	0		
Cuttack	29.43	747.5	29.52	749.7	89.0	31.7	73	S	7.0	3.1			4			0	0	D. clouds	
Calcutta (Alipore)	29.48	748.8	29.50	749.3	85.2	29.6	87	SSW	15.0	6.7			10		SW	0.13	3.3	Overcast	
Goalpara	29.10	739.3	29.51	749.6	76.2	24.6	96	ESE	21.3	9.5			10			4.00	101.6	Raining	
Chittagong	29.54	750.3	29.63	752.6	78.9	26.1	90	SE	6.5	2.9			9			0	0	D. clouds	
Sibsagar	29.25	743.0	29.58	751.4	82.6	28.1	88	ENE	3.5	1.6			10			0.76	19.3	Raining	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.30	746.5	29.79	756.7	54.9	12.7	85	SW	6.9	3.1			10			0.319	8.1		Prof. Giovanni Clodig.
Milan	29.24	742.6	29.74	755.3	70.2	21.2	51	WSW	4.9	2.2			5	SW		0.079	2.0		Prof. Schiaparelli.
Padua	29.64	752.8	29.75	755.6	65.5	18.6	64	W	12.5	5.6			4			0.248	6.3		Prof. Dott. Lorenzoni.
Moncalieri	28.85	732.9	29.75	755.6	66.4	19.1	59	S	1.8	0.8			5	E		0.244	6.2		Prof. P. F. Denza.
Genoa	29.95	753.0	29.84	757.9	65.5	18.6	60	SE	12.5	5.6			4	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.86	707.7	29.74	755.3	66.0	19.2	52	SE			4		3	SW		0	0		Prof. D. C. Bruno.
Pesaro	29.76	756.0	29.81	757.2	72.7	22.6	48	SW	15.0	6.7			4	SW		0.598	15.2		Prof. Luigi Guidi.
Florence	29.63	752.7	29.89	759.1	68.0	20.0	71	SW			2		4			0.280	15.2		Cav. F. Meucci.
Leghorn	29.83	757.7	29.92	759.9	66.9	19.4	60	WSW	18.1	8.1			9			0.031	7.1		Prof. P. Monte.
Rome	29.78	756.4	29.95	760.8	73.0	22.8	55	SW	15.0	6.7			7			0	0		Prof. P. S. Ferrari.
Lecce	29.70	754.4	29.95	760.7	80.6	27.0	33	SW	9.4	4.2			8	SW		0	0		Prof. C. De Giorgi.
Cosenza	29.07	738.4	29.93	760.1	85.3	29.6	66	NW	3.1	1.4			3			0	0		Prof. D. Conti.
Cagliari	29.76	755.8	29.95	760.7	72.7	22.6	38	NW			2		8	S		0	0		Prof. A. Pacinotti.
Palermo	29.76	755.8	30.00	762.1	73.9	23.3	50	NNE	15.0	6.7			6			0	0		Prof. G. Giacciatore.
Syracuse	29.84	757.9	29.88	759.0	83.1	28.4	46	SE	1.3	0.6			5	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.6	29.95	760.6	70.9	21.6	73	SW	1.8	0.8			10			0.031	0.8		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.7	20.4	80	W	1.8	0.8			1s			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.69	754.1	29.89	759.2	70.0	21.1	83	WSW	0.6	0.3			9s			0.280	7.11	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.95	760.7	30.02	762.5	63.9	17.7	88	S	4.0	1.8		0	0			0	0	Clear	The Staff.
Wakayama	29.92	759.9	29.98	761.5	71.5	21.9	67	S	1.3	0.6		ck	9ks			0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.01	762.2	60.8	16.0	72	SE			1	2k	0			0	0	Clear	Prof. L. Perez.
Guanaxuato	23.67	601.2			60.8	16.0	51	SSE	Inap.	Inap.		0	0			0	0	Clear	Vicente Fernandez.
Leon	24.40	619.8	29.98	761.5	66.9	19.4	70	N			1	0	0			0	0	Blue sky	Prof. M. Leal.
Mazatlan	29.67	753.5	29.93	760.1	75.2	24.0	80	SE			1	3cs	0	SE		0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.8	29.97	761.2	59.4	15.2	71	Calm	0	0		0	0			0	0	Fine	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.98	609.9	29.89	759.3	64.9	18.3	55	SW			1	1cs	0			0	0	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.46	595.8	30.27	768.8	51.6	10.9	57	Calm	0	0		0	0			0	0	Very clear	Prof. P. Spina.
San Luis Potosi	24.17	614.0	30.00	761.9	67.3	19.6	47	E			1	4	0	W		0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.87	758.8	29.89	759.1	77.2	25.1	95	S			1	0	0			0	0	Foggy	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.61	574.2	30.11	764.9	64.2	17.9	63	Calm			0	5c	0	NE		0.59	15.0	½ clouded	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.5 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.2	29.97	761.2	55.0	12.8		NW			5					0.047	1.2		
Groningen	29.72	754.9	29.78	756.3	52.5	11.4		NW			5					0.004	0.1		
Helder	29.81	758.0	29.84	758.0	50.0	10.0		WNW			4					0.024	0.6		
Hellevoetsluis	29.91	759.8	29.91	759.8	52.7	11.5	61	WNW			4					0.059	1.5		
Utrecht	29.85	758.1	29.89	759.3	55.6	13.1	59	W			4		8			0.004	0.1	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.46	748.2	29.51	749.6	57.6	14.2	55	Calm	0	0			3			0	0		
Brönö	29.61	752.2	29.65	753.2	46.4	8.0	69	N	27	12			5			0	0		
Christiania	29.45	747.9	29.59	751.6	45.9	7.7	79	NE	9	4			10			0.354	9.0		
Tromsö	29.67	753.6	29.72	755.0	42.6	5.9	54	E	7	3			8			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.23	767.9	30.44	773.2	66.2	19.0	96	E			4		6			1.181	30.0		Dr. J. A. Sampaio.
Campo Major	29.65	737.8	30.02	762.6	71.2	21.8	35	WNW	8.7	3.9			3			"	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.24	768.0	30.33	770.3	67.3	19.6	67	SW	4.3	1.9			10			"	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.84	758.0	30.21	767.1	65.1	18.4	53	N	18.6	8.3			4			"	0		The Staff.
Ponta Delgada (Azores)	30.39	771.9	30.46	773.7	65.1	18.4	86	ESE	11.9	5.3			3			0.051	1.3		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE Naval Series. Vessels and Captains.																Sea or swell. Height scale 0-9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			30.00	761.9	75.0	23.9		W			2		0			1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.04	763.1	66.6	19.2		NW			3		3		N	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães, Macao, China			29.86	758.4	86.5	30.3		SW			1		10		SW	1	SW	8	Raining.	J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.57	751.0	29.59	751.5	54.6	12.5	73	NE	9	4			10					Heavy rain.	Capt. Sselliwerstow.
Astrakhan	30.15	765.7	30.07	763.6	78.6	25.9	30	E	2	1			1s					Light clouds	Capt. Wisganow.
Barnaul	29.12	739.6	29.60	751.7	66.4	19.1	86	Calm	0	0			10						Meteorological Obs.
Dorpat	29.37	746.0	29.60	751.9	67.5	19.7	57	W	11	5			3ck						Prof. Dr. Weihrauch.
Ekaterinburg	28.96	735.6	29.89	759.3	66.2	19.0	39	WNW	2	1			4k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.77	756.1	30.03	762.7	71.2	21.8	37	SSW	2	1			0						Physical Cabinet.
Kertch	30.07	763.6	30.08	764.1	73.4	23.0	85	S	2	1			1						Lagorio.
Kieff	29.15	740.3	29.74	755.5	78.6	25.9	60	SSW	11	5			c;ck	5ks					Physical Cabinet.
Krotkowo*	29.63	752.7	30.09	764.2	74.7	23.7	30	WNW	2	1				3					Cand. Fatjanow.
Lugan	29.84	757.9	30.03	762.8	85.6	29.8	30	SE	13	6				3					Meteorological Obs.
Moscow	29.35	745.6	29.87	758.7	77.2	25.1	41	S	13	6				6ks					Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.95	760.8	30.02	762.6	79.5	26.4	55	S	13	6			2cs;k						Kurdakof.
Nikolaievsk, on the Amoor	29.83	757.6	29.91	759.8	53.8	12.1	69	SE	16	7			0						
Nukuss																			
Orenburg																			
Pekin (China)	29.69	754.0	29.82	757.6	72.7	22.6	58	N	4	2			3cs						Physical Observatory.
St. Petersburg	29.51	749.5	29.52	749.9	67.6	19.8	58	WNW	16	7			9ks;n						Central Physical Obs.
Tashkend	28.21	716.5	29.67	753.5	87.6	30.9	46	Calm	0	0			0						Teich, A. M.
Tiflis	28.61	726.7	29.98	761.6	72.0	22.2	55	NW	9	4			8cs						Physical Observatory.
Vladivostock																			
Warsaw	29.26	743.1	29.66	753.4	70.7	21.5	62	Calm	0	0			9ks						Astronomical Obs.
Wilna	29.25	743.0	29.65	753.0	75.7	24.3	46	SW	4	2			8					Heavy clouds	Astronomical Obs.
Yeniseisk	29.35	745.6	29.63	752.6	62.2	16.8	90	W	9	4			10					Thunder-storm	Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.91	759.7	30.01	762.3	69.1	20.6	44	SE	4.5	2.00			0			0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.13	765.3	30.19	766.7	61.7	16.5	85	NW	1.2	0.54		1	8	SW		0.632	13.5	Rainy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.19	690.7			55.8	13.2	64	NE	13.5	6.02			8			0.055	1.4	Cloudy	Domingo Martin y Peres.
Madrid, Royal Observatory	27.85	707.4	30.00	761.9	75.0	23.9	43	SW	5.2	2.33		0	8			0	0	Very cloudy	The Staff.
Murcia, Met. Obs'y	29.85	758.3	30.00	762.0	79.2	26.2	51	ENE	3.5	1.58		4	5	SE		0	0	Almost cov'd	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.32	744.8	30.22	767.5	60.6	15.9	58	NE	13.7	6.1			6			0.031	0.8	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.96	761.0	30.02	762.6	81.2	27.3	74	ESE	2.2	1.0		0	1k		SE	Inap.	Inap.	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.84	757.9	29.89	759.2	82.7	28.2	76	SW	5.5	2.5			8kn		W	0.07	1.8	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.7	30.13	765.2	67.8	19.9	65	WNW	14.3	6.4		1	5	NE	NE	0	0		Capt. C. Pulason, R. N., Dir.
San Juan de Porto Rico, W. I.	29.95	760.8	30.04	763.1	81.0	27.2	74	E	5.6	2.50		4cs	4k		E	0	0	D. clouds	Enriquetadas, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.58	751.3	29.62	752.3	39.9	4.4	.....	N	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.53	750.1	29.58	751.4	43.9	6.6	71	N	.....	.....	4	.....	10	.....	.....	0	0	.....	
Hernosand	29.53	750.0	29.58	751.3	50.7	10.4	88	N	.....	.....	4	.....	10	.....	.....	0.008	0.2	.....	
Stockholm	29.40	746.8	29.58	751.3	53.2	11.8	78	WNW	.....	.....	2	.....	10	.....	.....	0.031	0.8	.....	
Wisby	29.48	748.9	29.69	754.0	57.6	14.2	83	WNW	.....	.....	2	.....	7	.....	.....	0.051	1.3	.....	
Sub-Series.																			
Upsala	29.46	748.3	29.55	750 5	50.4	10.2	78	NNE	7.4	3.3	.....	.....	10	.....	N	0.001	0.02	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 44° 09′, W. 12° 30′	.....	.....	30.40	772.2	60.8	16.0	.....	NNE	.....	.....	4	.....	6	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.50	723.9	29.93	760.3	52.2	11.2	79	S	.....	.....	4	.....	10	.....	.....	0.280	7.1	Raining	The Observatory.
Zurich	28.22	716.7	29.55	753.1	56.1	13.4	74	W	.....	.....	4	.....	7	.....	.....	0.378	9.6	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.1 mm.; Thermometer, —3.2 Cent. Relative Humidity, +23 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.00	761.9	84.0	28.9	31	ESE	9	4.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.04	763.1	80.8	27.1	.....	SW	.....	.....	2	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.93	760.3	77.0	25.0	67	N	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	54.0	12.2	.....	SE	2	0.9	.....	2cs	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	30.29	767.6	30.28	769.1	54.3	12.4	63	W	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	30 19	766.8	30.23	767.8	44.1	6.7	84	NW	12	5.4	.....	.....	10n	.....	.....	0.015	0.38	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.90	759.4	30.09	764.3	60.0	15.6	94	SE	.....	.....	2	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	30.11	764.8	30.28	769.1	52.2	11.2	68	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.25	768.3	30.27	768.8	49.6	9.8	75	W	5	2.2	.....	0	0	.....	.....	0	0	Clear.	J. McWilliams.
Fredericton, N. B.	30.26	768.6	30.33	770.4	52.2	11.2	59	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	28 95	735.3	29.76	755.9	55.0	12.8	82	N	6	2.7	.....	2c	2ks	N	.....	0	0	Fair	James Stewart.
Granton, Ontario	28.81	731.8	29.88	758 9	62.6	16.7	77	S	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy	James Grant.
Halifax, N. S.	30.08	764.0	30.21	767.3	51.0	10.6	65	N	18	8.0	.....	0	0	.....	.....	0	0	Clear.	A. Allison.
Hamilton, Ontario	29.59	751.6	29 96	761.0	59.5	15.3	88	SW	.....	.....	1	6ck	0	SW	.....	0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.73	755.1	30.06	763 5	60.3	15.7	70	E	4	1.8	.....	2cs	0	Calm	.....	Inap.	Inap.	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	30.01	762.2	30.05	763.3	40.4	4.7	95	NE	8	3.6	.....	.....	10n	.....	.....	0	0	Cloudy	C. H. Rigby.
Montreal, Quebec	29.98	761.5	30.18	766.6	56.0	13.3	81	S	8	3.6	.....	.....	10kqs	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.78	755.1	29.76	755 9	60.8	16.0	80	S	.....	.....	3	0	6ks	.....	.....	0.20	5.1	Fair	J. R. Nason.
Norwood, Ontario	29.32	744.7	30.00	762.0	62.3	16.8	75	SE	7	3.1	.....	4ck	0	SW	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.23	742.4	29.91	759 7	63.0	17.2	72	SE	15	6.7	.....	1ck	2ks	S	.....	0.07	1.8	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.29	744.0	30.02	762.5	66.7	19.3	58	W	.....	.....	1	.....	9ks	.....	.....	0	0	Cloudy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.29	744.0	29.97	761.2	63.1	17.3	94	S	6	2.7	.....	.....	10n	.....	.....	0	0	Cloudy	H. Morgan.
Port Stanley, Ontario	29.31	744.5	29.95	760.7	60.1	15.6	90	E	12	5.4	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	M. Payne.
Quebec, Quebec	29.97	761.2	30.29	769.4	56.0	13.3	75	Calm	.....	.....	0	0	0	.....	.....	0.02	0.5	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.58	751.3	30.04	763 0	54.0	12.2	77	E	8	3.6	.....	.....	8ks	.....	.....	0 02	0.5	Cloudy	W. H. McIntyre.
St. John, N. B.	30.14	765.5	30.30	769.6	52.0	11.1	60	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.16	740.7	29.85	758.2	65.2	18.4	72	SE	20	8.9	.....	.....	10ks	.....	.....	Inap.	Inap.	Cloudy	K. Stewart.
Stratford, Ontario	28.65	727.7	29.80	756.2	62.0	16.7	75	SE	10	4.5	.....	.....	10s	.....	.....	0	0	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.14	765.5	30.09	764.3	40.5	4.7	95	N	12	5.4	.....	.....	10n	.....	.....	0.01	0.3	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.62	752.3	30.00	762.0	60.4	15.8	82	E	7	3.1	.....	.....	10ks	.....	.....	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.71	729.2	29.92	760.0	64.2	17.9	73	SE	15	6.7	.....	.....	10s	.....	.....	0	0	Cloudy	Professor Wolverton.
Yarmouth, N. S.	30.21	767.3	30.28	769.1	55.6	13.1	67	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.87	758.7	30.12	765 0	50	10.0	84	E	.....	.....	.....	.....	Fog	.....	.....	0.40	10.2	Rain & fog	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.94	760.5	44.6	7.0	.....	NE	.....	.....	2	.....	.....	.....	.....	0.32	8.1	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.19	766.8	30.27	768.8	63	17.2	62	SW	4	1.8			10s		W	0	0	Cloudy	
Alpena, Michigan	29.10	739.1	29.73	755.1	55	12.8	93	SE	18	8.0			10n		SE	0.03	0.8	Light rain	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.05	737.9	30.18	766.6	65	18.3	83	E	10	4.5		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.30	769.6	30.31	769.9	64	17.8	94	S	4	1.8		10k	0	Calm		0	0	Cloudy	
Augusta, Georgia	30.09	764.3	30.28	769.1	70	21.1	70	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.20	767.1	30.24	768.1	68	20.0	74	S	6	2.7		2cs	Haze	Calm	Calm	0	0	Clear	
Barnegat, New Jersey	30.24	768.1	30.26	768.6	68	20.0	74	S	9	4.0		8cs	0	W		0	0	Cloudy	
Bismarck, Dakota	27.99	710.9	29.85	758.2	54	12.2	87	N	24	10.7			10s		N	0.06	1.5	Cloudy	
Boerne, Texas	28.42	721.9	29.68	753.9	73	22.8	90	S	6	2.7		8k	0	S		0	0	Cloudy	
Boise City, Idaho	27.42	696.5	30.38	771.6	41	5.0	57	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	30.17	766.3	30.32	770.1	59	15.0	70	SE	2	0.9		5k	0	SW		0	0	Fair	
Brackettville, Texas	28.70	729.0	29.70	754.4	73	22.8	90	E	12	5.4			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.59	726.2	29.53	750.0	61	16.1	94	NE	10	4.5			10s		NE	2.17	55.1	Cloudy	
Brownsville, Texas	29.82	757.4	29.87	758.7	83	28.3	71	S	8	3.6		2k	0	S		0	0	Clear	
Buffalo, New York	29.31	744.5	29.98	761.5	69	20.6	61	SW	11	4.9		5cs	0	Calm		Inap.	Inap.	Fair	
Burkes, Arizona					65	18.3	22	NW			1	0	0			0	0	Clear	
Burlington, Vermont	29.94	760.5	30.22	767.6	58	14.4	70	S	3	1.3		2ck	8s	W	W	0	0	Cloudy	
Cairo, Illinois	29.56	750.8	29.93	760.2	75	23.9	77	S	16	7.2		2ck	2ks	SW	S	0	0	Fair	
Campo, California	27.36	694.9	29.93	760.2	35	1.7	80	E	5	2.2		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.27	768.8	30.28	769.1	71	21.7	75	NE	11	4.9		0	8s		SE	0	0	Cloudy	
Cape Henry, Virginia	30.26	768.6	30.28	769.1	66	18.9	79	SW	6	2.7		8ck	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.26	768.6	30.28	769.1	74	23.3	63	SE	7	3.1		5c;k	0	SE		0	0	Fair	
Cape May, New Jersey	30.25	768.3	30.28	769.1	66	18.9	84	S	12	5.4		2c	2s	SW	Calm	0	0	Fair	
Castroville, Texas	29.06	738.6	29.74	755.4	77	25.0	77	S	8	3.6			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.11	764.8	30.14	765.5	75	23.9	86	NE	9	4.0		5c	0	E		Inap.	Inap	Fair	
Charleston, South Carolina	30.18	766.6	30.24	768.1	77	25.0	67	E	16	7.2		0	0			0	0	Clear	
Charlotte, North Carolina	29.42	747.3	30.22	767.6	69	20.6	52	S	1	0.4		2c	Haze	Calm	Calm	0	0	Fair	
Chattanooga, Tennessee	29.38	746.2	30.17	766.3	65	18.3	73	E	3	1.3		5ck	1ks	SW	SW	0	0	Fair	
Cheyenne, Wyoming	23.97	608.8	29.91	759.7	40	4.4	82	N	20	8.9			10s		N	0.10	2.5	Cloudy	
Chicago, Illinois	29.02	737.1	29.67	753.6	69	20.6	80	SW	8	3.6			10s		SW	0.13	2.3	Cloudy	
Chincoteague, Virginia	30.29	769.4	30.31	769.9	65	18.3	93	S	8	3.6		2ck	Haze	NW	Calm	0	0	Fair	
Cincinnati, Ohio	29.36	745.7	29.99	761.7	69	20.6	56	S	12	5.4		2k	8ks	W	W	Inap.	Inap.	Cloudy	
Cleveland, Ohio	29.24	742.7	29.93	760.2	68	20.0	56	SE	12	5.4			10ks		S	0	0	Cloudy	
Coleman City, Texas	28.02	711.7	29.61	752.1	71	21.7	80	S	11	4.9		5ck	0	Calm		0	0	Fair	
Columbus, Ohio	29.16	740.7	29.97	761.2	67	19.4	60	S	10	4.5		10k	0	S		0	0	Cloudy	
Concho, Texas	27.88	708.1	29.46	748.3	75	23.9	77	S	20	8.9		8k	0	S		0	0	Fair	
Corsicana, Texas	29.43	747.5	29.87	758.7	76	24.4	82	S	8	3.6		0	8ks		S	0	0	Cloudy	
Davenport, Iowa	28.93	734.8	29.52	749.8	73	22.8	85	S	20	8.9			10s		S	0.35	8.9	Cloudy	
Dayton, Washington T'y					46	7.8	68	S			1	8c	0	W		0	0	Fair	
Deadwood, Dakota	25.27	641.8			48	8.9	70	Calm	0	0			10n		Calm	0.12	3.0	Light rain	
Decatur, Texas	28.60	726.4	29.69	754.1	76	24.4	86	SE	20	8.9		5k	2s	Calm	S	0	0	Fair	
Delaware Breakwater, Del.	30.25	768.3	30.27	768.8	65	18.3	89	S	13	5.8		2k	2s	SW	SW	0	0	Fair	
Denison, Texas	29.02	737.1	29.76	755.9	74	23.3	86	S	14	6.3		8ck	0	S		0	0	Cloudy	
Denver, Colorado	24.76	628.9	29.98	761.5	43	6.1	87	NW	17	7.6			10n		Calm	0.66	16.8	Light rain	
Des Moines, Iowa	28.52	724.4	29.32	744.7	75	23.9	81	S	6	2.7		0	5ks		SW	0	0	Fair	
Detroit, Michigan	29.15	740.4	29.78	756.4	64	17.8	83	S	18	8.0			10s		SW	0.23	5.8	Threatening	
Dodge City, Kansas	26.94	684.3	29.04	737.6	72	22.2	38	W	20	8.9		0	0			0	0	Clear	
Dubuque, Iowa	28.81	731.8	29.46	748.3	70	21.1	80	SE	10	4.5			10s		SE	0.18	4.6	Cloudy	
Duluth, Minnesota	28.94	735.1	29.61	752.1	47	8.3	100	NE	2	0.9			Fog		Calm	2.88	73.2	Foggy	
Eagle Pass, Texas	28.99	736.3	29.67	753.6	80	26.7	70	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	30.24	768.1	30.31	769.9	54	12.2	61	N	2	0.9		0	0			0	0	Clear	
Edinburg, Texas					81	27.2	87	SE			1	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.28	743.7	29.97	761.2	68	20.0	56	S	16	7.2			10s		SW	0	0	Cloudy	
Escanaba, Michigan	28.99	734.0	29.52	749.8	57	13.9	94	SE	14	6.3			10s		S	Inap.	Inap.	Cloudy	
Florence, Arizona	28.39	721.1	29.99	761.7	67	19.4	64	NE	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.08	637.0	30.53	775.4	54	12.2	21	NE	6	2.7			Haze		Calm	Inap.	Inap.	Dense haze	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.90	708.6	29.71	754.6	50	10.0	93	NW	11	4.9			10s		NW	0.63	16.0	Cloudy	
Fort Custer, Montana	26.92	683.8			48	8.9	77	SW	4	1.8		5k	0	NW		0.35	8.9	Fair	
Fort Davis, Texas	25.14	638.5	30.10	764.5	68	20.0	65	SW	4	1.8		1cs	0	W		0	0	Clear	
Fort Elliot, Texas	26.61	675.9	28.68	728.5	73	22.8	67	SW	18	8.0		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.15	740.4	29.65	753.1	78	25.6	69	S	20	8.9		10cs	0	SW		0	0	Cloudy	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	65	18.3	10	NW	9	4.0		0	0			0	0	Clear	
Fort Griffin, Texas	28.48	723.4	29.68	753.9	73	22.8	85	SE	12	5.4		8k	0	SE		0	0	Cloudy	
Fort Keogh, Montana	27.28	692.9			49	9.4	86	NW	18	8.0			10n		NE	0.08	2.0	Light rain	
Fort McKavett, Texas	27.57	700.3	29.38	746.2	73	22.8	76	S	14	6.3			10s		S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.48	723.4	29.52	749.8	73	22.8	81	SE	22	9.8		5ck	0	Calm		0	0	Fair	
Fort Stevenson, Dakota	28.00	711.2			51	10.6	93	N	18	8.0			10s		N	0.15	3.8	Cloudy	
Fort Verde, Arizona					56	13.3	63	NW			1	0	Haze			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.88	758.9	29.92	760.0	82	27.8	71	S	13	5.8		5k	0	S		0.01	0.3	Fair	
Grand Haven, Michigan	29.07	738.4	29.69	754.1	62	16.7	88	S	17	7.6			10n		Calm	0.30	7.6	Light rain	
Helena, Montana					50	10.0	39	SW	8	3.6		2cs	0	S		Inap.	Inap.	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.08	738.6	29.82	757.4	71	21.7	66	S	14	6.3		0	5ks		SW	0	0	Fair	
Indianola, Texas	29.88	758.9	29.91	759.7	83	28.3	71	S	15	6.7		1k	0	Calm		0	0	Clear	
Jacksboro, Texas	28.67	728.2	29.72	754.9	75	23.9	77	SW	12	5.4		0	0			0	0	Clear	
Jacksonville, Florida	30.14	765.5	30.17	766.3	79	26.1	62	NE	12	5.4		2cs	0	Calm		0	0	Clear	
Keokuk, Iowa	28.93	734.8	29.49	749.0	74	23.3	86	S	13	5.8			10s		S	0.07	1.8	Threatening	
Key West, Florida	30.01	762.2	30.04	763.0	81	27.2	70	E	7	3.1		0	0			0.20	5.1	Clear	
Kittyhawk, North Carolina	30.28	69 1	30.31	769.9	66	18.9	80	SE	1	0.4		5c	Haze	W	Calm	0	0	Fair	
Knoxville, Tennessee	29.19	741.4	30.18	766.6	65	18.3	68	N	2	0.9		0	0			0	0	Clear	
La Crosse, Wisconsin	28.78	731.0	29.47	748.5	65	18.3	89	SE	12	5.4			10s		Calm	1.38	35.1	Cloudy	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	64	17.8	43	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.39	746.5	29.71	754.6	81	27.2	74	SE	10	4.5		1cs	0	Calm		0	0	Clear	
Leavenworth, Kansas	28.58	725.9	29.34	745.2	76	24.4	73	S	20	8.9		4cs	0	SW		0	0	Fair	
Lewiston, Idaho	29.41	747.0	30.07	763.8	47	8.3	48	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.56	750.8	29.87	758.7	77	25.0	77	S	10	4.5		0	5ks		SW	0	0	Fair	
Los Angeles, California	29.59	751.6	29.93	760.2	50	10.0	86	NE	1	0.4		0	0			0	0	Clear	
Louisville, Kentucky	29.42	747.3	29.95	760.7	71	21.7	58	S	11	4.9		9k	2s	SW	Calm	0	0	Cloudy	
Lynchburg, Virginia	29.57	751.1	30.25	768.3	66	18.9	59	N	3	1.3		10ck	0	N		0	0	Cloudy	
Madison, Wisconsin	28.62	726.9	29.55	750 6	63	17.2	94	SE	8	3.6			10n		Calm	0.96	24.4	Light rain	
Marquette, Michigan	28.86	733.0	29.52	749.8	59	15.0	88	N	4	1.8		2k	0	NW		0.02	0.5	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.20	716.3	29.86	758.4	77	25.0	69	S	10	4.5		5cs	0	SW		0	0	Fair	
Memphis Tennessee	29.59	751.6	29.92	760.0	77	25.0	77	SE	12	5.4			10s		S	0	0	Cloudy	
Milwaukee, Wisconsin	28.97	735.8	29.65	753.1	66	18.9	89	S	12	5.4			10n		NW	0.06	1.5	Thunder-storm	
Mobile, Alabama	30.04	763.0	30.09	764.3	79.5	26.4	85	SE	10	4.5		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.94	760.5	30.16	766.1	73	22.8	85	SE	8	3.6		8k	0	S		0	0	Fair	
Morgantown, West Virginia	29.13	739.9	30.09	764.3	70	21.1	57	W	5	2.2		10ck	0	NW		0	0	Cloudy	
Mt. Washington, N. H.	24.06	611.1	30.42	772.7	39	3.9	72	SW	1	0.4		5k	2s	SW	Calm	0.02	0.5	Fair	
Nashville, Tennessee	29.54	750.3	30.05	763.3	74	23.3	55	SE	8	3.6		0	8ks		S	0	0	Fair	
New Haven, Connecticut	30.20	767.1	30.31	769.9	60	15.6	88	S	3	1.3			10n		Calm	Inap.	Inap.	Light rain	
New London, Connecticut	30.27	768.8	30.32	770.1	61	16.1	82	S	6	2.7		6cs	0	NW		0	0	Fair	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	80	26.7	82	SE	6	2.7		1k	Sm'e	S	Calm	0.18	4.6	Clear	
Newport, Rhode Island	30.27	768.8	30.32	770.1	63	17.2	67	S	6	2.7		1c	0	Calm		0	0	Clear	
New River, North Carolina					72	22.2	63	SE			1	10c	0	NW				Cloudy	
New York, New York	30.12	765.0	30.29	769.4	65	18.3	58	S	6	2.7		5ck	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.24	768.1	30.30	769.6	72	22.2	62	W	2	0.9		5cs	Haze	Calm	Calm	0	0	Fair	
North Platte, Nebraska	26.73	678.9	29.19	741.4	55	12.8	90	NW	32	14.3			10n		NW	0.28	7.1	Light rain	
Olympia, Washington Ter.	30.21	767.3	30.25	768.3	46.0	7.8	96	SW	1	0.4			10n		SW	0.11	2.8	Light rain	
Omaha, Nebraska	28.[illegible]3	714.5	29.11	739.4	79	26.1	66	SE	11	4.9		Haze	8s		Calm	0	0	Cloudy	
Oswego, New York	29.78	756.4	30.09	764.3	66	18.9	69	S	11	4.9		2c	5ks	Calm	SW	0	0	Fair	
Pembina, Dakota	28.86	733.0	29.66	753.4	54	12.2	93	N	9	4.0		2c	0	Calm		0.06	1.5	Clear	
Pensacola, Florida	30.08	764.0	30.11	764.8	79	26.1	78	SE	10	4.5		7k	4s	S	S	0	0	Cloudy	
Philadelphia, Pennsylvania	30.22	767.6	30.27	768.8	65	18.3	84	S	8	3.6		5ck	Haze	SW	Calm	0	0	Fair	
Phœnix, Arizona	28.78	731.0	30.51	774.9	75	23.9	37	Calm	0	0		0	0			0	0	Clear	
Pike's Peak, Colorado	17.59	447.8	29.80	756.9	10	−12.2	100	SW	20	8.9			10n		W	0.03	0.8	Light snow	
Pilot Point, Texas	29.03	737.3	29.84	757.9	77	25.0	77	S	20	8.9		8c	0	SW		Inap.	Inap.	Fair	
Pioche, Nevada	24.22	615.2	29.99	761.7	39	3.9	25	NW	2	0.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.06	763.5	67	19.4	79	S	9	4.0			10s		S	0	0	Cloudy	
Port Huron, Michigan	29.17	740.9	29.81	757.2	62	16.7	83	S	12	5.4			10n		S	0.09	2.3	Thunder-storm	
Portland, Maine	30.26	768.6	30.31	769.9	60	15.6	55	SW	3	1.3		0	0			0	0	Clear	
Portland, Oregon	30.21	767.3	30.28	769.1	49	9.4	93	Calm	0	0			10n		Calm	0.01	0.3	Light rain	
Portsmouth, North Carolina					73	22.8	76	NE	10	4.5		8k	0	NE		0	0	Cloudy	
Prescott, Arizona	24.84	630.9	30.20	767.1	48	8.9	16	NW	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	78	25.6	78	E	7	3.1		1c	2ks	Calm	E	0.02	0.5	Fair	
Red Bluff, California	29.72	754.9	30.08	764.0	58.5	14.7	51	NW	8	3.6		0	0			0	0	Clear	
Rio Grande City, Texas	29.66	753.4	29.86	758.4	81	27.2	70	SE	12	5.4		8c	0	Calm		0	0	Fair	
Rochester, New York	29.42	747.3	30.01	762.2	70	21.1	57	SW	10	4.5		9ck	0	W		0	0	Cloudy	
Roseburg, Oregon	29.71	754.6	30.28	769.1	43.5	6.4	87	Calm	0	0		5cs	0	Calm		Inap.	Inap.	Fair	
Sacramento, California	29.90	759.4	29.98	761.5	64	17.8	58	NW	9	4.0		0	0			0	0	Clear	
St. Louis, Missouri	29.12	739.6	29.66	753.4	75	23.9	81	S	30	13.4		2ck	5ks	SW	SW	0.73	18.5	Fair	
St. Paul, Minnesota	28.62	726.9	29.39	746.5	63	17.2	94	E	1	0.4			10ks		W	1.81	46.0	Cloudy	
Salt Lake City, Utah	25.87	657.1	30.20	767.1	45	7.2	61	Calm	0	0		2k	0	W		Inap.	Inap.	Clear	
San Antonio, Texas	29.20	741.7	29.86	758.4	80	26.7	78	SE	8	3.6			10s		SE	0	0	Cloudy	
San Diego, California	29.88	758.9	29.96	761.0	56	13.3	87	W	2	0.9			10s		W	0	0	Cloudy	
Sandusky, Ohio	29.22	742.2	29.86	758.4	68	20.0	70	S	21	9.4			10ks		SW	0.04	1.0	Threatening	
Sandy Hook, New Jersey	30.26	768.6	30.29	769.4	66	18.9	74	SE	8	3.6		5c	0	Calm		0	0	Fair	
San Francisco, California	29.95	760.7	30.02	762.5	57	13.9	69	SW	3	1.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	44	6.7	9	N	18	8.0		Haze	Haze	Calm	Calm	0.06	1.5	Dense haze	
Savannah, Georgia	30.14	765.5	30.22	767.6	80	26.7	51	E	8	3.6		1k	0	Calm		0	0	Clear	
Shreveport, Louisiana	29.71	754.6	29.92	760.0	77	25.0	82	S	6	2.7		2cs	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.23	767.8	30.27	768.8	75	23.9	64	SE	10	4.5		5k	Haze	Calm	Calm	0	0	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.02	737.1	29.66	753.4	71.5	21.9	80	S	24	10.7			10ks		SW	0.15	3.8	Cloudy	
Springfield, Massachusetts	30.20	767.1	30.33	770.4	59	15.0	82	Calm	0	0			10s		S	0	0	Cloudy	
Stockton, Texas	29.78	680.2	29.78	756.4	79	26.1	47	SW	20	8.9		5cs	0	SW		0	0	Fair	
Thatcher's Island, Mass.	30.26	768.6	30.32	770.1	64	17.8	78	S	5	2.2		5k	0	W		0	0	Fair	
Toledo, Ohio	29.10	739.1	29.76	755.9	67	19.4	79	S	21	9.4			10n		S	0.10	2.5	Light rain	
Tucson, Arizona	27.47	697.7	30.02	762.5	74	23.3	25	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.89	759.2	30.39	771.9	52	11.1	65	SW	6	2.7		2cs	0	Calm		0	0	Clear	
Uvalde, Texas	28.89	733.8	29.67	753.6	77	25.0	77	E	6	2.7		2ck	8s	Calm	S	0	0	Cloudy	
Vicksburg, Mississippi	29.77	756.1	30.01	762.2	77	25.0	86	S	8	3.6		0	2s		S	0	0	Fair	
Virginia City, Montana	24.43	620.5	29.91	759.7	34	1.1	70	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.59	751.6	29.95	760.7	58	14.4	63	SE	3	1.3		0	0			0	0	Clear	
Washington, D. C.	30.12	765.0	30.24	768.1	66	18.9	74	S	4	1.8		2ck	5s	NE	NE	0	0	Fair	
Wickenburg, Arizona					71	21.7	26	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.18	766.6	30.26	768.6	74	23.3	68	Calm	0	0		5c	0	S		0	0	Fair	
Winnemucca, Nevada	25.87	657.1	30.23	767.8	31	−0.6	48	NE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.29	769.4	30.32	770.1	62	16.7	56	S	4	1.8		1cs	0	Calm		0	0	Clear	
Yankton, Dakota	28.11	714.0	29.31	744.5	66	18.9	95	NE	13	5.8			10s		Calm	0.05	1.3	Cloudy	
Yuma, Arizona	29.71	754.6	29.85	758.2	79	26.1	6	N	19	8.5		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.01	559.0			56.0	13.3	72	Calm	0	0			10ks			0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.00	762.0	30.16	766.5	79	26.1	78	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	77	25.0	91	Calm	0	0		2c	2cs	Calm		0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.91	759.7	29.99	761.7	79	26.1	84	NE	4	1.8		8k	10s	E	NE	0.36	9.1	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	78	25.6	86	E			2	4c	5k	E		0	0	Fair	C. J. Hering.
Puerto Perrio, U.S.Col'bia	29.39	746.5	29.94	760.5	77	25.0	94	Calm			0		10s;ks			0	0		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		NE				2c	1d	SE	NE	0.04	1.	Fair	Earl Flint.
Santiago de Cuba, W. I.	29.99	761.7	30.02	762.5	78	25.6	82	Calm	0	0		8cs	4ks	NE	SE	0.700	17.78		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.81	759.2	29.94	760.5	33.0	0.6	95	E	4	1.8		3ck	1s	N	NE	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,674 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft, or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,586 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 m., or 139.2 mm. §The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass-scales. Owing to change of observers and instruments, the reduced pressures at Kingston, are now higher by 0.02 inch, than they have been since May 6th, 1880. Previous to Feb. 1st, 1880, the barometric observations of "James Gall" should be entirely rejected.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.12	765.0	79	26.1	82	SE	12	5.4			5d		SE					Fair	
§Navy Yard, Portsmouth, N. H.	30.33	770.4	57	13.9	69	NW	2	0.9			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.97	761.2	66	18.9	84	SW			1		0			0	0			Clear	
§Adams, N. 8° 19′, W. 84° 19′	29.91	759.7	79	26.1	86	SSW			2		10		SW					Cloudy	
§Alaska, Callao, Peru *†	29.92	760.0	62	16.7	88	Calm			0		10					Long	SW	Misty	
§Alert, Yokohama, Japan	29.90	759.4	70	21.1	80	WSW			1		0			0	0	Smooth		Clear	
§Alliance, N. 37° 45′, W. 62° 31′	30.14	765.5	67	19.4	64	N			6		5		N	Moderate		Broken	N	Fair	
§Ashuelot, Shanghai, China	29.75	755.6	68	20.0	90	E			1		10		E			None		Cloudy	
§Colorado, New York, N. Y.	29.99	761.7	65	18.3	84	SSW	3	1.3			2		WNW	0	0			Fair	
§Constitution, New York, N. Y.	30.28	769.1	65	18.3	73	SSW	3	1.3			2		Calm					Clear	
§Franklin, Off Navy Yard, Norfolk, Va	30.22	767.6	67	19.4	79	WSW	2.4	1.1			8			0	0			Fair	
§Independence, Mare I'd, Navy Yard, Cal.	30.02	762.5	62	16.7	100	SW	1.2	0.5			0			0	0			Clear	
§Jamestown, Sitka, Alaska *	29.99	761.7	44	6.7	92	W			1		10					Smooth		Rainy	
§Kearsarge, Hampton Roads, Va	30.29	769.4	69	20.6	80	SSW			2		8		SW			Smooth		Fair	
§Lackawana, La Union, San Salvador †	30.03	762.7	80	26.7	91	SW			1		5		SW					Fair	
§Marion, Port Stanley, Falkland I'ds	29.42	747.3	47	8.3	85	W			2		10			Blank	Blank	Smooth		Misty	
§Michigan, Erie, Pa	29.90	759.4	66	18.9	68	S			6		10		S					Cloudy	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.29	769.4	66	18.9	89	S			1		8		NW					Cloudy	
§Monocacy, Chefoo, China	29.84	757.9	71	21.7	80	S			2		8		S					Hazy	
§New Hampshire, Port Royal, S. C.	29.92	760.2	78	25.6	57	ENE	10	4.5			5		NE	0	0			Fair	
Nipsic, Leghorn, Italy	29.91	759.7	66	18.9	74	SW			3		8							D. clouds	
§Onward, Callao Bay, Peru †	29.97	761.2	62	16.7	88	Calm			0		10					Long	W	Cloudy	
§Palos, Shanghai, China	29.72	754.9	68	20.0	95	ESE			1		10		E					Rainy	
§Passaic, Washington, D. C.	30.25	768.3	68	20.0	79	SE			1		8		SE	0	0			Fair	
§Pensacola, San Francisco, Cal.	29.98	761.5	56	13.3	81	Calm			0		0					Smooth	S	Hazy	
§Portsmouth, N. 33 07′, W. 66° 30′	30.05	763.3	71	21.7	95	WSW			2		2		SW			Long	W	Clear	
§Powhatan, New York, N. Y.	30.28	769.1	66	18.9	74	SW			2		5?		S					Cloudy	
§Quinnebaug, Antwerp, Belgium	29.92	760.0	51	10.6	86	NW			3		10		NW					Drizzling	
§Richmond, N. 31° 27′, E. 124° 17′	29.73	755.1	67	19.4	100	ENE			2		10		E					Rainy	
§Rio Bravo, Brownsville, Texas †	30.03	762.7	83	28.3	87	SE	3	1.3			5		SE	0	0			Fair	
§Saratoga, Cadiz, Spain	30.13	765.3	66	18.9	68	NW			3		2			0	0			Clear	
§Shenandoah, Montevideo, Uruguay	30.12	765.0	59	15.0	94	N			2		2		Calm			Smooth		Fair	
§St. Louis, League Island, Pa	30.26	768.6	65	18.3	94	SE	4	1.8			5			0	0			Misty	
Swatara, N. 9° 37′ E. 106° 46′ †	29.78	756.4	83	28.3	83	W			4		2		NW			Smooth		Clear	
§Tennessee, New York, N. Y.	30.30	769.6	66	18.9	68	Calm			0		8		SSW			Smooth		Cloudy	
§Ticonderoga, Kobe, Japan	29.96	761.0	72	22.2	95	W			1		0					Smooth		Clear	
§Trenton, Villafranca, France	29.73	755.1	77	25.0	46	SSW			5		0			0	0	None		Clear	
§Vandalia, New London, Conn.	30.32	770.1	65	18.3	84	S			1		8		NNW					Cloudy	
§Wabash, Boston, Mass.	30.32	770.1	61	16.1	88	SW	4	1.8			5			0	0			Fair	
§Wachusett, Sandy Point, Strait of Magellan	29.54	750.3	41	5.0	91	WSW			1		5		S;W	0	0	Smooth		Clear	
Wyoming, Villafranca, France	29.75	755.6	71	21.7	49	SSW			6		2		SW			Mod'ate	SW	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 41° 49', W. 65° 56'	30.25	768.3	45	7.2		NW			3		0					Smooth		Clear.	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 44° 12', W. 88° 55'	30.38	771.6	65	18.3	80	SE			7		5		SE	0	0	Mod'ate	SE	Fair	
S. S. Ohio, Henry Morrison, N. 47° 33', W. 24° 27'.....†	30.65	778.5	66	18.9	94	N			1		2		N	0	0	Small	N	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newborn, W. Metzger, N. 33° 29', W. 118° 12'.....†	29.98	761.5	60	15.6	88	E			1		10		ESE			Gentle	W	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 42° 49', W. 51° 33'.....*	29.86	758.4	52	11.1	80	S			3		Fog			0	0	Light	SW	Foggy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 48° 05', W. 28° 33'	30.63	778.0	65	18.3	73	SW			1		2		S	0	0	Light	E	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Character.	Direction from—		
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 34° 47', E. 141° 29'.....†	30.00	762.0	71	21.7	85	E			1		2		E			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley.																			J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan,																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander N. 32° 42', W. 117° 16'....†	30.02	762.5	58	14.4		ESE			2		10		E					Cloudy	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, San Francisco, Cal.....†	29.99	761.7	50	10.0		NW			2		8		W					Cloudy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.84	757.9	76	24.4	95	NNE			1		8		E			Light	SE	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. H. Cobb, S. 34° 02′, E. 154° 20′.... †	30.12	765.0	64	17.8	83	Calm			0		10		Calm			Smooth	SW	Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 7° 22′, W. 80° 00′..... †	29.91	759.7	78	25.6	91	E			1		2		E	0	0	Mod'ate	S	Clear.	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China..... †	29.72	754.9	80	26.7	91	WSW			5		10		SW	Mod'ate	Mod'ate			Squally	
§ S. S. City of Sidney, H. C. Dearborn, N. 9° 50′, W. 162° 30′....*†	29.85	758.2	80	26.7		NE			7		10		NE	0	0	Heavy	NE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle.																			
§ S. S. Dakota, D. E. Griffiths, Tacoma, Washington Ter..... †	30.28	769.1	50	10.0	86	Calm			0		10							Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly San José, Guatemala...†	29.99	761.7	78	25.6	91	N			1		5cs		NNW	0	0	Light	S	Fair	
§ S. S. Idaho, E. Alexander, San Francisco, Cal..... †			57	13.9		SW			2		0							Clear	E. Alexander.
§ S. S. Zealandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 35° 16′, W. 75° 11′.....†	30.30	769.6	74	23.3		NE			1		2		NE	0	0	Long	ENE	Fine	A. R. Mehaffey.
Schr. Adule Fuller, J. Jorgensen, N. 39° 14′, W. 73° 33′.....†	30.30	769.6	65	18.3	73	SE	3	1.3		2c		Calm		0	0	Swell	E	Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Monabo, Porto Rico ....†	29.99	761.7	85	29.4		ENE			5		5		ENE	0	0	Mod'ate	SE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 13° 56′, W. 9° 02′.....*†	30.15	765.8	72	22.2		SE			1		2		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.21	767.3				E			7		8		E					Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin. N. 36° 50′ W. 73° 20′.....†	30.40	772.1	69	20.6		ENE			1		2		E	0	0	Smooth		Clear	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 42° 54′, W. 61° 01′.....	30.12	765.0	45	7.2	100	N			6		10			0	0	Mod'ate	N	Foggy.	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration has been recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 6, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.19	766.7	76.5	24.7	72	Calm			0		0			0	0	Clear.	Metge.
Algiers			30.20	767.1	69.1	20.6	74	NE			4		10			0	0	Covered	Nicolas.
La Calle			30.19	766.9	70.3	21.3	76	NE			2		6			0.106	2.7	Cloudy	Fonfrède.
Tunis			30.11	764 8															Jacques.
Sfax			30.14	765.5															Gaut.
Salda			30.16	766.1															Charon.
Tebessa			30.15	765.7	67.5	19.7	36	E			4		3			Inap.	Inap.	Pretty fair.	Watrin.
Geriville			30.18	766.6	55.6	13.1	63	E			5		6			0	0	Cloudy	Lonchamp.
Laghouat			30.14	765.5	60.4	15.8	76	N			1		10			0.256	6.5	Covered	Herlin.
Biskra			30.13	765.2	87.4	30.8	36	NW			1		3			Inap.	Inap.	Pretty fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Salda is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.39	746.6	29.93	760.2	64.8	18.2	73	SE			2		5			0.303	7.7	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.21	741.9	29.97	761.1	61.9	16 6	50	W	15.0	6.7			6			0.031	0.8		Dr. Wierzbicki.
Eperies	29.02	737.2	29.88	758.9	64.8	18.2	69	S			2		9ks			0.256	6.50		Julius Mikolik.
Gratz	28.80	731 5	30.05	763.2	54.9	12.7	85	SE			2		10			0.232	5.9		Andreas Rospini.
Hermannstadt	28.56	725.3	29.94	760 5	68.2	20.1	82	S			2		10			0.185	4.70		Prof. A. Gottschling.
Kremsmünster, Observatory	28.67	728.1	30.00	762.0	54.7	12.6	66	W			1		10			0.039	1.0		The Staff.
Lemberg	28.94	735.0	29.90	759.4	65.1	18.4	60	SW			2		7			0.598	15.2		Dr. T. Stanecki.
Pola	29.85	758.3	29.96	761 0	71.2	21.8	54	WSW			1		5			0	0		I.R. Hydrographic Office.
Szathmar	29.53	750.1	29.98	761.5	72.3	22.4	58	SW			4		7			0	0		Pet. Pancsics, S. J.
Szegedin	29.69	754.2	29.97	761.1	69.3	20.7	61	S			1		6			0.616	15.65		Karl Stancel.
Trieste	29.88	759.0	29.98	761.6	66.3	19.2	81	Calm			0		10			0.150	3.8	Raining	P. Busin.
Vienna	29.32	744.6	30.05	763.2	57.7	14.3	49	W			2		10			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.67	753.6	29.87	758.6	52.7	11.5	88	W			2		10		W	0.262	6.65	Raining	Royal Observatory.
Furnes	29.89	759.3	29.92	759.9	58.8	14.9	84	NW			5		10			0.248	6.3		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.‖
Aberdeen	29.49	749.0	29.59	751.6	53.6	12.0		WNW	12	5.4			6			0.170	4.32	D. clouds	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	29.68	753.9	29.90	759.4	55.0	12.8		WNW	21	9.4									S. Call.
Bidston (Liverpool Obs)			29.34	757.9	55.8	13.2		W	33	14.8			5					D. clouds	John Hartnup.
Bolton (Sharples)	29.28	743.7	29.80	756.9	54.9	12.7		W	43	19.2			8					Squally	Thomas Mackereth.
Bradford, Yorkshire																0.12	3.0		J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.02	762.5	82	27.8		SE			1		5					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.72	754.9	29.81	757.2	60.0	15.6		WSW			1		7					Showery	H. Todd.
Cardington			29.82	757.4	60.6	15.9		NW			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.74	755.4	29.87	758.7	56.1	13.4		W			2		10k					Gloomy	Lance Crp'l Hocker, R.E.
Donaghadee	29.82	757.4	29.86	758.4	56	13.3		NW			5		8					Showery	J. Mac Gowan.
Dover	29.83	757.7	29.86	758.4	57	13.9		W			4		10					Showery	J. Costello.
Falmouth (Observatory)	29.86	758.4	30.08	764.0	60.0	15.6		WNW			4		9					Overcast	The Staff.
Fort Napier, Natal	27.91	708.9	30.02	762.5	74.5	23.6		NE			2		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.74	755.4	29.97	761.2	87	30.6		SW			1		8					D. clouds	
Galway (Queen's College)			29.95	760.7	61	16.1		WNW			3		6					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.06	763.5	30.11	764.8	72.8	22.7		E			3		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.50	749.3	29.71	754.6	54.9	12.7		W			4		4k					D. clouds	D. G. Maclean.
Great Yarmouth	29.76	755.9	29.77	756.1	58	14.4		WNW			4		5					Squally	G. T. Watson.
Greenwich (Royal Obs'y)	29.69	754.1	29.86	758.4	61.4	16.3		W			4		10					Overcast	The Staff, for G.B.Airy.
Guernsey	29.86	758.4	30.08	764.0	56	13.3		WNW			3		8					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.26	768.6	30.38	771.6	60	15.6		NW			6		6k			0	0	Gloomy	M. P. Moyle.
Holyhead	29.87	758.7	29.91	759.7	57	13.9		W			3		3					D. clouds	John Tilston.
Jersey	29.84	757.9	30.13	765.3	53.6	12.0		W			5		10			Blank	Blank	Threatening	J. Fisher.
Kew (Observatory)	29.85	758.2	29.88	758.9	59.0	15.0		WNW	20	8.9			10					Threatening	The Met'g'l Office.
Leicester (Museum)	29.56	750.8	29.81	757.2	58.8	14.9		W			4		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.88	758.9	29.95	760.7	73	22.8		NE			2		0					Blue sky	A. King.
Nairn	29.51	749.5	29.61	752.1	53	11.7		NW			4		10					Overcast	W. D. Penny.
Nassau, Bahamas			30.08	764.0	80.5	26.9		NE			2		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.66	753.4	29.84	757.9	61.7	16.5		WSW			6	c	6k	W	W	0.029	0.74	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.33	745.0	29.85	758.2	57.9	14.4		NW			5		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.66	753.4	29.91	759.7	60.5	15.8		W			5		8					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.97	761.2	30.04	763.0	64.6	18.1		NW			4		10					Overcast	John Merrifield.
*Roche's Point	29.99	761.7	30.10	764.5	59	15.0		NW			4		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.81	757.2	29.97	761.2	54	12.2		W			4		7					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.54	750.3	49.5	9.7		WNW	21	9.4			4					Showery	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.92	760.0	29.98	761.5	84.2	29.0		SW			1		0					Blue sky	Serg't W. H. Lyne.
Sheffield	29.54	750.3	29.82	757.4	61.6	16.4		W			6		4			0.20	5.1	D. clouds	W. F. Cooper.
Silloth Rectory	29.73	755.1	29.76	755.9	59.6	15.3	80	SW			3		4			0.324	8.23	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.83	757.7	51.4	10.8		W	23	10.3			10					Squally	Rev. S. J. Perry.
Stratfield Turgiss	29.70	754.4	29.91	759.7	60.2	15.7		W			3		7					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.08	764.0	30.10	764.5	59	15.0		NW			6		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.10	764.5	30.13	765.3	56.4	13.6		NW	20	8.9			10			Blank	Blank	D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.04	763.0	30.08	764.0	93.5	34.2	47	WNW	4.4	2.0		0	2			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			29.52	749.8	50.0	10.0	81	N			2		10kn			0.05	1.3	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.68	753.9	56.5	13.6		W			4		2k?			0.03	0.8	Cloudy?	Andrew Gibb.
Mauritius (Observatory)	30.01	762.2	30.20	767.2	72.8	22.7	54	ESE	24.0	10.7		0	2		SE			Squally	C. Meldrum.
Melbourne (Observatory)	29.85	758.2	29.94	760.5	55.1	12.8	69	NNW	17	7.6			8			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.69	754.1	47	8.3		NW			4	5	5	NW		0.2	5.		J. Youngclause.
North Unst, Shetland I's			29.49	749.0				SW			2	2	4	Calm		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Dommewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 43° 50′, W. 34° 35′			30.44	773.2	65	18.3		ESE			6		10			5	ESE; confused	Raining	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, N. 16° 50′, W. 17° 45′			29.29	761.7	72	22.2		N			6		0					Misty	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.16	664.4	29.88	758.9	67.6	19.8	95	SE			1	8ck;s	1d						Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.48	748.9	29.83	750.1	55.8	13.2	53	NW			6		8						
Faröe	29.56	750.9	29.58	751.4	51.4	10.8	79	WSW			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.61	752.2	29.66	753.3	45.7	7.6	79	E			4		8						
Thorshavn (Faröe)	29.41	747.1	29.45	748.0	47.8	8.8	64	SW			5		6						
Vestervig	29.44	747.7	29.53	750.1	52.5	11.4	64	W			6		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.58	751.4	30.18	765.4	56.3	13.5	95	SW			2		5n		SW			Raining	Collignon, Director.
Amiens, Normal School	29.88	758.9	29.99	761.7	58.0	14.8	89	WNW			2		8		E	0	0	Very cloudy	Vaillant, Director.
Arras, Engineer School	29.67	753.6	29.93	760.2	53.2	11.8	87	W			3	k	9k		E	0.016	0.4		Klein, Commandant.
Avignon, Normal School	30.06	763.5	30.14	765.5	65.1	18.4	42	N			4		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.53	750.0	30.09	764.2	54.5	12.5	72	SW			1		10		W			Light rain	C. Saillard, Director.
Beauvais, Normal School	29.78	755.1	29.99	761.8	56.7	13.7	82	W			2		10		W			Raining	Frère Eugene Marie.
Besançon, Normal School	29.24	742.6	30.13	765.3	56.7	13.7	51	S			1		10		S	0.08	2.	Covered	A. Carré, Director.
Bordeaux	30.07	763.7	30.26	768.7	63.1	17.3	54	NW			1		10		NNW	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.31	744.4	30.28	767.8	59.7	15.4	66	N			1		10n	N	N	0.16	4.	Covered	Marlot, Director.
Bourges, Normal School	29.57	751.1	30.12	765.0	59.0	15	72	WSW			1		sn		WSW	0	0		M. Gence, Director.
Brest, Naval Observatory	29.95	760.7	30.19	766.9	59.4	15.2	87	WNW			3		10		WNW	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.97	761.1	30.04	763.0	56.8	13.8	91	SW			1		10		NW			Raining	M. Bietrix, Director.
Carcassonne, N. School	29.80	757.0	30.21	767.4	63.0	17.2	50	W			2		5		W	0.12	3.	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch	29.72	755.0	30.04	763.1	53.2	11.8	95	SSW			2		8		NW	0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.51	749.5	30.08	763.9	54.1	12.3	89	NW			2		10		SE	0.079	2.0	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.80	731.4	30.15	765.8	56.3	13.5	53	W			1		8			0.024	0.6		Alluard, Director.
Commercy, Normal School	29.18	741.1	30.04	763.0	52.5	11.4	83	WSW			6		kn	WSW	WSW	0.004	0.1		Dr. Coullet, Director.
Commune de Gréasque*	28.95	735.4	30.10	764.4	63.1	17.3	37	NW			3		2		NW	0.028	0.7		L. Kina, Director.
Grenoble, Normal School	29.37	746.1	30.17	766.4	58.3	14.6	50	WNW			1		ckn			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch	30.05	763.2	30.26	768.6	57.5	14.2	69	NE			3		10			0	0	Covered	Moullot, Director.
Le Mans, Normal School	29.84	757.8	30.15	765.7	55.8	13.2	95	W			3		10		W	0.004	0.1	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.23	742.5	30.15	765.8	55.9	13.3	84	SSW			1		10n		W			Covered	M. Cadoret, Director
Lorient, Naval Observatory	30.10	764.6	30.21	767.2	59.0	15.0	86	W			4		10		W	0	0	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.56	750.9	30.18	766.6	58.3	14.6	55	NW			1		10n			0.004	0.1	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Berigny.
Marseilles, Observatory	29.80	756.8	30.07	763.6	64.8	18.2	27	NW			4		2		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.98	736.1	30.02	762.4	57.9	14.4	61	SW			1		kn		SW	0.24	6.		Barbier, Director.
Mont-Louis	24.96	634.1	30.20	767.1	50.0	10.0	55	W	13.0	5.8			0			0	0		M. Cave, for Dr. Fines.
Nice	29.99	761.8	30.03	762.7	64.8	18.2	62	E			2		2	SE	SE	0	0	Clear.	Capt. Boissière, Director.
Nismes, Normal School	29.91	759.8	30.11	764.9	68.2	20.1	33	NW			4		0			0.59	1.5	Clear.	M. Boyer, Director.
Perpignan	30.09	764.3	30.19	766.9	65.1	18.4	35	NW	29.8	13.3			5	NW	NW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.67	575.8			38.8	3.8							1		NNE	0.165	4.2	Clear.	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.10	739.1	30.16	766.0	60.8	16	41	N			3		2	N	N	0	0	Slightly cld'y	M. Tallieu
Puy de Dome (Summit) Ob	25.20	640.2			36.9	2.7	96	W			6		10			0.118	3.0	Misty	Alluard, Director.
Rochefort, Naval Obs'y	30.25	768.4	30.28	769.2	59.9	15.5	71	WSW			2		10	WSW	WSW	0.008	2.	Covered	Lt. E. Demante, Director
Rouen, Normal School	29.93	760.2	30.02	762.4	55.8	13.2	92	W			1		10		W	0.405	0.9	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	30.10	764.4	30.12	765.1	56.3	13.5	88	WSW			4		8	WSW	WSW	0.036	0.92	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.89	759.2	30.06	763.4	53.8	12.1	95	WSW			2		10		WSW	0.102	2.6	Covered	E. Renou, Director.
Tarbes, Normal School	29.20	741.6	30.28	769.0	59.0	15	68	NE			1								T. Huguet, Director
Toulouse, Observatory	29.59	751.6	30.32	770.2	59.0	15.0	67	WNW			3		10			0	0	Covered	B. Baillaud, Dir.
Tours	29.95	760.8	30.15	765.8	60.3	15.7	62	W			1		10		W	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.56	750.8	30.05	763.3	53.6	12.0	93	W			3					0.117	2.96		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S	29.45	748.0	30.21	767.2	56.5	13.6	76	NNW			1		10			0	0	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	81.3	27.4										0.20	5.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.77	756.1			53.6	12.0	94	WSW			2		10		WSW	0.051	1.3	Sprinkling	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.79	756.6	29.81	757.2	67.8	19.9	88	NE	4.5	2.0			10			0.248	6.3	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.98	761.4	56.7	13.7	62	NW			6		8k	W		0.079	2.0	Raining	Prof. Dr. Hoh.
Berlin	29.59	751.6	29.76	755.9	56.5	13.6	67	SW			6		10			0.008	0.2	Raining	Prof. Dr. Arndt.
Breslau	29.39	746.6	29.92	760 0	59.4	15.2	45	WSW			5		8			1.578	40.07		Royal University Obs'y
Carlsruhe	29.56	750.8	29.98	761.5	59.0	15.0	66	SW			3		10	SW		0.161	4.1	Raining	Albert Senz.
Cassel	29.21	742.0	29.82	757.3	51.1	10.6	85	W			4		10	SW		0.005	0.12		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.76	755.9	30.13	765.2	58.3	14.6	70	SW			2		10			0.063	1.6	Raining	Physical Society.
Friedrichshafen	28.64	727.5	30.07	763.6	57.4	14.1	55	W			4		6	W		0.201	5.1		Chief Telegrapher Wilhelm.
Hamburg	29.58	751.4	29.65	753.2	55.4	13.0	94	SW			4		10			0.004	0.1		Dr. Reinhold Kleeman.
Kiel	29.61	752.2	29.63	752.6	51.8	11.0	88	SW			1		10			0.054	1.37		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.58	751.3	29.66	753.4	55.9	13.3	56	W			7		5	W		0.890	22.6		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.47	747.4	29.89	759.1	54.0	12.2	66	SW			4		10	WSW		0.020	0.5	Sprinkling	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.56	750.8	29.78	756.5	53.8	12.1	71	SSW			5		10ks	SSW		0.008	0.2	Raining	Dr. Assmann.
Memel	29.55	750.6	29.60	751.8	50.5	10.3	81	WSW			5		10n						Reinbrecht & Issermann.
Munich	29.21	716.5	30.08	763.9	56.1	13.4	49	W			3		9	SW		0.004	0.1		Dr. C. Lang.
Neufahrwasser	29.67	753.7	29.69	754.1	54.7	12.6	59	SW			5		10			0.374	9.5		A. Lothes.
Neustadt (Palatinate)	29.44	747.8	29.97	761.2	56.3	13.5	59	SW			1		10			0.008	0.2	Rainy	Reallehrer Dicknether.
Posen	29.54	750.4	29.83	757.7	53.8	12.1	66	W			8		10			0.780	19.8		Prof. Dr. Magener.
Strassburg (in Alsace)	29.50	749.3	30.04	763.1	60.1	15.6	47	SW			5		10			0.361	9.17	Raining	Imp. University Observatory.
Stuttgart	29.05	737.8	29.93	760.3	58.1	14.5	43	SW					10			0.059	1.5		Prof. Dr. Schoder.
Thorn	29 58	751.4	29.77	756.1	55.2	12.9	54	SW			5		10			0.744	18.9		Dr. Cunerth.
Weissenburg (Bavaria)	28.52	724.3	30.10	764.4	55.0	12.8	73	W	4.3	1.9			10		W	0.024	0 6	Light fog	Reallehrer J. Hopfner.
Wustrow	29.62	752.4	29.65	753.1	53.4	11.9	76	SW			8		10ks			0.118	3.0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.65	753.0	30.02	762.4	87.8	31.0		SW			1.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.49	749.0	29.54	750 3	87.5	30.8	84	S	33.6	15.0			8	SW	SSW	0	0	Misty	
Deesa	29.06	738.1	29.51	749.6	100.8	38.2	24	W	17.0	7.6			0			0	0	Misty	
Bombay	29.68	753.9	29.72	754 9	83.2	28.4	87	WSW	14.0	6.3			10		SW	2.96	75.2	Overcast	
Poona (Yarrowda)	27.88	708.2	29.73	755.2	78.3	25.7	80	W	17.0	7.6			9		W	0.16	4.1	D. clouds	
Belgaum	27.25	692.2	29.81	757.1	71.4	21.9	91	SW	8.0	3.6			7	SE	SW	0.37	9.4	Drizzling	
Lahore	28.65	727 8	29.34	745.2	112.3	44.6	13	Calm	1.0	0.4			0			0	0	Blue sky	
Roorkee	28.50	723 8	29.34	745.2	106.3	41.3	11	W	4 0	1.8						0	0	Hazy	
Agra	28.93	734 7	29.45	748 1	109.6	43.1	19	N	7.1	3.2						0	0		
Nagpur	28.50	723.8	29.48	748.9	103.2	39.6	31	SW	8.1	3.6			7		W	0	0	D. clouds	
Jubbulpore	28.15	715.1	29.45	748.0	102.1	38.9	24	NW	6.8	3.0			7			0	0	Overcast	
Lucknow	29.08	738.8	29.45	747.9	99.7	37.6	39	NW	2.2	1.0						0	0	Blue sky	
Allahabad	29.10	739 2	29.39	746 6	107.6	42.0	25	Calm	2.3	1.0			0			0	0	Misty	
Patna	29.24	742.7	29.42	747.1	95.3	35.2	56	E	2.2	1.0			2	E	E	0	0		
Hazaribagh	27.49	698.3	29.42	747.3	93.8	34.3	47	N	10.7	4.8			6		W	0	0		
Cuttack	29.44	747.8	29.52	749.8	90.5	32.5	71	S	9.0	4.0			0			0	0	Blue sky	
Calcutta (Alipore)	29.49	749.1	29.51	749.6	86.2	30.1	88	SSW	10.0	4.5			10	SW		0.07	1.8	Overcast	
Goalpara	29.13	740.0	29.54	750.3	74.8	23.8	97	NNW	2.7	1.2			10			3.56	90.4	Overcast	
Chittagong	29.54	750.2	29.63	752.5	85.3	29.6	85	SSW	7.6	3 4			10			0	0	Overcast	
Sibsagar	29.26	743.3	29.60	751.7	82.3	27.9	90	W	3.1	1.4			10	W	W	1.10	27.9	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m., Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.60	751.8	30.00	762.0	63.1	17.3	68	N	3.1	1.4			9			1.043	26.5		Prof. Giovanni Clodig.
Milan	29.44	747.7	29.95	760.6	67.1	19.5	51	WSW	6.9	3.1			5	SW		0.594	15.1		Prof. Schiaparelli.
Padua	29.85	758.2	29.96	761.0	66.4	19.1	56	NNE	5.6	2.5			6	N		0.008	0.2		Prof. Dott. Lorenzoni.
Moncalieri	29.07	738.3	29.96	761.0	63.5	17.5	63	SE	3.8	1.7			5	NW		0.256	6.5		Prof. P. F. Denza.
Genoa	29.84	758.0	30.04	762.9	63.1	17.3	53	SW	7.4	3.3			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.10	713.8	29.98	761.4	59.0	15.0	59	NW			4		0			1.197	30.4		Prof. D. C. Bruno.
Pesaro	29.93	760.2	29.98	761.4	63.5	17.5	77	W	13.0	5.8			9	S		0	0		Prof. Luigi Guidi.
Florence	29.74	755.4	29.99	761.8	64.4	18.0	71	SW			2		7			0.197	5.0		Cav. F. Meucci.
Leghorn	29.97	761.2	30.05	763.3	63.5	17.5	57	WNW	7.4	3.3			7	WSW		0.142	3.6		Prof. P. Monte.
Rome	29.92	759.9	30.09	764.3	70.9	21.6	44	WSW	15.0	6.7			8			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.4	30.03	762.7	74.7	23.7	41	E	15.4	6.9			7			0	0		Prof. C. De Giorgi.
Cosenza	29.13	739.8	29.98	761.5	83.8	28.8	68	NW	3.1	1.4			2			0	0		Prof. D. Conti.
Cagliari	29.89	759.3	30.09	764.2	79.2	26.2	24	NW			3		4	W		0	0		Prof. A. Pacinotti.
Palermo	29.85	758.2	30.10	764.5	69.6	20.9	80	ENE	8.7	3.9			6	WSW		0	0		Prof. G. Ciacciatore.
Syracuse	29.93	760.1	29.97	761.2	72.0	22.2	67	NNE	21.0	9.4			10	S		0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.53	750.1	30.04	763.1	68.0	20.0	55	W	7.4	3.3			10			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					66.1	18.9	89	ENE	10.5	4.7			10n			1.526	38.76	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.20	741.7	29.39	746.5	65.6	18.7	98	NNW	7.6	3.4			10n			2.095	53.21	Light rain	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.87	758.7	29.94	760.5	70.4	21.3	83	SSE	3.5	1.6			10s			2.100	53.34	Cloudy	The Staff.
Wakayama	29.50	749.3	29.55	750.6	67.0	19.4	86	NE	2.9	1.3			10n			0.838	21.28	Raining	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	24.97	634.3	29.93	760.3	60.8	16.0	69	NW			1	6c	0			0	0	Fair	Prof. L. Perez.
Guanaxuato	23.65	600.7			62.4	16.9	68	NE	6.7	3.0		10c	1k	E	NW;N	0	0	Covered	Vicente Fernandez.
Leon	24.36	618.8	29.93	760.2	66.9	19.4	74	SW			3	4c	2k			0	0	Fair	Prof. M. Leal.
Mazatlan	29.61	752.2	29.87	758.7	75.0	23.9	95	SE			1	9cs	0			0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.7	29.99	761.8	57.6	14.2	50	Calm	0	0		4c	0			0	0	Fair	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.94	608.0	29.84	758.0	67.1	19.5	72	N			2	6ck	0	NE		0	0	Almost cld'y	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.42	594.9	30.13	765.3	57.0	13.9	46	Calm	0	0		1ck	0	E		Inap.	Inap.	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.07	763.8	66.2	19.0	52	E			1		10		E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpam	29.84	758.0	29.85	758.3	80.2	26.8	89	SE			1	1	0	E		0	0	Clear	Prof. M. M. Cházaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.61	574.2	30.18	766.5	58.1	14.5	81	Calm			0	8c	0	E		0.79	20.0	Cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.85	758.3	29.85	758.3	58.3	14.6		W			5					0.236	6.0		
Groningen	29.63	752.7	29.69	754.1	54.9	12.7		WNW			3					0.122	3.1		
Helder	29.72	754.8	29.72	754.8	53.1	11.7		W			4					0.075	1.9		
Hellevoetsluis	29.81	757.2	29.81	757.2	55.0	12.8	83	W			5					0.087	2.2		
Utrecht	29.74	755.5	29.79	756.7	54.9	12.7	88	W			4		8			0.240	6.1	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.44	747.7	29.49	749.1	48.9	9.4	56	NW	2.2	1.0			1			0	0		
Brönö	29.45	747.9	29.48	748.9	48.9	9.4	62	N	18	8			2			0	0		
Christiania	29.25	742.9	29.39	746.5	60.6	15.9	58	SSE	7	3			6			0	0		
Tromsö	29.57	751.0	29.62	752.4	44.2	6.8	49	E	7	3			3			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.35	770.9	30.56	776.2	65.8	18.8	86	ENE			5		6			0.118	3.0		Dr. J. A. Sampaio.
Campo Major	29.19	741.3	30.17	766.3	75.2	24.0	30	ENE	6.3	2.8			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.26	768.6	30.35	770.8	67.1	19.5	59	SE	2.5	1.1			9			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.91	759.6	30.26	768.5	72.3	22.4	36	NNE	12.5	5.6			4	N		0	0		The Staff.
Ponta Delgada (Azores)	30.45	773.4	30.52	775.2	65.8	18.8	63	ESE	15.4	6.9			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Stations.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																				
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, St. Paul de Loando			29.96	761.0	75.2	24.0		W			2		0			1	W		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.04	763.1	64.0	17.8		NW			2		10			2	NW		Overcast	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.84	758.0	84.6	29.2		SW			2		10		SW	1	SW	4	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.51	749.5	29.53	750.0	60.4	15.8	83	Calm	0	0			9n						Capt. Sseliwerstow.
Astrakhan	30.34	770.5	30.25	768.4	78.3	25.7	35	SE	7	3			0						Capt. Wisganow.
Barnaul	29.21	742.0	29.69	754.0	71.8	22.1	63	NW	0	0			7					Light clouds	Meteorological Obs.
Dorpat	29.03	737.4	29.27	743.4	61.3	16.3	95	ESE	7	3			10n					Heavy rain.	Prof. Dr. Weihrauch.
Ekaterinburg	28.98	736.2	29.91	759.6	73.0	22.8	38	WSW	9	4		c;ck	7ks					Light clouds	Meteorological Obs.
Irkutsk																			Physical Cabinet.
Kasan	29.69	754.1	29.94	760.5	77.4	25.2	44	SW	7	3		7ck							Lagorio.
Kertch	30.10	764.6	30.12	765.1	74.3	23.5	80	S	4	2			3						Physical Cabinet.
Kieff	29.24	742.6	29.84	758.0	73.8	23.2	47	N	16	7		ck	8ks						Cand. Fatjanow.
Krotkowo*	29.61	752.2	30.06	763.5	82.9	28.3	11	WSW	7	3			8						Meteorological Obs.
Lugan	29.81	757.1	30.00	762.0	86.7	30.4	33	SW	22	10			5						Meteorological Obs.
Moscow	29.24	742.6	29.76	755.8	73.9	23.3	56	S	27	12			7ks						Meteorological Obs.
Nertchinsk																			Kurdakof.
Nikolaiev	29.97	761.3	30.04	763.1	73.4	23.0	63	S	45	20		ck	7ks						
Nikolaievsk, on the Amoor	29.94	760.5	30.03	762.7	50.5	10.3	85	SE	18	8			0						
Nukuss																			
Orenburg																			Physical Observatory.
Pekin (China)	29.55	750.6	29.69	754.2	78.1	25.6	35	SW	9	4			1s						Central Physical Obs.
St. Petersburg	29.38	746.2	29.39	746.6	62.8	17.1	74	NE	13	6			9n;						Teich, A. M.
Tashkend	28.24	717.3	29.71	754.7	82.4	28.0	65	NW	13	6			10						Physical Observatory.
Tiflis	28.76	730.6	30.13	765.2	76.8	24.9	54	S	9	4			4k						
Vladivostock																			Astronomical Obs.
Warsaw	29.43	747.5	29.85	758.1	58.5	14.7	52	WSW	20	9			3ks						Astronomical Obs.
Wilna	29.28	743.6	29.69	754.2	52.7	11.5	75	WSW	16	7			10					Heavy clouds.	Marks.
Yeniseisk	29.43	747.5	29.71	754.5	63.7	17.6	45	SSE	2	1			7						

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	30.08	764.0	30.18	766.6	67.6	19.8	40	SW	5.7	2.56			0			0.150	3.81	Clear.	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.33	770.3	30.38	771.7	66.2	19.0	66	NW	2.0	0.89			10			0.024	0.6	Covered	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.33	694.2			56.3	13.5	52	NE	9.5	4.26			0			0	0	Clear.	Domingo Martin y Peres.
Madrid, Royal Observatory	28.01	711.5	30.20	767.1	68.4	20.2	40	N	4.5	2.00		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y	30.04	763.1	30.19	766.8	77.9	25.5	48	SE	4.7	2.11		2	3	NW		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.42	747.3	30.32	770.0	62.8	17.1	55	N	13.7	6.1			2			0	0	Light clouds	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	760.9	30.02	762.6	80.6	27.0	72	ESE	3.1	1.4		0	k			0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.2	29.90	759.5	84.2	29.0	88	E	1.8	0.8			10n		W	0.10	2.6	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.12	765.1	30.22	767.6	71.6	22.0	71	S	4.2	1.9		0	4		E	0	0		Capt. C. Pulason, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.5	30.07	763.8	81.7	27.6	74	E	9.3	4.16		7cs	2k	E	E	0.010	0.25	D. clouds	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.66?	753.4?	29.66?	753.4?	49.3	9.6	.....	N	.....	.....	2	.....	7	.....	.....	0.079	2.0	.....	
Umea	29.57	751.0	29.62	752.3	45.7	7.6	64	ENE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Hernosand	29.56	750.7	29.61	752.0	43.0	6.6	94	NNE	.....	.....	4	.....	10	.....	.....	0.094	2.4	.....	
Stockholm	29.27	743.5	29.45	748.0	51.3	10.7	87	ENE	.....	.....	2	.....	5	.....	.....	0.008	0.2	Raining	
Wisby	29.40	746.7	29.46	748.2	49.3	9.6	87	W	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.34	745.1	29.42	747.3	54.0	12.2	67	N	9.4	4.2	.....	.....	10	.....	NE	0.030	0.75	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 41° 48′, W. 13° 53′	.....	.....	30.46	773.8	68.5	20.3	.....	NE	.....	.....	3	.....	6	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.68	728.5	30.10	764.4	58.5	14.7	87	SSW	.....	.....	1	.....	8	.....	.....	0.028	0.7	Covered		The Observatory.
Zurich	28.46	722.9	30.09	764.3	56.5	13.6	61	W	.....	.....	4	.....	6	.....	.....	0.220	5.6	Cloudy.		The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +2.4 mm.; Thermometer, —4.9 Cent. Relative Humidity, —19 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.03	762.7	85.6	29.8	42	ESE	5	2.0	.....	.....	0	.....	.....	0	0	.....		The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Valona	.....	.....	30.13	765.4	77.5	25.3	.....	W	.....	.....	2	.....	5	.....	.....	0	0	Cloudy		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y	.....	.....	29.93	760.3	78.4	25.8	69	N	.....	.....	2	.....	0	.....	.....	0	0	.....		Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Hon. J. Ferguson.
Chatham, N. B.	30.12	765.0	30.18	766.6	58.3	14.6	58	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.		G. A. Blair.
Charlottetown, P. E. Island	30.03	762.7	30.07	763.8	47.2	8.5	85	N	15	6.7	.....	.....	10s	.....	.....	0	0	Cloudy		H. J. Cundall, C. E.
Cornwall, Ontario	29.63	752.6	29.82	757.4	62.3	16.8	95	SW	.....	.....	1	.....	10n	.....	.....	0.494	12.55	Cloudy		James Smith, M. A.
Dalhousie, N. B.	29.99	761.7	30.16	766.1	54.0	12.2	87	W	.....	.....	1	0	0	.....	.....	0	0	Clear.		H. A. Johnson.
Father Point, Quebec	30.09	764.3	30.11	764.8	53.6	12.0	77	NE	2	0.9	.....	0	Haze	.....	.....	0	0	Clear		J. McWilliams.
Fredericton, N. B.	30.10	764.5	30.17	766.3	58.0	14.4	59	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.		Prof. Harrison.
Fort Garry, Manitoba	29.93	737.3	29.83	757.7	59.0	15.0	65	N	12	5.4	.....	2k	2ks	N	.....	0	0	Fair		James Stewart.
Granton, Ontario	28.54	724.9	29.59	751.6	68.0	20.0	84	S	.....	.....	4	3cs	0	.....	.....	1.45	36.8	Fair		James Grant.
Halifax, N. S.	29.96	761.0	30.08	764.0	55.0	12.8	56	NW	12	5.4	.....	.....	10ks	.....	.....	0	0	Cloudy		A. Allison.
Hamilton, Ontario	29.38	746.2	29.76	755.9	70.7	21.5	78	S	.....	.....	3	0	0	.....	.....	0.23	5.8	Clear.		Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		E. Weedon.
Kingston, Ontario	29.44	747.8	29.77	756.1	64.0	17.8	89	SE	7	3.1	.....	3ck	2ks	SE	.....	0.75	19.1	Fair		S. Woods, M. A.
Little Glace Bay, N. S.	.....	.....	.....	.....	.....	.....	.....	NE	5	2.2	.....	.....	10n	.....	.....	0.05	1.3	Overcast		C. H. Rigby.
Montreal, Quebec	29.72	754.9	29.91	759.7	60.5	15.8	88	S	13	5.8	.....	.....	10s	.....	.....	0.38	9.7	Cloudy		C. H. McLeod, C. E.
Moose Factory, Ontario	29.71	754.6	29.74	755.4	48.1	8.9	96	N	.....	.....	4	.....	10n	.....	.....	0.11	2.8	Raining		J. R. Nason.
Norwood, Ontario	29.03	737.3	29.70	754.4	64.0	17.8	90	SE	7	3.1	.....	5ck	5ks	SE	.....	0	0	Cloudy		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	28.92	734.6	29.58	751.3	65.5	18.6	92	SE	17	7.6	.....	2ck	0	SW	.....	0.30	7.6	Fair		Rev. R. Mosley.
Peterboro, Ontario	28.98	736.1	29.69	754.1	69.7	20.9	70	S	.....	.....	1	0	4ks	.....	.....	0.28	7.1	Fair		J. F. Jeffers, M. A.
Port Dover, Ontario	29.01	736.8	29.68	753.9	64.1	17.8	94	S	11	4.9	.....	5c	0	.....	.....	0.54	13.7	Fair		H. Morgan.
Port Stanley, Ontario	29.02	737.1	29.64	752.8	64.0	17.8	89	E	20	8.9	.....	5ck	0	SW	.....	0.96	24.4	Cloudy		M. Payne.
Quebec, Quebec	29.70	754.4	30.02	762.5	61.0	16.1	82	Calm	.....	.....	0	2k	5s	.....	.....	0	0	Fair		Capt. Ashe, R. N.
Rockliffe, Ontario	29.21	741.9	29.65	753.1	59.3	15.2	97	SE	6	2.7	.....	.....	10s	.....	.....	0.39	9.9	Cloudy		W. H. McIntyre.
St. John, N. B.	29.98	761.5	30.14	765.5	59.0	15.0	76	N	7	3.1	.....	0	0	.....	.....	0	0	Clear.		G. Murdock, C. E.
Saugeen, Ontario	28.82	732.0	29.49	749.0	73.1	22.8	75	S	22	9.8	.....	3cs	0	.....	.....	0.52	13.2	Fair		K. Stewart.
Stratford, Ontario	28.39	721.1	29.60	751.8	67.0	19.4	83	SW	16	7.2	.....	2ck	5s	SW	.....	0.802	20.34	Fair		C. J. MacGregor, M. A.
Sydney, C. B.	29.94	760.5	29.98	761.5	45.5	7.5	83	N	12	5.4	.....	.....	10s	.....	.....	0.01	0.3	Cloudy		T. C. Hill, C. E.
Toronto, Ontario	29.33	745.0	29.70	754.4	64.0	17.8	78	SE	7	3.1	.....	4cs	2ks	W	.....	0	0	Fair		Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Prof. John E. Oram, M. A
Woodstock, Ontario	28.59	726.2	29.60	751.8	71.1	21.7	71	SE	29	13.0	.....	5k	0	SW	.....	0.72	18.3	Fair		Professor Wolverton.
Yarmouth, N. S.	30.07	763.8	30.14	765.5	56.6	13.7	77	W	8	3.6	.....	2c	0	W	.....	0	0	Clear.		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.87	758.7	30.12	765.0	46	7.8	100	NE	.....	.....	.....	.....	Fog	.....	.....	1.09	27.7	Foggy		John Delany.
St. Pierre, N. F., l'Hôpital Maritime.	.....	.....	29.91	759.7	45.7	7.6	.....	SE	.....	.....	2	.....	.....	.....	.....	0	0	.....		The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.93	760.2	30.01	762.2	62	16.7	88	S	8	3.6			10n		Calm	0.27	6.9	Light rain	
Alpena, Michigan	28.74	730.0	29.35	745.5	57	13.9	94	SE	23	10.3			10s		Calm	2.54	64.5	Cloudy	
Akn, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.04	763.0	69	20.6	79	SE	9	4.0			10s		SE	0	0	Cloudy	
Atlantic City, New Jersey	30.08	764.0	30.09	764.3	65	18.3	89	SW	10	4.5		10k	0	Calm		0	0	Cloudy	
Augusta, Georgia	29.96	761.0	30.16	766.1	71	21.7	75	SE				2cs	0	SW		0	0	Fair	
Baltimore, Maryland	29.98	761.5	30.03	762.7	72	22.2	62	SW	14	6.3		8c	0	Calm		0	0	Fair	
Barnegat, New Jersey	30.03	762.7	30.05	763.3	65	18.3	89	SW	14	6.3			10s		SW	0.02	0.5	Cloudy	
Bismarck, Dakota	28.13	714.5	29.98	761.5	50	10.0	86	NW	6	2.7		0	0			0.01	0.3	Clear	
Boerne, Texas	28.54	724.9	29.81	757.2	72	22.2	90	E	2	0.9			10ks		SE	0	0	Cloudy	
Boise City, Idaho	27.19	690.6	30.15	765.8	45.5	7.5	58	Calm	0	0		0	5s		Calm	Inap.	Inap.	Fair	
Boston, Massachusetts	29.95	760.7	30.10	764.5	60	15.6	88	S	6	2.7			10s		SW	Inap.	Inap.	Cloudy	
Brackettville, Texas	28.81	731.8	29.82	757.4	77	25.0	77	E	10	4.5		0	0			0	0	Clear	
Breckenridge, Minnesota	28.72	729.5	29.68	753.9	52	11.1	73	N	16	7.2		0	0			0	0	Clear	
Brownsville, Texas	29.83	757.7	29.87	758.7	84	28.9	75	SE	1	0.4		2ck	5s	Calm	Calm	0	0	Fair	
Buffalo, New York	29.02	737.1	29.67	753.6	71	21.7	62	SW	11	4.9		5c	0	Calm		0.23	5.8	Fair	
Burkes, Arizona					60	15.6	39	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.66	753.4	29.94	760.5	63	17.2	78	S	19	8.5			10s		S	0.13	3.3	Cloudy	
Cairo, Illinois	29.48	748.8	29.86	758.4	70	21.1	66	SW	16	7.2		0	0			0.43	10.9	Clear	
Campo, California	27.34	694.4	29.91	759.7	40	4.4	82	E	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.15	765.8	30.15	765.8	74	23.3	63	SW	20	8.9		5k	0	E		0	0	Fair	
Cape Henry, Virginia	30.10	764.5	30.11	764.8	70	21.1	75	SW	18	8.0		8cs	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.15	765.8	30.16	766.1	74	23.3	68	SW	19	8.5		8k	0	W		0	0	Cloudy	
Cape May, New Jersey	30.03	762.7	30.06	763.5	67	19.4	84	S	16	7.2		10cs	0	S		0	0	Cloudy	
Castroville, Texas	29.18	741.1	29.85	758.2	81	27.2	70	E	3	1.3			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.08	764.0	30.10	764.5	78	25.6	78	SE	12	5.4		0	2ks		SE	0.04	1.0	Clear	
Charleston, South Carolina	30.06	763.5	30.12	765.0	76	24.4	82	S	8	3.6		0	0			0	0	Clear	
Charlotte, North Carolina	29.26	743.2	30.05	763.3	69	20.6	75	S	4	1.8		10cs	0	S		0	0	Cloudy	
Chattanooga, Tennessee	29.23	742.4	30.00	762.0	69	20.6	90	S	6	2.7			10n		SW	0.03	0.8	Light rain	
Cheyenne, Wyoming	24.11	612.4	30.05	763.3	45	7.2	46	NW	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Chicago, Illinois	28.58	725.9	29.21	741.9	64	17.8	73	S	28	12.5			10ks		SW	0.26	6.6	Cloudy	
Chincoteague, Virginia	30.10	764.5	30.11	764.8	67	19.4	93	SW	16	7.2		8ck	2s	Calm	SW	0	0	Cloudy	
Cincinnati, Ohio	29.08	738.6	29.69	754.1	72	22.2	67	S	16	7.2			10n		SW	0.01	0.3	Light rain	
Cleveland, Ohio	28.95	735.3	29.62	752.3	73	22.8	63	S	16	7.2		8cs	0	W		0.36	9.1	Fair	
Coleman City, Texas	28.23	717.0	29.85	758.2	68	20.0	60	SE	6	2.7		0	0			0	0	Clear	
Columbus, Ohio	28.87	733.3	29.65	753.1	72	22.2	54	S	16	7.2			10ks		SW	0	0	Cloudy	
Concho, Texas	28.13	714.5	29.77	756.1	67	19.4	55	NE	10	4.5		0	0			0	0	Clear	
Corsicana, Texas	29.58	751.3	30.04	763.0	71	21.7	85	N	2	0.9		0	2s		Calm	0	0	Clear	
Davenport, Iowa	28.63	727.2	29.22	742.2	62	16.7	83	W	20	8.9			10s		W	0.23	5.8	Cloudy	
Dayton, Washington T'y					52	11.1	86	S			1		10s		W	0.02	0.5	Cloudy	
Deadwood, Dakota	25.40	645.2			41	5.0	74	Calm	0	0		0	0			0.26	6.6	Clear	
Decatur, Texas	28.86	733.0	30.00	762.0	68	20.0	100	NE	4	1.8		0	0			0.51	13.0	Clear	
Delaware Breakwater, Del.	30.06	763.5	30.08	764.0	68	20.0	79	SW	24	10.7		5k	2s	SW	SW	0	0	Fair	
Denison, Texas	29.24	742.7	30.01	762.2	65	18.3	73	NW	3	1.3		0	0			0.09	2.3	Clear	
Denver, Colorado	24.82	630.4	30.04	763.0	50	10.0	58	S	3	1.3		8ck;cs	2s	W	W	0.03	0.8	Cloudy	
Des Moines, Iowa	28.67	728.2	29.50	749.3	59	15.0	76	NW	16	7.2		0	5s		NW	0.09	2.3	Fair	
Detroit, Michigan	28.84	732.5	29.46	748.3	71	21.7	75	S	20	8.9		2ck	8s	SW	S	0.40	10.2	Cloudy	
Dodge City, Kansas	27.46	697.5	29.75	755.6	50	10.0	65	NW	7	3.1		0	0			0	0	Clear	
Dubuque, Iowa	28.59	724.4	29.10	740.7	61	16.1	82	W	12	5.4			10s		W	0.28	7.1	Cloudy	
Duluth, Minnesota	28.71	729.2	29.35	745.5	55	12.8	87	N	24	10.7			10n		N	1.19	30.2	Heavy rain	
Eagle Pass, Texas	29.19	741.4	29.59	759.2	78	25.6	57	SE	8	3.6			10s		Calm	0	0	Cloudy	
Eastport, Maine	30.05	763.3	30.12	765.0	54	12.2	74	SW	4	1.8		0	0			0	0	Clear	
Edinburg, Texas					81	27.2	91	SE			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.00	736.6	29.67	753.6	74	23.3	55	S	20	8.9		2c	0	W		0.30	7.6	Fair	
Escanaba, Michigan	28.56	725.4	29.18	741.1	57	13.9	94	S	14	6.3			10s		SW	0.40	10.2	Cloudy	
Florence, Arizona	28.35	720.1	29.95	760.7	65	18.3	81	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.03	635.8	30.48	774.2	41	5.0	49	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.90	708.6	29.71	754.6	48	8.9	92	S	1	0.4		2cs	0	Calm		0.19	4.8	Fair	
Fort Custer, Montana	26.68	677.7			48	8.9	71	W	10	4.5		5k	0	W		0.03	0.8	Fair	
Fort Davis, Texas	25.26	641.6	30.22	767.6	63	17.2	47	NE	5	2.2			10s		Calm	0	0	Cloudy	
Fort Elliot, Texas	27.04	686.8	29.25	742.9	54	12.2	61	W	4	1.8		0	0			0	0	Clear	
Fort Gibson, Indian Ter	29.44	747.8	29.96	761.0	67	19.4	60	NW	6	2.7		0	0			0.26	6.6	Clear	
Fort Grant, Arizona	25.19	639.8	29.99	761.7	64	17.8	8	E	7	3.1		10ck	0	W		0	0	Cloudy	
Fort Griffin, Texas	28.78	731.0	30.03	762.7	59	15.0	76	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.32	693.9			50	10.0	77	Calm	0	0		0	0			0.01	0.3	Clear	
Fort McKavett, Texas	27.76	705.1	29.62	752.3	68	20.0	56	E	4	1.8		0	0			0.34	8.6	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.82	732.0	29.90	759.4	63	17.2	67	N	7	3.1		0	0			Inap	Inap.	Clear	
Fort Stevenson, Dakota	28.08	713.2			53	11.7	79	NW	4	1.8		0	0			0	0	Clear	
Fort Verde, Arizona					48	8.9	43	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.91	759.7	29.95	760.7	83	28.3	75	S	9	4.0		2ck	0	W		0	0	Clear	
Grand Haven, Michigan	28.65	727.7	29.25	742.9	66	18.9	74	S	26	11.6		2k	0	S		0.15	3.8	Clear	
Helena, Montana					50	10.0	39	SW	12	5.4			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	28.79	731.3	29.51	749.5	68	20.0	74	S	17	7.6		0	5ks		W	0.43	10.9	Fair	
Indianola, Texas	29.92	760.0	29.95	760.7	82	27.8	79	S	10	4.5		0	8ks		Calm	0	0	Fair	
Jacksboro, Texas	28.99	736.3	30.10	764.5	65	18.3	74	N	1	0.4		0	0			0	0	Clear	
Jacksonville, Florida	30.08	764.0	30.11	764.8	78	25.6	69	SE	6	2.7		0	0			0	0	Clear	
Keokuk, Iowa	28.84	732.5	29.41	747.0	63	17.2	72	W	22	9.8			10s		NW	0.05	1.3	Cloudy	
Key West, Florida	30.01	762.2	30.04	763.0	76	24.4	86	SE	13	5.8		0	8ks		E	0.24	6.1	Cloudy	
Kittyhawk, North Carolina	30.15	765.8	30.17	766.3	73	22.8	67	SW	17	7.6		2c	0	SW		0	0	Clear	
Knoxville, Tennessee	29.01	736.8	29.97	761.2	72.5	22.5	65	SW	20	8.9			10ks		SW	0	0	Threatening	
La Crosse, Wisconsin	28.89	721.1	29.07	738.4	60	15.6	94	W	16	7.2			10n		Calm	0.32	8.1	Light rain	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	56	13.3	24	Calm	0	0		0	5s		Calm	0	0	Fair	
Laredo, Texas	29.48	748.8	29.86	756.9	78	25.6	82	NE	6	2.7			10s		Calm	0	0	Cloudy	
Leavenworth, Kansas	28.95	735.3	29.76	755.9	62	16.7	61	NW	12	5.4		0	0			0.16	4.1	Clear	
Lewiston, Idaho	29.17	740.9	29.80	756.9	54	12.2	73	NE	2	0.9			10s		Calm	0	0	Cloudy	
Little Rock, Arkansas	29.63	752.6	29.93	760.2	71	21.7	89	W	4	1.8		0	0			0.23	5.8	Clear	
Los Angeles, California	29.55	750.6	29.89	759.2	60	15.6	94	W	2	0.9		0	Fog		Calm	0	0	Clear	
Louisville, Kentucky	29.17	740.9	29.70	754.4	68	20.0	79	S	24	10.7			10n		S	0.30	7.6	Light rain	
Lynchburg, Virginia	29.36	745.7	30.02	762.5	71	21.7	66	S	8	3.6		8c	0	W		0	0	Fair	
Madison, Wisconsin	28.09	713.5	28.99	736.3	60	15.6	94	SW	10	4.5			10n		Calm	0.56	14.2	Light rain	
Marquette, Michigan	28.52	724.4	29.18	741.1	49	9.4	100	NW	5	2.2			Fog			1.59	40.4	Dense fog	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.37	720.6	30.06	763.5	73	22.8	59	NE	6	2.7	.....	2k	2ks	S	S	Inap.	Inap.	Fair	
Memphis Tennessee	29.57	751.1	29.90	759.4	68	20.0	84	NW	4	1.8	.....	0	5s	.....	S	0.72	18.3	Fair	
Milwaukee, Wisconsin	28.42	721.9	30.09	764.3	61	16.1	82	S	22	9.8	.....	.....	10n	.....	S	1.15	29.2	Light rain	
Mobile, Alabama	29.99	761.7	30.03	762.7	81	27.2	74	S	8	3.6	.....	5k	0	SW	.....	0	0	Fair	
Montgomery, Alabama	29.84	757.9	30.07	763.8	76	24.4	81	SE	6	2.7	.....	0	8s	.....	S	0	0	Fair	
Morgantown, West Virginia	28.90	734.0	29.82	757.4	78	25.6	48	SW	10	4.5	.....	5cs	0	W	.....	0	0	Fair	
Mt Washington, N H	23.90	607.0	30.26	768.6	44	6.7	100	SW	30	13.4	.....	.....	10n;fg	.....	SW	0.17	4.3	Light rain	
Nashville, Tennessee	29.36	745.7	29.87	758.7	71	21.7	90	S	7	3.1	.....	.....	10n	.....	S	0.43	10.9	Light rain	
New Haven, Connecticut	29.95	760.7	30.06	763.5	64	17.8	89	S	6	2.7	.....	.....	10s	.....	Calm	0.05	0 8	Cloudy	
New London, Connecticut	30.06	763.5	30.10	764.5	61	16.1	88	S	3	1.3	.....	.....	10s	.....	Calm	0 01	0.3	Cloudy	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	80	26.7	78	S	3	1.3	.....	2c	0	Calm	.....	0.19	4.8	Fair	
Newport, Rhode Island	30.05	763.3	30.10	764.5	61.5	16.4	86	S	12	5.4	.....	.....	10s	.....	SW	0	0	Cloudy	
New River, North Carolina	.....	.....	.....	.....	75	23.9	63	S	.....	.....	2	10k	0	SW	.....	.....	.....	Cloudy	
New York, New York	29.88	758.9	30.05	763.3	64	17 8	89	S	6	2.7	.....	5ck	5s	Calm	Calm	0.01	0.3	Cloudy	
Norfolk, Virginia	30.07	763.8	30.12	765.0	75	23.9	64	SW	10	4.5	.....	1c	Haze	NW	Calm	0	0	Clear	
North Platte, Nebraska	27.10	688.3	29.67	753.6	47	8.3	88	NW	8	3.6	.....	2c	0	W	.....	0.46	11.7	Clear	
Olympia, Washington Ter	29.98	761.5	30.01	762.2	52.0	11.1	93	SW	2	0.9	.....	.....	10s	.....	SW	0.23	5.8	Cloudy	
Omaha, Nebraska	28.58	725.9	29.64	752.8	57	13.9	69	NW	24	10.7	.....	0	0	.....	.....	1.45	36.8	Clear	
Oswego, New York	29.51	749.5	29.82	757.4	67	19.4	79	SE	14	6.3	.....	5cs	0	SW	.....	1.17	29.7	Fair	
Pembina, Dakota	28.96	735.6	29.77	756.1	52	11.1	79	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Pensacola, Florida	30.02	762.5	30.05	763.3	79	26 1	78	S	7	3.1	.....	7k	0	SW	.....	0.04	1.0	Fair	
Philadelphia, Pennsylvania	29.99	761.7	30.04	763.0	69	20.6	75	SW	18	8.0	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Phœnix, Arizona	28.74	730.0	30.45	773.4	76	24.4	38	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.01	762.2	21	— 6.1	57	W	38	17.0	.....	2cs	0	Calm	.....	0.01	0.3	Clear	
Pilot Point, Texas	29.25	742.9	30.08	764.0	65	18.3	73	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Ploche, Nevada	24.03	610.4	29.80	756.9	47	8.3	21	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.05	737.9	29.82	757.4	71	21.7	53	S	12	5.4	.....	2cs	0	S	.....	0	0	Clear	
Port Huron, Michigan	28.86	733.0	29.47	748.5	71	21.7	71	S	24	10.7	.....	8cs	0	SW	.....	0.62	15.7	Fair	
Portland, Maine	30.05	763.3	30.10	764.5	62	16.7	77	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	29.99	761.7	30.06	763.5	55	12.8	90	NW	2	0.9	.....	.....	10s	.....	SW	0.04	1.0	Cloudy	
Portsmouth, North Carolina	.....	.....	.....	.....	73	22.8	67	S	17	7.6	.....	5k	0	S	.....	0	0	Fair	
Prescott, Arizona	24.75	628.6	30.11	764.8	46	7.8	26	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	77	25.0	77	E	8	3.6	.....	2ck;k	0	E;calm	.....	0.11	2.8	Clear	
Red Bluff, California	29.55	750.6	29.90	759.4	64.0	17.8	56	N	5	2.2	.....	5cs	0	NW	.....	0	0	Fair	
Rio Grande City, Texas	29.70	754.4	29.91	759.7	81	27.2	74	SE	8	3.6	.....	5cs	5s	Calm	Calm	0	0	Cloudy	
Rochester, New York	29.15	740.4	29.73	755.1	72	22.2	58	SW	8	3.6	.....	5ck	0	W	.....	0.61	15.5	Fair	
Roseburg, Oregon	29.54	750.3	30.12	765.0	47.5	8.6	89	Calm	0	0	.....	5ck	0	Calm	.....	0	0	Fair	
Sacramento, California	29.80	756.9	29.87	758.7	59	15.0	76	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.09	738.9	29.64	752.8	65	18.3	68	SW	20	8.9	.....	0	8ks	.....	W	0.40	10.2	Fair	
St. Paul, Minnesota	28.51	724.1	29.29	744.0	57	13.9	94	NW	22	9.8	.....	.....	10n	.....	NW	0.99	25.1	Light rain	
Salt Lake City, Utah	25 62	650.7	29.96	761.0	53	11.7	36	N	1	0.4	.....	7k	0	W	.....	0	0	Fair	
San Antonio, Texas	29.30	744.2	29.96	761.0	78	25.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.83	757.7	29.91	759.7	55	12.8	87	SW	1	0.4	.....	.....	Fog	.....	SW	0	0	Foggy	
Sandusky, Ohio	28.94	735.1	29.56	750.8	72	22.2	67	S	26	11.6	.....	10c	0	Calm	.....	0.09	2.3	Cloudy	
Sandy Hook, New Jersey	30.01	762.2	30.04	763.0	67	19.4	89	SW	15	6.7	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
San Francisco, California	29.89	759.2	29.96	761.0	51	10.6	93	SW	11	4.9	.....	.....	Fog	.....	W	0	0	Foggy	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	53	11.7	25	E	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Savannah, Georgia	30.04	763.0	30.13	765 3	79	26.1	74	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Shreveport, Louisiana	29.76	755.9	29.97	761.2	69	20.6	90	N	3	1.3	.....	.....	10s	.....	Calm	0.52	13.2	Cloudy	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.12	765.0	30.16	766.1	76	24.4	64	S	16	7.2	.....	5k	0	S	.....	0	0	Fair	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	28.86	733.0	29.50	749.3	64	17.8	73	SW	20	8.9	.....	.....	10s	.....	W	0.66	16.8	Cloudy	
Springfield, Massachusetts	29.95	760.7	30.08	764.0	62	16.7	83	S	5	2.2	.....	.....	10s	.....	SW	0.01	0.3	Cloudy	
Stockton, Texas	27.01	686.0	30.01	762.2	71	21.7	49	SE	8	3.6	.....	.....	10s	.....	SE	0	0	Cloudy	
Thatcher's Island, Mass	30.02	762.5	30.07	763.8	58	14.4	100	SE	12	5.4	.....	.....	10s	.....	SE	0	0	Cloudy	
Toledo, Ohio	28.80	731.5	29.43	747.5	73	22.8	72	S	24	10.7	.....	.....	10s	.....	S	0.18	3.3	Threatening	
Tucson, Arizona	27.45	697.2	30.00	762.0	72	22.2	12	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.66	753.4	30.14	765.5	57	13.9	69	NW	7	3.1	.....	.....	10s	.....	W	0	0	Cloudy	
Uvalde, Texas	29.01	736.8	29 79	756.7	80	26.7	78	SE	3	1.3	.....	5k	0	SE	.....	0	0	Fair	
Vicksburg, Mississippi	29.72	754.9	29.97	761.2	75	23.9	90	S	6	2.7	.....	.....	10s	.....	S	0	0	Cloudy	
Virginia City, Montana	24.26	616.2	29.94	760.5	45	7.2	58	W	1	0.4	.....	.....	10s	.....	W	0	0	Threatening	
Visalia, California	29.46	748.3	29.83	757.7	57	13.9	63	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.92	760.0	30.03	762.7	70	21.1	70	S	18	8.0	.....	5cs	0	SW	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	49	9.4	78	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.07	763.8	30.15	765.8	74	23.3	72	S	9	4.0	.....	5k	0	S	.....	0	0	Fair	
Winnemucca, Nevada	25.62	650.7	29.98	761.5	45	7.2	39	NE	11	4.9	.....	2ck	0	N	.....	0	0	Clear	
Wood's Holl, Massachusetts	30.08	764.0	30.12	765.0	63	17.2	78	S	15	6.7	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	28.52	724.4	29.78	756.4	55	12.8	68	NW	14	6.3	.....	0	0	.....	.....	1.35	34.3	Clear	
Yuma, Arizona	29.63	752.6	29.78	756.4	67	19.4	55	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.01	559.0	.....	.....	59.0	15.0	66	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.00	762.0	30.06	763.5	79	26.1	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Chas Hasselbrink.
§ Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	78	25.6	83	N	3	1.3	.....	8c	2s	Calm	N	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.90	759.4	29.98	761.5	79	26.1	82	NE	2	0.9	.....	8k	10s	E	NE	0.96	24.4	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.06	763.5	30.06	763.5	80	26.7	87	E	.....	.....	2	4ck	5k	E	.....	0.680	17.28	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.45	748.0	30.01	762.2	81	27.2	76	S	.....	.....	1	.....	4ks	.....	.....	0	0	.....	Francesco J. Cisneros
§ Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	SE	.....	.....	.....	.....	8k	.....	SE	0.12	3.	Covered	Earl Flint.
Santiago de Cuba, W. I.	29.99	761.7	30.02	762.5	78	25.6	82	N	1.2	0.5	.....	8ck	0	.....	.....	0	0	.....	Robert Mason
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	30.02	762.5	30.06	763.5	31.0	— 0.6	95	N	10	4.5	.....	2k	2s	NE	N	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.8 ft., or 519.5 m.; Boerne, 1,833 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.12	765.0	79	26.1	82	SE	11	4.9			2d		SE					Fair	
§ Navy Yard, Portsmouth, N. H.	30.11	764.8	62	16.7	77	SE	10	4.5			10			0	0			Threatening	
Naval Hospital, Yokohama, Japan	29.95	760.7	69.5	20.8	81	Calm			0		10s		SW	0	0			Gloomy	
§ Adams, N. 6° 27′, W. 83° 31′	29.89	759.2	79	26.1	91	SSW			3		10		SW					Cloudy	
§ Alaska, Callao, Peru *	29.94	760.5	62	16.7	88	W			1		2?					Long	SW	Cloudy?	
§ Alert, Yokohama, Japan	29.86	758.4	72	22.2	80	Calm			0		10		Calm	0	0	Smooth		Misty	
§ Alliance, N. 35° 37′, W. 59° 55′	30.14	765.5	64	17.8	68	N			3		2		N	0	0	Smooth	N	Fair	
§ Ashuelot, North Tree, Yangtszekiang river, China	29.81	757.2	70	21.1	75	N			1		0					None		Clear	
§ Colorado, New York, N. Y.	30.06	763.5	65	18.3	89	S	4	1.8			10		S	0.01	0.3			Misty	
§ Constitution, New York, N. Y.	30.04	763.0	65	18.3	89	SSW	4	1.8			10		SW					Drizzling	
§ Franklin, Off Navy Yard, Norfolk, Va	30.13	765.3	70	21.1	75	SSW	14.4	6.4			2		W	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.96	761.0	59	15.0	100	SW	3.6	1.6			9		SW	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.94	760.5	42	5.6	91	ENE			1		10					Moderate		Cloudy	
§ Kearsarge, Hampton Roads, Va.	30.14	765.5	70	21.1	85	SSW			3		0					Smooth		Clear	
§ Lackawana, La Union, San Salvador †	30.07	763.8	79	26.1	91	SW			1		8		SW					Fair	
§ Marion, Port Stanley, Falkland I'ds	29.90	759.4	38	3.3	??	WNW			1		5			Blank	Blank	Smooth		Fair	
§ Michigan, Erie, Pa.	29.61	752.1	72	22.2	62	SSW			6		2		W					Clear	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.07	763.8	65	18.3	100	S			1		10		S					Rainy	
§ Monocacy, Chefoo, China	29.82	757.4	65	18.3	94	WNW			1		0							Clear	
§ New Hampshire, Port Royal, S. C.	30.06	763.5	76	24.4	82	SSE	12	5.4			5		S	0	0			Fair	
Nipsic, Leghorn, Italy	30.02	762.5	64	17.8	58	NW			4		8							D. clouds	
§ Onward, Callao Bay, Peru †	29.95	760.7	63	17.2	83	NW			2		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.81	757.2	69	20.6	90	NNE			3		5?		N;E					Cloudy?	
§ Passaic, Washington, D. C.	30.08	764.0	71	21.7	75	SW			4		5		SW	0	0			Fair	
§ Pensacola, San Francisco, Cal.	29.93	760.2	52	11.1	93	SW			1–3		8					Smooth	S	Hazy	
§ Portsmouth, N. 33° 40′, W. 56° 50′	30.11	764.8	69	20.6	95	NNW			6		5		N			Heavy	N	Fair	
§ Powhatan, New York, N. Y.	30.07	763.8	66	18.9	59	S			2		8		S					Rainy	
§ Quinnebaug, Antwerp, Belgium	29.84	757.9	54	12.2	93	WSW			2		10		W					Raining	
§ Richmond, N. 32° 00′, E. 129° 10′	29.63	752.6	67	19.4	100	N			3		10			0.1	3.	Mod'ate	NE	Rainy	
§ Rio Bravo, Brownsville, Texas †	30.05	763.3	76	24.4	100	SE	1	0.4			5		SE	0	0			Fair	
§ Saratoga, Cadiz, Spain	30.20	767.1	72	22.2	85	WNW			2		2		WNW	0	0			Hazy	
§ Shenandoah, Montevideo, Uruguay	30.16	766.1	59	15.0	88	NE			3		8		Calm			Smooth		Fair	
§ St. Louis, League Island, Pa.	30.06	763.5	70	21.1	90	SSW	11	4.9			8		SW	0	0			Cloudy	
Swatara, Saigon, Siam †	29.80	756.9	85	29.4	79	W			2		10		W			Smooth		Cloudy	
§ Tennessee, New York, N. Y.	30.08	764.0	69	20.6	75	SSW			1–2		10		SSW	0.02	0.5	Smooth		Drizzling	
§ Ticonderoga, Kobe, Japan	29.68	753.9	69	20.6	100	NE			4		2		NE			Smooth		Rainy	
§ Trenton, Villafranca, France	30.02	762.5	75	23.9	52	ESE			2		0			2 hours	2 hours	None		Clear	
§ Vandalia, Newport, Rhode Island	30.13	765.3	60	15.6	94	S			2		10		W					Cloudy	
§ Wabash, Boston, Mass.	30.12	765.0	66	18.9	79	SW	5	2.2			10			0.01	0.3			Cloudy	
§ Wachusett, St. Nicholas Bay, Strait of Magellan	29.83	757.7	39	3.9	100	N			1		10			Drizzle.		Smooth		Cloudy	
Wyoming, Villafranca, France	30.01	762.2	63	17.2	72	E			1–2		2		E			Smooth	E	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. Halifax, N. S	30.02	762.5	42	5.6		NW			4		10		NNW					Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 46° 41', W. 33° 11'	30.50	774.7	64	17.8	83	SE			5		7		SE	0	0	Mod'ate	SE	Fair	
S. S. Ohio, Henry Morrison N. 45° 25', W. 31° 48'	30.58	776.7	69	20.6	95	SSW			2		2		SSW	0	0	Small	SSW	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newborn, W. Metzger, N. 31° 25', W. 117° 06'.....†	29.92	760.0	58	14.4	94	Calm			0		10		Calm			Gentle	WSW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 41° 54', W. 58° 32'.....*	29.74	755.4	66	18.9	59	W			4		10		W	Light	Light	Mod'ate	NW	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 48° 44', W. 21° 25'	30.52	775.2	62	16.7	83	NW			3		2		N	0	0	Light	NW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 35° 56', E. 146° 38'.....†	30.09	764.3	70	21.1	85	SE			4		8		SE			Light	SE	Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 38° 03', E 164° 57'....†	30.30	769.6	61	16.1	66	Calm			0		ks		SW	0	0	Smooth	W	Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan,																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Pedro, Cal.....†	29.96	761.0	62	16.7		E			2		10		E					Cloudy	
§ S. S. Idaho, E. Alexander																			
§ S. S. Orizaba																			
§ S. S. State of California, G. Debney, N. 40° 26', W. 124° 30'....†	30.02	762.5	46	7.8		NW			2		8		W			Rough	SW	Cloudy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.86	758.4	77	25.0	91	NNW			2		8		NE			Light	SSW	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.05	763.3	56	13.3	94	Calm			0		0					Smooth	SW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Panama, Panama. ....†	29.93	760.2	80	26.7	96	NW			1		2		NW	0	0	Smooth	S	Clear	B. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China.....†	29.73	755.1	82	27.8	87	SW			6		5		SW	0	0			Fair	
§ S. S. City of Sidney, H. C. Dearborn, N. 13° 59′, W. 160° 51′..*†	29.91	759.7	78	25.6		ENE			6		5		NE	0	0	Heavy	NE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 35° 20′, W. 121° 36′.....†	29.95	760.7	58	14.4	94	NW			4		10		NW	0	0	Mod'ate	W	Cloudy	
§ S. S. Dakota, D. E. Griffiths, Utsalady, Washington Te †	30.03	762.7	52	11.1	93	Calm			0		10							Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 14° 00′, W. 92° 14′.....†	29.93	760.2	81	27.2	87	SE			3		8s		E	Light	Light	Light	S	Clearing	
§ S. S. Idaho, E. Alexander, San Francisco, Cal..... †			51	10.6		SW			2		Fog							Fair	E. Alexander.
§ S. S. Zealandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 40° 35′, W. 69° 32′.....†	30.26	768.6	56	13.3		S			2		10		W			Smooth		Overcast	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 34° 18′, W. 76° 54′.....†	30.19	766.8	76	24.4		S			5		5		SSE	0	0	Short	SSE	Threatening	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, N. 40° 56′, W. 71° 34′.....†	30.11	764.8	66	18.9	74	S	8	3.6			10k		S	0	0	Short	S	Cloudy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. I†	30.03	762.7	85	29.4		NE			5		5		NE	0	0	Smooth		Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 12° 50′, W. 10° 20′.....*†	30.20	767.1	73	22.8		SE			1		5		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.31	769.9				E			5		8		E	Light	Light			Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 38° 37′ W. 73° 15′.....†	30.22	767.6	64	17.8		S			3		10		SW	0	0	Smooth		Cloudy	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 43° 37′, W. 60° 58′.....	30.00	762.0	34	6.7	100	NNW			4		10		N	2 h'rs	2 h'rs	Smooth		Fog & mist	James S. Garvin.

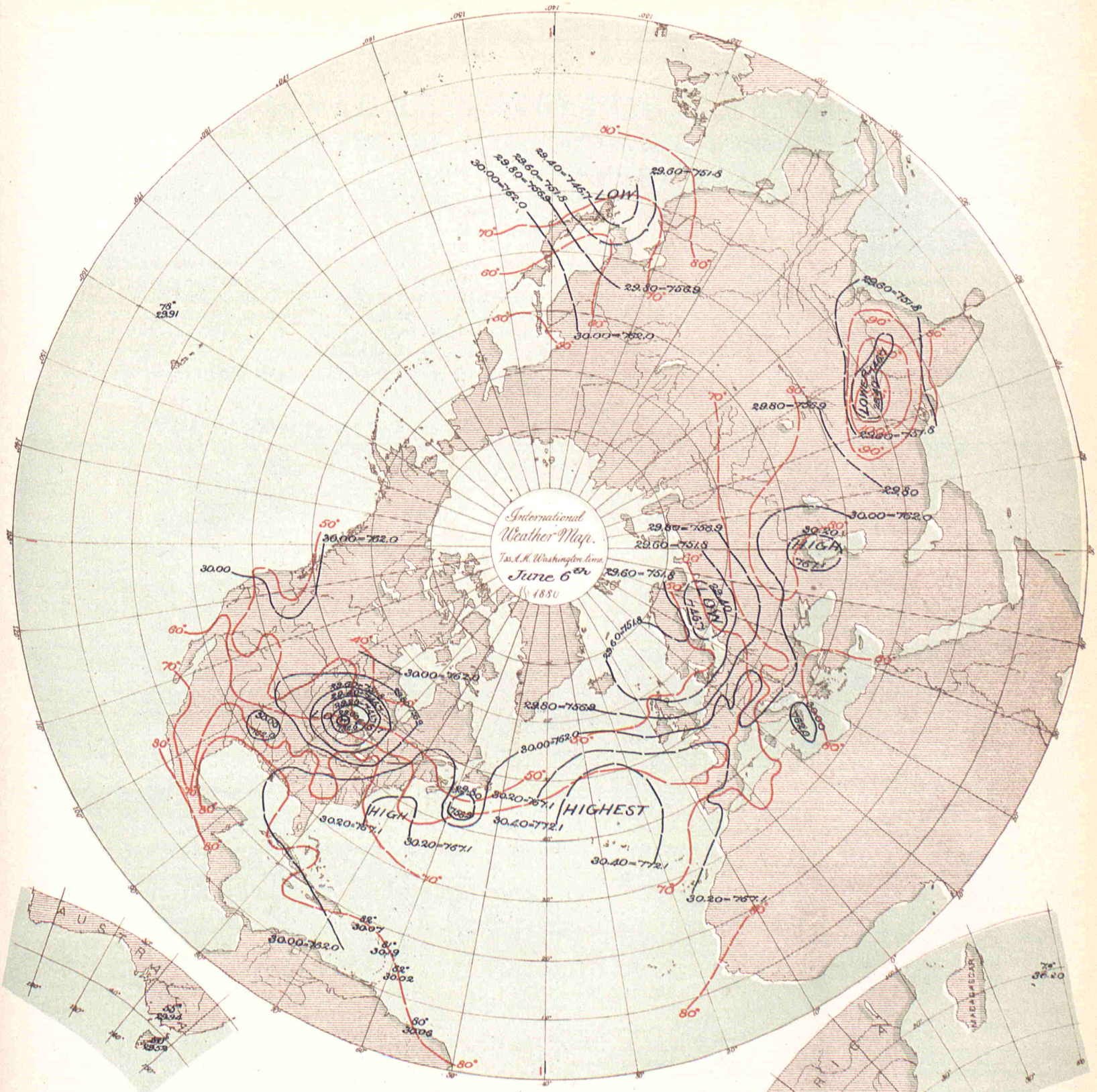
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration has been recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 7, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.21	767.4	76.1	24.5	69	NNW			2		8			0	0	Pretty fair.	Metge.
Algiers			30.24	768.0	67.6	19.8	65	ENE			4		10			0	0	Covered	Nicolas.
La Calle			30.21	767.2	71.4	21.9	62	NW			3		6			0	0	Cloudy	Fonfrède.
Tunis			30.16	766.1															Jacques.
Sfax			30.20	767.1															Gau.
Saida			30.21	767.2															Charon.
Tebessa			30.19	766.9	67.3	19.6	33	N			3		4			0	0	Cloudy	Watrin.
Geriville			30.25	768.3	54.0	12.2	87	N			2		3			0	0	Pretty fair	Lonchamp.
Laghouat			30.23	767.7	66.6	19.2	50	NNE			2		5			0.091	2.3	Cloudy	Herlin.
Biskra			30.21	767.3	81.3	27.4	45	NW			2		1			0	0	Very fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.49	749.0	30.02	762.6	67.5	19.7	67	SE			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.15	740.4	29.90	759.5	63.7	17.6	51	SW	14.1	6.3			3			0	0		Dr. Wierzbicki.
Eperies	29.03	737.3	29.88	759.0	66.6	19.2	57	S			2		7s;cs			0.315	8.00		Julius Mikolik.
Gratz	28.76	730.4	29.97	761.3	66.6	19.2	63	ENE			2		6			0.177	4.5		Andreas Rospini.
Hermannstadt	28.64	727.5	30.04	763.0	66.7	19.3	55	NW			5		3			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.62	726.9	29.93	760.3	61.0	16.1	64	WNW			1		10			0	0		The Staff.
Lemberg	28.89	733.7	29.84	758.0	65.5	18.6	57	NW			3		9			0.008	0.2		Dr. T. Stanecki.
Pola	29.98	761.4	30.09	764.2	68.7	20.4	63	SSW			1		2			0	0		I.R.Hydrographic Office.
Szathmar	29.54	750.4	30.00	761.0	68.7	20.4	67	W			5		8			0.669	17.0		Pet. Pancsics, S. J.
Szegedin	29.74	755.4	30.01	762.3	66.9	19.4	60	SW			1		6			0	0		Karl Stancel.
Trieste	30.00	762.0	30.40	764.6	66.0	18.9	69	NW			1		1			0	0		P. Busin.
Vienna	29.26	743.1	30.00	762.0	66.9	19.4	47	W			3		10			0.016	0.4		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.50	749.4	29.70	754.4	52.3	11.3	87	SW			6		10		SW	0.648	16.45	Light rain	Royal Observatory.
Furnes	29.65	753.1	29.67	753.7	56.1	13.4	89	SW			6		10			0.343	8.7		M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 7, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.33	745.0	29.42	747.3	49.1	9.5		SSW	10	4.5			9			0.540	13.72	Rain & hail.	W. Boswell.
Ardrossan	29.51	749.5	29.52	749.8	53	11.7		WNW			3		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.42	747.3	29.65	753.1	54.6	12.6		W	13	5.8			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.62	752.3	51.5	10.7		W	33	14.8			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.03	737.3	29.54	750.3	50.8	10.4		NW	18	8.0			8					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.16	740.7	29.56	750.8	54.1	12.3	64	NW			3		4			0.01	0.3	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	30.01	762.2	30.04	763.0	84.5	29.2		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.44	747.8	29.54	750.3	61.0	16.1		W			3		7						H. Todd.
Cardington			29.55	750.6	61.0	16.1		NW			7		5					D. clouds	John McLaren.
Chatham (School M. E.)	29.48	748.8	29.60	751.8	63.0	17.2		SW			7		8k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.58	751.3	29.62	752.3	56	13.3		WNW			4		8					Overcast	J. Mac Gowan.
Dover	29.59	751.6	29.62	752.3	55	12.8		WSW			6		8					Showery	J. Costello.
Falmouth (Observatory)	29.67	753.6	29.90	759.4	58.8	14.9		WNW			6		7					Squally	The Staff.
Fort Napier, Natal	27.89	708.4	30.09	764.3	71.8	22.1		SW			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.76	755.9	29.99	761.7	86	30.0		SE			1		8					Drizzling	
Galway (Queen's College)			29.75	755.6	53	11.7		WNW			5		8					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.07	763.8	30.12	765.0	71.4	21.9		NE			2		2					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.29	744.0	29.50	749.3	53.5	12.2		W			3		4k					D. clouds	D. G. Maclean.
Great Yarmouth	29.46	748.3	29.46	748.3	53	11.7		NW			4		6					Thunder-storm	G. T. Watson.
Greenwich (Royal Obs'y)	29.42	747.3	29.58	751.3	63.5	17.4		WSW			6		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.66	753.4	29.88	758.9	55	12.8		WSW			6		10					Squally	Dr. S. E Hoskins, F.R.S.
Helston	30.09	764.3	30.21	767.3	61	16.1		WNW			6		3ck			0	0	Fine	M. P. Moyle.
Holyhead	29.64	752.8	29.68	753.9	56	13.3		W			4		3					D clouds	John Tilston.
Jersey	29.65	753.1	29.94	760.5	54.5	12.4		WSW			7		10			Blank	Blank	Squally	J. Fisher.
Kew (Observatory)	29.56	750.8	29.96	761.0	63.0	17.2		WSW	32	14.3			9					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.30	744.2	29.54	750.3	54.1	12.3		NW			5		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.91	759.7	29.98	761.5	71	21.7		NE			3		0					Blue sky	A. King.
Nairn	29.32	744.7	29.41	747.0	53	11.7		WNW			3		2					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.09	764.3	81.5	27.5		SE			1		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.42	747.3	29.61	752.1	55.4	13.0		NW			4		10kd		WNW	0.347	8.82	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.11	739.4	29.63	752.6	52.7	11.5		WNW			6		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.38	746.2	29.64	752.8	60.5	16.1		W			6		3					Blue sky	The Staff, for E. J. Stone, Esq
Plymouth	29.76	755.9	29.83	757.7	60.6	15.9		W			5		10					Overcast	John Merrifield.
*Roche's Point	29.78	756.4	29.89	759.2	58	14.4		NNW			6		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.64	752.8	29.89	759.9	53	11.7		WNW			5		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.40	746.7	48.5	9.1		NNW	9	4.0			5					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.85	758.2	29.92	760.0	87.0	30.6		Calm			0		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.30	744.2	29.58	751.3	55.9	13.3		W			4		9			0.06	1.5	Raining	W. F. Cooper.
Silloth Rectory	29.50	749.3	29.53	750.0	56.0	13.3	76	W			3		2			0.023	0.59	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.60	751.8	51.5	10.8		N					7					Squally	Rev. S. J. Perry.
Stratfield Turgiss	29.44	747.8	29.65	753.1	62.4	16.9		W			6		6					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.91	759.7	30.93	760.2	62	16.7		W			7		5					D. clouds	W. Newcombe.
Valencia (Observatory)	29.90	759.4	29.92	760.0	56.7	13.7		W	27	12.1			7			Blank	Blank	Squally	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.12	765.0	30.16	766.1	68.5	20.2	65	SSW	8.1	3.6		9	10			0	0	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			29.94	760.5	50.0	10.0	75	N			2		10kn			0.02	0.5	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.48	748.8	56.0	13.3		W			4		4k			0	0	H'vy clouds	Andrew Gibb.
Mauritius (Observatory)	30.04	763.0	30.23	767.8	70.3	21.3	68	SSE	18.0	8.0			10		ESE			Drizzling	C. Meldrum.
Melbourne (Observatory)	29.78	756.4	29.88	758.9	49.0	9.4	89	W	11	4.9			8			0.31	7.9	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.53	750.0	48	8.9		NW			4	5	3	NW		0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.40	746.7				E			4	4	5	Calm		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		Observer
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Tommewyne				Capt. Jas. Buchan.
Ship British Commodore, N. 45° 35′, W. 32° 05′	5	S	D. clouds	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, N. 21° 08′, W. 17° 39′			Misty	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 5 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	67.6	19.8	93	SE			2	8c;ck				0.20	5.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.51	749.5	29.56	750.7	51.1	10.6	73	SW			4		10					Rain & hail.	
Faröe	29.48	748.9	29.50	749.4	55.2	12.9	69	W			4		6						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.88	758.9	29.92	760.0	46.0	7.8	67	NE			8		8						
Thorshavn (Faröe)	29.54	750.2	29.57	751.1	45.9	7.7	71	NE			3		7						
Vestervig	29.36	745.7	29.45	748.1	52.0	11.1	70	WSW			4		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.47	748.6	30.02	762.6	59.9	15.5	95	SW			4		8n		SW	0.047	1.2	Raining	Collignon, Director.
Amiens, Normal School	29.72	754.9	29.83	757.6	58.8	14.8	82	SSW			6		5		E	0	0	Cloudy	Vaillant, Director.
Arras, Engineer School	29.60	751.9	29.86	758.5	52.7	11.5	82	W			6	c	4kn	E		0.177	4.5		Klein, Commandant.
Avignon, Normal School	30.06	763.4	30.13	765.4	75.9	24.4	46	N			1		2		N	0	0	Partly cld'y	Giraud, Director.
Bar-sur-Seine	29.48	748.7	30.03	762.8	58.5	14.7	78	SW			1		10		W	0.315	8.0	Covered	C. Saillard, Director.
Beauvais, Normal School	29.61	752.2	29.88	758.9	59.4	15.2	71	WSW			3		10		W	0.138	3.50	Covered	Frère Eugene Marie.
Besançon, Normal School	29.22	742.3	30.11	764.7	58.5	14.7	73	SSW			2		10		SSW	0.59	15.	Covered	A. Carré, Director.
Bordeaux	30.02	762.4	30.21	767.4	64.6	18.1	68	W			3		10		WSW	0.091	2.3	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.28	743.7	30.21	767.2	61.9	16.6	73	S			2		10cn	SW	SW	0.165	4.2	Covered	Marlot, Director.
Bourges, Normal School	29.58	751.3	30.13	765.2	58.6	14.8	86	SSW			3	ck		SSW		0.457	11.6		M. Gence, Director.
Brest, Naval Observatory	29.82	757.4	30.07	763.6	58.3	14.6	84	W			4		10		W	0.049	1.25	Misty	Ch. de Rermaree, Dir
Caen, Normal School	29.82	757.5	29.89	759.3	55.0	12.8	95	SW			1		10		WSW	0.063	1.6	Covered	M. Bletrix, Director.
Carcassonne, N. School	29.78	756.5	30.19	766.7	71.2	21.8	55	W			2		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.63	752.6	29.95	760.8	60.8	16.0	66	SSW			4		8		NW	0.386	9.8	Very cloudy	Jadot, Director
Chartres, Normal School	29.26	743.1	29.81	757.2	61.7	16.5	77	SW			2		10		E	0.047	1.2	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.89	731.4	30.13	765.4	61.3	16.3	60	W			1		10			0	0		Alluard, Director.
Commercy, Normal School	29.10	739.2	29.96	760.9	55.8	13.2	68	W			3		10n		W	0.303	7.7	Raining	Dr. Coullet, Director.
Commune de Gréasque*	28.99	736.4	30.13	765.4	70.2	21.2	36	NW			4		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.36	745.7	30.11	764.7	69.4	20.8	73	WNW			1		0kn		SE	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.95	760.8	30.17	766.2	58.6	14.8	91	SSW			4		10			0.047	1.2	Covered	Mouillot, Director.
Le Mans, Normal School	29.72	755.0	30.09	762.8	59.5	15.3	94	W			2		10		WSW	0.059	1.5	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.21	742.0	30.13	765.2	59.9	15.5	78	W			2		10n		W			Covered	M. Cadoret, Director
Lorient, Naval Observatory	30.01	762.2	30.11	764.8	60.4	15.8	75	W			8		10		W	0.016	0.40	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.54	750.2	30.18	766.6	67.8	19.9	55	SW			1		5n			0.012	0.3	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.84	757.9	30.10	764.6	73.2	22.9	36	NW			4		2		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.90	734.1	29.94	760.4	56.8	13.8	80	SW			3		kn		SW	0	0		Barbier, Director.
Mont-Louis	24.99	634.8	30.23	767.8	55.8	13.2	68	E	9.4	4.2			5		NE	0	0		M. Cave, for Dr. Fines.
Nice	30.07	763.7	30.11	764.7	68.7	20.4	75	SE			3		2	SE	SE	0.031	0.8	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.95	760.7	30.15	765.8	72.5	22.5	51	NW			1		5		NW	0	0	Cloudy	M. Boyer, Director.
Perpignan	30.08	764.1	30.19	766.7	70.0	21.1	46	NE	15.0	6.7			2	N	NW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.71	576.8			44.2	6.8							1		NNW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.11	739.3	30.15	765.9	66.2	19	46	N			1		10	N	N	0	0	Covered	M. Tallieu
Puy de Dome (Summit) Ob	25.20	640.0			41.0	5.0	100	W			6		10			0.220	5.6	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.19	766.7	30.22	767.5	63.3	17.4	76	WSW			1		10	W	WSW	0.12	3.	Covered	Lt E. Devante, Director
Rouen, Normal School	29.98	761.6	30.07	763.8	57.4	14.1	81	S			2		10		W	0.193	4.9	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.95	760.8	29.98	761.6	57.9	14.4	76	WSW			6		8	WSW	WSW	0.031	0.80	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.78	756.4	29.95	760.6	59.9	15.5	73	WSW			3		10		W	0.035	0.9		E. Renou, Director.
Tarbes, Normal School	29.19	741.4	30.27	768.9	57.2	14	78	W			1								T. Huguet, Director
Toulouse, Observatory	29.57	751.1	30.30	769.6	63.7	17.6	66	WNW			3		8			0	0	Very cloudy	B. Bailland, Dir.
Tours	29.75	755.7	29.95	760.7	61.9	16.6	67	W			3		10		W	0.059	1.5	Covered	M. de Tastes.
Versailles, Observatory	29.45	748.1	29.95	760.6	57.6	14.2	78	W			3					0.026	0.65		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N. S	29.54	750.4	30.24	768.1	66.2	19	58	WSW			1		8		SW	0	0	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.24	768.0	30.26	768.7	82.4	28										0	0		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.66	753.4			60.1	15.6	72	SW			2		10		WSW	0.035	0.9	Sprinkling	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.80	757.0	29.83	757.6	67.1	19.5	87	SE	5.4	2.4			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,206.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper.	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Hamberg	29.00	736.7	29.86	758.5	56.1	13.4	87	SW			6		8n	SW		0.169	4.3	Raining	Prof. Dr. Hoh.
Berlin	29.54	750.4	29.71	754.7	63.5	17.5	45	SW			5		9			0.189	4.8	Raining	Prof. Dr. Arndt
Breslau	29.34	745.3	29.87	758.7	59.9	15.5	62	SW			2		6			0.023	0.59		Royal University Obs'y
Carlsruhe	29.49	749.1	29.92	759.9	55.6	13.1	96	SW			2		10	SW		0.370	9.4	Raining	Albert Senz.
Cassel	29.13	740.0	29.74	755.3	55.0	12.8	82	SW			4		10	SW		0.222	5.66		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.53	750.0	29.89	759.2	61.2	16.3	56	SW			3		10			0.307	7.8	Raining	Physical Society.
Friedrichshafen	28.50	726.1	30.00	762.1	60.4	15.8	80	SW			6		10	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.57	751.0	29.64	752.8	53.6	12.0	84	WSW			5		10			0.236	6.0		Dr. Reinhold Kleeman
Kiel	29.56	750.8	29.58	751.2	57.7	14.3	56	SW			3		10			0.144	3.66		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.62	752.3	29.70	754.4	53.2	11.8	82	SW			6		8	W		0.075	1.9		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.39	746.4	29.80	757.0	59.0	15.0	67	W			2		10	W		0.059	1.5	Raining	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.53	750.1	29.76	755.8	59.4	15.2	52	SSW			4		10ks	SSW		0.157	4.0	Light rain	Dr. Assmann.
Memel	29.62	752.3	29.67	753.5	52.7	11.5	100	SW			3		10n					Raining	Reinbrecht & Issermann.
Munich	28.16	715.3	30.02	762.6	60.8	16.0	57	W			6		10	W		0.035	0.9		Dr. C. Lang.
Neufahrwasser	29.69	754.0	29.70	754.4	56.1	13.4	69	W			4		10			0.071	1.8	Raining	A. Lothes.
Neustadt (Palatinate)	29.35	745.4	29.87	758.7	60.1	15.6	66	W			2		10	W		0.220	5.6		Reallehrer Dicknether.
Posen	29.50	749.2	29.78	756.4	57.9	14.4	65	W			4		9			0.031	0.8		Prof. Dr. Magener.
Strassburg (in Alsace)	29.46	748.3	30.00	762.1	57.9	14.4	80	SSW			5-6		10	SW		0.128	3.25	Raining	Imp. University Observatory.
Stuttgart	28.99	736.3	29.88	759.0	57.2	14.0	84	W			4		10			0.236	6.0		Prof. Dr. Schoder.
Thorn	29.57	751.0	29.75	755.7	57.2	14.0	64	SW					5			0.126	3.2		Dr. Cunerth.
Weissenburg (Bavaria)	28.44	722.4	30.02	762.4	55.4	13.0	87	W	4.7	2.1			10		W	0.138	3.5	Raining	Reallehrer J. Hopfner.
Wustrow	29.69	751.8	29.93	752.5	57.0	13.9	58	SW			4		8ks			0.079	2.0		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.61	752.1	29.98	761.6	87.4	30.8		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.49	749.1	29.54	750.4	86.8	30.4	88	S	36.4	16.3			7	SSW		0	0	Misty	
Deesa	29.08	738.5	29.53	750.0	96.9	36.1	36	SW	22.1	9.9			2	SW		0	0	D. clouds	
Bombay	29.71	754.6	29.75	755.5	86.4	30.2	76	W	15.0	6.7			9	WSW	W	0.98	24.9	D. clouds	
Poona (Yarrowda)	27.91	708.9	29.76	755.9	77.5	25.3	73	WSW	22.0	9.8			9		W	0.23	5.8	D. clouds	
Belgaum	27.28	692.8	29.81	757.2	75.8	24.3	71	SW	12.0	5.4			5	E	SW	0.05	1.3	D. clouds	
Lahore	28.63	727.2	29.32	744.6	113.3	45.2	12	Calm	1.7	0.8			0			0	0	Blue sky	
Roorkee	28.47	723.0	29.30	744.3	107.9	42.2	12	NW	5.0	2.2						0	0	Hazy	
Agra	28.88	733.5	29.41	747.0	104.6	40.3	29	W	5.9	2.6						0	0		
Nagpur	28.53	724.8	29.53	750.2	97.4	36.3	35	W	8.1	3.6			3	W		0.12	3.0		
Jubbulpore	28.21	716.6	29.52	749.9	96.7	35.9	36	NW	8.5	3.8			6			0	0	D. clouds	
Lucknow	29.03	737.4	29.39	746.4	106.4	41.3	28	WNW	3.2	1.4			4	ESE		0	0	Blue sky	
Allahabad	29.12	739.6	29.41	747.1	101.6	38.7	34	SW	6.1	2.7			9		W	0	0	Misty	
Patna	29.24	742.7	29.41	747.1	96.4	35.8	55	E	2.3	1.0			6	E	E	0	0	D. clouds	
Hazaribagh	27.50	695.6	29.45	748.0	89.8	32.1	44	NW	10.3	4.6			9			0.02	0.5	Thunder-showers	
Cuttack	29.44	747.7	29.52	749.7	94.1	34.5	48	Calm	4.2	1.9			4			0	0	D. clouds	
Calcutta (Alipore)	29.47	748.4	29.49	748.9	87.4	30.8	88	SW	5.0	2.2			9	SW		0	0	D. clouds	
Goalpara	29.13	739.9	29.54	750.2	74.2	23.4	99	E	5.4	2.4			10			3.71	94.2	Thunder-storm.	
Chittagong	29.51	749.5	29.60	751.7	85.9	29.9	84	S	9.0	4.0			10			0	0	Overcast	
Sibsagar	29.30	744.3	29.64	752.7	79.4	26.3	89	ESE	2.0	0.9			10	W	W	1.05	26.7	Overcast	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.68	753.8	30.08	764.0	69.3	20.7	61	SW	3.1	1.4			2			0	0		Prof. Giovanni Clodig.
Milan	29.53	750.1	30.05	763.3	71.2	21.8	48	SW	5.6	2.5			4	NW		0	0		Prof. Schiaparelli.
Padua	29.98	761.4	30.09	764.2	69.6	20.9	55	SW	2.5	1.1			7	SW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.12	739.6	30.01	762.2	70.0	21.1	54	E	3.8	1.7			6	NE		0	0		Prof. P. F. Denza.
Genoa	29.93	760.3	30.13	765.2	65.5	18.6	61	SE	8.1	3.6			8	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.13	714.5	30.01	762.2	66.6	19.2	60	SE			2		1	N		0	0		Prof. D. C. Bruno.
Pesaro	30.03	762.8	30.08	764.0	67.5	19.7	62	E	11.9	5.3			1			0	0		Prof. Luigi Guidi.
Florence	29.84	757.9	30.10	764.4	68.9	20.5	49	SW			2		2	SW		0	0		Cav. F. Meucci.
Leghorn	30.06	763.4	30.14	765.6	66.9	19.4	67	NE	4.9	2.2			2			0	0		Prof. P. Monte.
Rome	29.94	760.5	30.11	764.9	73.9	23.3	46	WSW	7.4	3.3			0			0	0		Prof. P. S. Ferrari.
Lecce	29.83	757.6	30.08	763.9	72.3	22.4	47	NE	14.3	6.4			0			0	0		Prof. C. De Giorgi.
Cosenza	29.17	740.8	30.02	762.5	81.7	27.6	64	NW	2.5	1.1			0			0	0		Prof. D. Conti.
Cagliari	29.90	759.4	30.00	764.3	72.5	22.5	62	NW			2		1			0	0		Prof. A. Pacinotti.
Palermo	29.87	758.8	30.12	765.1	69.8	20.7	64	ESE	6.8	2.8			7			0	0		Prof. G. Ciacciatore.
Syracuse	29.98	761.4	30.02	762.5	70.7	21.5	68	NNE	13.7	6.1			3	SW		0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.53	750.1	30.04	763.1	71.6	22.0	46	SW	0	0			3			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Aral, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					64.2	17.9	78	NE	2.3	1.0			2cs;s			0.001	0.26	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.62	752.3	29.82	757.4	66.0	18.9	93	SW	0.9	0.4			3s			0	0	Foggy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.30	744.2	29.37	746.0	71.0	21.7	58	SW	15.1	6.8			3s			0	0	Fair	The Staff.
Wakayama	29.69	754.1	29.74	755.4	65.6	18.7	76	WSW	0.4	0.2			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.03	762.7	59.0	15.0	66	SE			1	9ks	0			0.35	9.0	Cloudy	Prof. L. Perez.
Guanaxuato	23.67	601.4			62.4	16.9	68	SSW	Inap.	Inap.		10c	k	Calm	Calm	0	0	Covered.	Vicente Fernandez.
Leon	24.43	620.5	30.00	762.1	67.5	19.7	68	NW			1	1c	1k			0	0	Clear	Prof. M. Leal.
Mazatlan	29.67	753.6	29.93	760.1	79.0	26.1	87	SE			1	8k	0	NE		0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.05	586.1	29.98	761.6	59.4	15.2	76	NW	2.4	1.1		5k	0	SW		0	0	Fair	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.96	608.5	29.87	758.6	64.9	18.3	64	NE			1	2c	0			0	0	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.45	595.5	30.17	766.4	55.8	13.2	50	Calm	0	0		2ck	0	N		0.012	0.3	Clear.	Prof. P. Spina.
San Luis Potosi	24.21	614.9	30.05	763.2	67.5	19.7	67	E			1	3	0	W		0.08	2.1	Foggy	G. Barroeta, M. D.
Tlacotalpam	29.90	759.4	29.91	759.7	78.8	25.7	93	S			1	3	5	SE	S	0	0	Cloudy	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.60	574.1	30.17	766.4	57.9	14.4	75	Calm			0		9n		NW	Inap.	Inap.	Very cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,921.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.62	752.4	29.62	752.4	54.3	12.4		SW			6					0.236	6.0		
Groningen	29.53	750.0	29.58	751.4	52.3	11.3		SW			3					0.051	1.3		
Helder	29.43	747.6	29.43	747.6	51.1	10.6		SW			4					0.224	5.7		
Hellevoetsluis	29.58	751.2	29.58	751.2	52.9	11.6	92	SW			6					0.059	1.5		
Utrecht	29.55	750.5	29.60	751.7	53.1	11.7	94	SW			4		S			0.378	9.6	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.36	744.5	29.37	745.9	50.0	10.0	52	NW	3.8	1.7			3			0	0		
Brönö	29.37	745.9	29.41	746.9	51.8	11.0	63	NNE	18	8			8			0	0		
Christiania	29.15	740.3	29.29	743.9	57.7	14.3	55	SSW	11	5			8			0.244	6.2		
Tromsö	29.56	750.8	29.61	752.2	41.9	5.5	45	NE	18	8			0			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.35	771.0	30.56	776.3	65.5	18.6	94	ENE			3		6			0.098	2.5		Dr. J. A. Sampaio.
Campo Major	29.21	741.8	30.17	766.3	80.6	27.0	24	NNW	2.5	1.1			0			[illegible]	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.25	768.4	30.34	770.7	67.6	19.8	58	SW	5.6	2.5			9			[illegible]	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.92	760.0	30.27	768.9	73.9	23.3	59	SSE	7.4	3.3			0			0	0		The Staff.
Ponta Delgada (Azores)	30.45	773.4	30.52	775.2	62.6	17.0	80	SE	19.9	8.9			10			0.091	2.3		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE Naval Series. Vessels and Captains.																Sea or swell. Height scale 0-9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.91	759.8	75.7	24.3		WNW			2		2		WNW	1	WNW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello,																				A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.84	757.9	84.2	29.0		E			1		10		E			6	Raining.	J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.47	748.5	29.51	749.5	59.0	15.0	65	S	18	8			8n						Capt. Sselliwerstow.
Astrakhan	30.34	770.5	30.25	768.4	78.3	25.7	43	SSE	13	6			0						Capt. Wisganow.
Barnaul	29.23	742.5	29.71	754.7	63.9	17.7	55	N	0	0			10						Meteorological Obs.
Dorpat	29.35	745.5	29.59	751.5	58.1	14.5	65	WSW	9	4			10k						Prof. Dr. Weihrauch.
Ekaterinburg	28.92	734.6	29.84	757.8	75.2	24.0	49	W	22	10		ck	8ks;kn						Meteorological Obs.
Irkutsk																			
Kasan	29.69	754.2	29.95	760.8	69.8	21.0	81	WSW	2	1			8kn						Physical Cabinet.
Kertch	30.02	762.5	30.04	763.0	70.0	21.1	94	S	9	4			3						Lagorio.
Kieff	29.11	739.5	29.74	755.3	60.6	15.9	88	NE	5	2			10ks;n					Raining	Physical Cabinet.
Krotkowo*	29.60	751.9	30.05	763.3	80.2	26.8	56	SW	9	4			10k						Cand. Fatjanow.
Lugan	29.78	756.5	29.98	761.5	80.4	26.9	33	SE	13	6			8						Meteorological Obs.
Moscow	29.37	746.0	29.90	759.4	66.2	19.0	45	SW	10.1	4.5			8ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.87	758.6	29.94	760.4	73.2	22.9	64	S	31.3	14			10cs;n						Kurdakof.
Nikolaievsk, on the Amoor	29.96	761.0	30.05	763.2	49.5	9.7	85	SE	16	7			5ks						
Nukuss																			
Orenburg																			
Pekin (China)	29.42	747.2	29.95	760.8	85.1	29.5	25	SW	9	4			2cs						Physical Observatory.
St. Petersburg	29.48	748.9	29.50	749.3	57.9	14.4	61	SW	29	13			4k						Central Physical Obs.
Tashkend	28.50	724.0	30.04	762.9	70.2	21.2	63	Calm	0	0			0						Teich, A. M.
Tiflis	28.80	731.5	30.16	766.1	78.1	25.6	48	S	9	4			1k						Physical Observatory.
Vladivostock																			
Warsaw	29.38	746.3	29.80	756.8	63.5	17.5	54	SW	13	6			5ks						Astronomical Obs.
Wilna	29.34	745.1	29.74	755.5	59.2	15.1	66	SW	7	3			9					Heavy clouds	Astronomical Obs.
Yeniseisk	29.74	755.4	30.02	762.6	58.8	14.9	43	N	2	1			0						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.09	764.2	30.19	766.9	70.2	21.2	43	SSW	4.2	1.86			0			0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.28	769.1	30.34	770.5	70.5	21.4	64	NE	2.4	1.05		2	6	NW		0	0	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.29	693.2			69.8	21.0	44	NE	13.9	6.16			0			0	0	Clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	28.00	711.2	30.15	765.7	78.4	25.8	36	SW	4.5	2.00		0	0			0	0	Clear.	The Staff.
Murcia, Met. Obs'y	30.07	763.7	30.21	767.4	77.4	25.2	61	SSE	3.2	1.41		3	5	SW		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.41	746.9	30.30	769.5	63.9	17.7	55	N	9.4	4.2			2			0	0	Light clouds	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.99	761.8	30.06	763.5	78.7	25.9	84	ENE	2.2	1.0		1ck	0	WSW		1.445	36.7	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.81	757.3	29.87	758.6	82.7	28.2	83	SW	6.6	3.0			8kn		W	0.04	1.0	Clear.	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.15	765.8	30.25	768.3	75.4	24.1	65	Calm	0	0		0	2		W	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	762.0	30.09	764.3	83.1	28.4	78	E	8.2	3.67		2s	2k		E	0	0	Clear.	Enrique Gadea, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.37	746.0	29.41	747.0	41.0	5.0		NE			4		10					Raining	
Umea	29.39	746.5	29.44	747.8	44.6	7.0	66	NE			6		10			0.173	4.4		
Hernosand	29.43	747.4	29.48	748.7	45.0	7.2	98	N			2		10			0	0		
Stockholm	29.27	743.5	29.45	748.0	59.0	15.0	58	SSE			2		10			0.154	3.9		
Wisby	29.41	747.0	29.47	748.5	57.2	14.0	67	SW			6		3			0.256	6.5		
Sub-Series.																			
Upsala	29.33	744.9	29.41	747.1	52.8	11.3	72	E	5.1	2.3			7		W	0.356	9.05		Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia																				J. P. Pählson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr
Saga, N. 39° 14′, W. 14° 55′			30.44	773.2	64.4	18.0		NE			3		9						Overcast	M. von Krusenstierna.

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.73	729.8	30.14	765.6	59.9	15.5	67	SSW			3		10			0.024	0.6	Covered	The Observatory.
Zurich	28.43	722.0	30.04	762.9	62.2	16.8	67	W			6		7			0	0	Cloudy	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +3.7 mm.; Thermometer, —4.3 Cent. Relative Humidity, +11 per cent.
NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.96	760.9	89.4	31.9	43	SSW	8	3.5			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.11	764.8	77.4	25.2		SW			2		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.91	759.7	78.1	25.6	75	NNE			2		0			0	0		Prof. C. V. A. van Dyck

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					49.0	9.4		Calm	0	0			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.07	763.8	30.13	765.3	50.5	10.3	82	E	5	2.2			10s			0.01	0.3	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.09	764.3	30.13	765.3	47.1	8.4	95	E	4	1.8			10n					Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.48	748.8	29.66	753.4	71.7	22.1	76	SW			3	1cs	2s			0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	29.94	760.5	30.11	764.8	49.0	9.4	87	E			5		9ks			0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.94	760.5	29.97	761.2	54.6	12.6	77	E	20	8.9		0	Sm'o			0	0	Clear	J. McWilliams.
Fredericton, N. B.	30.05	763.3	30.11	764.8	53.5	11.9	71	E	1	0.4		0	d	E		0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	29.06	738.1	29.87	758.7	56.7	13.7	77	Calm	0	0		0	2ks			0	0	Fair	James Stewart.
Granton, Ontario	28.47	723.1	29.55	750.6	52.0	11.1	73	W			3		10n			0	0	Cloudy	James Grant.
Halifax, N. S.	29.98	761.5	30.12	765.0	50.0	10.0	91	E	2	0.9			10n			0.030	0.76	Cloudy	A. Allison.
Hamilton, Ontario	29.34	745.2	29.72	754.9	58.9	14.9	77	SW			4		8ks			0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.34	745.2	29.67	753.6	61.0	16.1	80	SW	10	4.5		2k	0	S		0.70	17.8	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	30.09	764.3	30.13	765.3	41.4	5.2	96	E	4	1.8			Fog			0.05	1.3	Foggy	C. H. Rigby.
Montreal, Quebec	29.54	750.3	29.73	755.1	68.6	20.3	82	S	6	2.7			10s			0.01	0.3	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.53	750.0	29.56	750.8	38.8	3.8	95	N			4		10n			1.50	38.1	Raining	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A.
Parry Sound, Ontario	28.96	735.6	29.64	752.8	49.0	9.4	93	S	16	7.2			10n			0.37	9.4	Light rain	Rev. R. Mosley.
Peterboro, Ontario	28.95	735.3	29.68	753.9	61.7	16.5	66	SW			3	9k	0			0.49	12.4	Cloudy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.09	738.9	29.77	756.1	59.1	15.1	88	W	14	6.3		10k	0	W		0.11	2.8	Fair	H. Morgan.
Port Stanley, Ontario	29.17	740.9	29.79	756.7	57.9	14.4	66	W	24	10.7			10ks			0.01	0.3	Cloudy	M. Payne.
Quebec, Quebec	29.55	750.6	29.87	758.7	63.0	17.2	83	NE			3		10n			0	0	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.11	739.4	29.55	750.6	59.5	15.3	85	SE	6	2.7			10s			0.44	11.2	Light rain	W. H. McIntyre.
St. John, N. B.	29.91	759.7	30.07	763.8	57.0	13.9	69	E	5	2.2		0	0			0	0	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.00	736.6	29.71	754.6	49.5	9.7	90	SW	30	13.4			10ks			0.19	4.8	Cloudy	K. Stewart.
Stratford, Ontario	28.49	723.6	29.76	755.9	50.1	10.1	86	NW	18	8.0			10s			0.025	0.58	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.09	764.3	30.13	765.3	45.3	7.4	98	NE	2	0.9			10n			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.35	745.5	29.73	755.1	58.5	14.7	65	W	24	10.7		5ck	4ks	SW		0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A.
Woodstock, Ontario	28.71	729.2	29.75	755.6	55.1	12.8	68	SW	28	12.5			10ks			0	0	Cloudy	Professor Wolverton.
Yarmouth, N. S.	29.98	761.5	30.04	763.0	57.4	14.1	66	SE	6	2.7		0	0			0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.06	763.5	30.21	767.3	50	10.0	100	E					Fog			0.24	6.1	Fog and mist	John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.06	763.5	46.4	8.0		SE			1					0.12	3.0		The Commandant.

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.76	755.9	29.83	757.7	73	22.8	72	S	8	3.6		5k	0	S		0.11	2.8	Fair	
Alpena, Michigan	28.99	736.3	29.62	752.3	49	9.4	71	W	25	11.2			10s		Calm	0.27	6.9	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.88	733.5	29.98	761.5	69	20.6	95	SW	3	1.3			10n		SW	0.75	19.1	Light rain	
Atlantic City, New Jersey	29.89	759.2	29.90	759.4	68	20.0	84	SW	7	3.1		8c	0	Calm		0	0	Fair	
Augusta, Georgia	29.88	758.9	30.07	763.8	78	25.6	78	Calm			0		10s		Calm	0	0	Cloudy	
Baltimore, Maryland	29.86	758.4	29.91	759.7	77	25.0	65	W	6	2.7		2c	Haze	W	Calm	0	0	Clear	
Barnegat, New Jersey	29.86	758.4	29.88	758.9	71	21.7	71	S	8	3.6		8c	0	SW		0	0	Fair	
Bismarck, Dakota	28.04	712.2	29.90	759.4	56	13.3	74	E	4	1.8		1cs	0	Calm		0.01	0.3	Clear	
Boerne, Texas	28.52	724.4	29.78	756.4	74	23.3	95	S	4	1.8		5k	5ks	SE	S	0	0	Cloudy	
Boise City, Idaho	27.00	685.8	29.96	761.0	57	13.9	69	E	1	0.4			10s		NW	0.02	0.5	Cloudy	
Boston, Massachusetts	29.76	755.9	29.91	759.7	62	16.7	94	E	6	2.7			10s		Calm	0.03	0.8	Cloudy	
Brackettville, Texas	28.75	730.2	29.76	755.9	76	24.4	86	E	8	3.6			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	28.91	734.3	29.88	758.9	57	13.9	87	Calm	0	0		0	2s		Calm	0	0	Fair	
Brownsville, Texas	29.86	758.4	29.90	759.4	84	28.9	63	SE	5	2.2		8cs	0	Calm		0	0	Fair	
Buffalo, New York	29.08	738.6	29.76	755.9	60	15.6	71	SW	19	8.5			10s		SW	0.32	8.1	Cloudy	
Burkes, Arizona					64	17.8	21	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.49	749.0	29.76	755.9	72	22.2	71	SW	15	6.7		5ck	2s	SW	S	0.01	0.3	Fair	
Cairo, Illinois	29.66	753.4	30.04	763.0	72	22.2	71	SW	1	0.4		0	0			0	0	Clear	
Campo, California	27.30	693.4	29.87	758.7	38	3.3	81	W	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.01	762.2	30.02	762.5	76	24.4	85	W	14	6.3			10s		W	0	0	Cloudy	
Cape Henry, Virginia	29.94	760.5	29.96	761.0	75	23.9	81	SW	4	1.8		5ck	5s	SW	Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.04	763.0	30.05	763.3	74	23.3	90	SW	19	8.5		5k	5s	W	Calm	0	0	Cloudy	
Cape May, New Jersey	29.87	758.7	29.90	759.4	71	21.7	80	SW	14	6.3		5cs	2s	W	S	0	0	Fair	
Castroville, Texas	29.16	740.7	29.83	757.7	79	26.1	78	SE	3	1.3			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.05	762.3	30.07	763.8	75	23.9	90	SW	11	4.9			10n		SW	0.31	7.9	Light rain	
Charleston, South Carolina	30.00	762.0	30.05	763.3	80	26.7	66	SW	10	4.5		0	5s		SW	0.01	0.3	Fair	
Charlotte, North Carolina	29.17	740.9	29.96	761.0	70	21.1	90	SW	5	2.2			10n		SW	0.09	2.3	Light rain	
Chattanooga, Tennessee	29.26	743.2	30.03	762.7	69	20.6	90	Calm	0	0		2cs	Fog	Calm	Calm	0.10	2.5	Fair	
Cheyenne, Wyoming	23.99	609.3	29.93	760.2	48	8.9	43	W	1	0.4		5c	0	W		0	0	Fair	
Chicago, Illinois	29.24	742.4	29.90	759.4	59	15.0	65	W	5	2.2		0	0			0.01	0.3	Clear	
Chincoteague, Virginia	29.93	760.2	29.94	760.5	69	20.6	97	SW	12	5.4		5k	5s	SW	SW	0	0	Cloudy	
Cincinnati, Ohio	29.36	745.7	29.98	761.5	68	20.0	67	W	5	2.2		0	Sm'e		Calm	0.01	0.3	Clear	
Cleveland, Ohio	29.18	741.1	29.88	758.9	60	15.6	60	W	18	8.0		5k	0	W		0	0	Fair	
Coleman City, Texas	28.15	715.0	29.73	755.1	73	22.8	72	SE	6	2.7		0	0			0	0	Clear	
Columbus, Ohio	29.13	739.9	29.94	760.5	66	18.9	45	W	10	4.5		0	0			0	0	Clear	
Concho, Texas	28.01	711.4	29.60	751.8	74	23.3	81	SE	16	7.2		0	0			0	0	Clear	
Corsicana, Texas	29.54	750.3	29.99	761.7	71	21.7	85	SE	8	3.6		0	5ks			0	0	Fair	
Davenport, Iowa	29.33	745.0	29.95	760.7	59	15.0	76	W	4	1.8		0	0			0.02	0.5	Clear	
Dayton, Washington T'y					53	11.7	86	SW			1		10n		Calm	0.06	1.5	Light rain	
Deadwood, Dakota	25.28	642.1			48	8.9	70	Calm	0	0		0	0			0.03	0.8	Clear	
Decatur, Texas	28.80	731.5	29.93	760.2	69	20.6	85	SE	4	1.8			10s		Calm	0	0	Cloudy	
Delaware Breakwater, Del.	29.88	758.9	29.90	759.4	75	23.9	81	SW	20	8.9		5c	2s	SW	SW	0	0	Fair	
Denison, Texas	29.20	741.7	29.97	761.2	67	19.4	84	SE	6	2.7			10ks		N;S	0	0	Cloudy	
Denver, Colorado	24.72	627.9	29.94	760.5	50	10.0	58	S	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	29.10	739.1	29.97	761.2	56	13.3	81	Calm	0	0			10s		NW	Inap.	Inap.	Cloudy	
Detroit, Michigan	29.17	740.9	29.82	757.4	56	13.3	63	W	16	7.2		10k	0	W		0.14	3.6	Cloudy	
Dodge City, Kansas	27.24	691.9	29.42	747.3	64	17.8	63	S	8	3.6		0	0			0	0	Clear	
Dubuque, Iowa	29.27	743.4	29.95	760.7	57	13.9	75	SW	1	0.4		5ck	Haze	W	Calm	0	0	Fair	
Duluth, Minnesota	29.24	742.7	29.91	759.7	50	10.0	86	N	1	0.4		1c	0	Calm		0.22	5.6	Clear	
Eagle Pass, Texas	29.18	741.1	29.88	758.9	78	25.6	82	SE	6	2.7		5ck	0	Calm		0	0	Fair	
Eastport, Maine	29.99	761.7	30.06	763.5	53	11.7	73	E	6	2.7		0	0			0	0	Clear	
Edinburg, Texas					80	26.7	96	SE			1	5c	2s	Calm	S	0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.12	739.6	29.80	756.9	66	18.9	54	SW	19	8.5		0	5ks		W	0.02	0.5	Fair	
Escanaba, Michigan	29.13	739.9	29.78	756.4	51	10.6	65	NW	16	7.2		0	2s		NW	0.25	6.3	Clear	
Florence, Arizona	28.31	719.1	29.91	759.7	68	20.0	34	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.99	634.7	30.44	773.2	44	6.7	30	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.73	704.3	29.51	749.5	52	11.1	86	S	1	0.4		0	0			0.02	0.5	Clear	
Fort Custer, Montana	26.60	675.6			52	11.1	66	SW	4	1.8			10s		W	0	0	Cloudy	
Fort Davis, Texas	25.20	640.1	30.16	766.1	69	20.6	56	SW	6	2.7		0	0			0.10	2.5	Clear	
Fort Elliot, Texas	26.84	681.7	28.97	735.8	65	18.3	63	SE	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.40	746.7	29.92	760.0	67	19.4	74	SE	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.13	638.3	29.93	760.2	68	20.0	10	N	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.63	727.2	29.84	757.9	71	21.7	80	SE	6	2.7		0	0			0	0	Clear	
Fort Keogh, Montana	27.05	687.1			49	9.4	85	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.68	703.1	29.51	749.5	72	22.2	85	S	12	5.4		1c	0	S		0.07	1.8	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.70	729.0	29.77	756.1	68	20.0	74*	SE	11	4.9			10s		Calm	0	0	Cloudy	
Fort Stevenson, Dakota	27.98	710.7			54	12.2	73	SE	6	2.7			10ks		SE	0.61	15.5	Cloudy	
Fort Verde, Arizona					50	10.0	32	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.94	760.5	29.98	761.5	81	27.2	78	S	6	2.7		5ck	0	S		0.12	3.0	Fair	
Grand Haven, Michigan	29.24	742.7	29.87	758.7	56	13.3	75	NW	16	7.2		0	0			0	0	Clear	
Helena, Montana					51	10.6	53	S	5	2.2			8s		Calm	0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.20	741.7	29.95	760.7	67	19.4	60	N	2	0.9		2c	0	Calm		0	0	Clear	
Indianola, Texas	29.96	761.0	29.98	761.5	83	28.3	79	S	8	3.6		5c	2s	S	Calm	Inap.	Inap.	Fair	
Jacksboro, Texas	28.76	730.5	29.83	757.7	70	21.1	75	S	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	30.06	763.5	30.09	764.3	80	26.7	74	SW	10	4.5		2cs	0	Calm		0	0	Clear	
Keokuk, Iowa	29.34	745.2	29.93	760.2	65	18.3	68	W	1	0.4		5cs	0	W		0	0	Fair	
Key West, Florida	30.04	763.0	30.08	764.0	82	27.8	75	SE	7	3.1		1k	0	SE		0	0	Clear	
Kittyhawk, North Carolina	30.00	762.0	30.02	762.5	74	23.3	87	W	19	8.5		10cs	0	Calm		0	0	Cloudy	
Knoxville, Tennessee	29.05	737.9	30.02	762.5	67.5	19.7	90	W	3	1.3		0	5ks		W	0.10	2.5	Fair	
La Crosse, Wisconsin	29.18	741.1	29.90	759.4	54	12.2	93	S	2	0.9			Fog		Calm	0.03	0.8	Foggy	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	60	15.6	49	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.46	748.3	29.78	756.4	83	28.3	71	SE	4	1.8		5cs	0	W		0	0	Fair	
Leavenworth, Kansas	29.16	740.7	29.98	761.5	61	16.1	77	N	4	1.8			10n		Calm	0.03	0.8	Light rain	
Lewiston, Idaho	28.94	735.1	29.57	751.1	54	12.2	100	E	2	0.9			10n		Calm	0.04	1.0	Light rain	
Little Rock, Arkansas	29.72	754.9	30.03	762.7	66	18.9	89	Calm	0	0		0	0			0	0	Clear	
Los Angeles, California	29.51	749.5	29.85	758.2	55	12.8	93	W	2	0.9			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.43	747.5	29.97	761.2	71	21.7	58	SW	4	1.8		0	0			0.01	0.3	Clear	
Lynchburg, Virginia	29.30	744.2	29.95	760.7	73	22.8	63	SW	2	0.9		0	0			0.02	0.5	Clear	
Madison, Wisconsin	28.93	734.8	29.89	759.2	57	13.9	69	W	4	1.8		0	0			0.16	4.1	Clear	
Marquette, Michigan	29.10	739.1	29.79	756.7	48	8.9	76	NW	18	8.0			10s		NW	1.02	25.9	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.31	719.1	29.99	761.7	75	23.9	86	SE	6	2.7		2cs	2s	SW	Calm	0	0	Fair	
Memphis, Tennessee	29.66	753.4	29.98	761.5	69	20.6	75	W	1	0.4		Haze	Haze	Calm	Calm	0	0	Hazy	
Milwaukee, Wisconsin	29.18	741.1	29.89	759.2	55	12.8	68	W	14	6.3		1k	0	Calm		0.03	0.8	Clear	
Mobile, Alabama	29.99	761.7	30.03	762.7	76	24.4	86	SW	2	0.9			10s		SW	0.01	0.3	Cloudy	
Montgomery, Alabama	29.82	757.4	30.04	763.0	77	25.0	82	S	5	2.2		8k	0	W		0	0	Fair	
Morgantown, West Virginia	28.97	735.8	29.91	759.7	71	21.7	75	W	15	6.7		0	0			Inap.	Inap.	Clear	
Mt Washington, N. H.	23.83	605.3	30.19	766.8	45	9.4	100	S	20	8.9			Fog		S	0.01	0.3	Dense fog	
Nashville, Tennessee	29.52	749.8	30.04	763.0	72	22.2	67	W	3	1.3		0	0			0.25	6.3	Clear	
New Haven, Connecticut	29.75	755.6	29.86	758.4	68	20.0	90	S	3	1.3			10s;fg		Calm	0.01	0.3	Cloudy	
New London, Connecticut	29.81	757.9	29.89	759.2	64	17.8	94	E	3	1.3			Fog		Calm	0.03	0.8	Dense fog	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	78	25.6	82	SW	7	3.1		2c	8s	Calm	SW	Inap.	Inap.	Cloudy	
Newport, Rhode Island	29.84	757.9	29.88	758.9	63	17.2	89	E	8	3.6			Fog			0	0	Foggy	
New River, North Carolina																			
New York, New York	29.70	754.4	29.87	758.7	68	20.0	90	SW	6	2.7		2ck	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	29.86	758.4	29.91	759.7	78	25.6	69	SW	11	4.9			10ks		SW	0	0	Cloudy	
North Platte, Nebraska	26.99	685.5	29.50	749.3	55	12.8	81	NE	3	1.3		0	0			0	0	Clear	
Olympia, Washington Ter.	29.69	754.1	29.73	755.1	51.0	10.6	93	SW	1	0.4			10n		Calm	0.09	2.3	Light rain	
Omaha, Nebraska	28.81	731.8	29.87	758.7	63	17.2	78	SE	8	3.6			10s		Calm	0.06	1.5	Cloudy	
Oswego, New York	29.49	749.0	29.80	756.9	66	18.9	64	SW	10	4.5			10ks		SW	0.14	3.6	Cloudy	
Pembina, Dakota	29.00	736.6	29.81	757.2	52	11.1	79	S	4	1.8		0	2s		Calm	0	0	Clear	
Pensacola, Florida	30.01	762.2	30.04	763.0	79	26.1	82	SW	5	2.2			10ks		SW	0	0	Cloudy	
Philadelphia, Pennsylvania	29.84	757.9	29.88	758.9	73	22.8	76	SW	5	2.2		1cs	Haze	SW	Calm	0	0	Clear	
Phœnix, Arizona	28.67	728.2	30.37	771.4	79	26.1	27	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.80	452.1	30.00	762.0	26	−3.3	52	W	36	16.1		0	0			0	0	Clear	
Pilot Point, Texas	29.20	741.7	30.02	762.5	68	20.0	79	SE	9	4.0			10ks		S	0	0	Cloudy	
Pioche, Nevada	23.95	608.3	29.72	754.9	58	14.4	12	SW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.12	739.6	29.89	759.2	68	20.0	60	W	11	4.9		0	0			0.31	7.9	Clear	
Port Huron, Michigan	29.12	739.6	29.76	755.9	54	12.2	61	W	29	13.0		0	8ks		W	0.07	1.8	Fair	
Portland, Maine	29.90	759.4	29.95	760.7	55	12.8	93	NE	9	4.0			10n;fg		Calm	0.06	1.5	Light rain	
Portland, Oregon	29.74	755.4	29.81	757.2	55	12.8	87	S	12	5.4			10s		W; SW	0.54	13.7	Cloudy	
Portsmouth, North Carolina					77	25.0	86	SW	18	8.0		10cs	0	SW		0	0	Cloudy	
Prescott, Arizona	24.70	627.4	30.06	763.5	44	6.7	30	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	79	26.1	82	SE	12	5.4		8c	1ks	Calm	SE	0.01	0.3	Fair	
Red Bluff, California	29.51	749.5	29.86	758.4	65.5	18.6	68	N	3	1.3		0	0			0	0	Clear	
Rio Grande City, Texas	29.72	754.9	29.93	760.2	82	27.8	79	SE	8	3.6			10s		Calm	0	0	Cloudy	
Rochester, New York	29.15	740.4	29.74	755.4	65	18.3	54	W	21	9.4		5k	0		W	0.40	10.2	Fair	
Roseburg, Oregon	29.36	745.7	29.91	759.7	56.5	13.6	87	SW	3	1.3			10s		SW	0.17	4.3	Cloudy	
Sacramento, California	29.79	756.7	29.86	758.4	63	17.2	78	SE	2	0.9		0	0			0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.99	761.7	64	17.8	68	W	2	0.9		0	Sm'e			0	0	Clear	
St. Paul, Minnesota	29.05	737.9	29.96	758.4	55	12.8	81	SW	4	1.8		0	0			0.01	0.3	Clear	
Salt Lake City, Utah	25.45	646.4	29.78	756.4	56	13.3	46	SE	2	0.9		8k	0	W		0	0	Cloudy	
San Antonio, Texas	29.28	743.7	29.95	760.7	80	26.7	82	SE	4	1.8			10s		SE	0	0	Cloudy	
San Diego, California	29.80	756.9	29.87	758.7	62	16.7	83	SW	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.22	742.2	29.88	758.9	60	15.6	65	W	21	9.4		0	0			0	0	Clear	
Sandy Hook, New Jersey	29.82	757.4	29.85	758.2	77	25.0	69	SW	13	5.8		5c	0	S		0	0	Fair	
San Francisco, California	29.89	759.2	29.95	760.7	54	12.2	93	SW	5	2.2		0	Fog		W	0	0	Fair	
Santa Fé, New Mexico	23.23	590.0	29.77	756.1	50	10.0	8	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.00	762.0	30.09	764.3	81	27.2	74	SW	5	2.2		8c	0	SW		0.42	10.7	Fair	
Shreveport, Louisiana	29.80	756.9	30.01	762.2	70	21.1	85	NW	2	0.9		5c	Fog	Calm	Calm	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.04	763.0	30.07	763.8	78	25.6	82	SW	15	6.7		8k	Haze	SW	Calm	0.03	0.8	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.34	745.2	29.99	761.7	64	17.8	68	W	3	1.3		0	0			0	0	Clear	
Springfield, Massachusetts	29.75	755.6	29.87	758.7	66	18.9	89	S	1	0.4			10s		SW	Inap.	Inap.	Cloudy	
Stockton, Texas	26.88	682.7	29.88	758.9	72	22.2	76	Calm	0	0		0	0			0	0	Clear	
Thatcher's Island, Mass.	29.88	758.9	29.93	760.2	60	15.6	100	SE	8	3.6			Fog			0	0	Dense fog	
Toledo, Ohio	29.14	740.1	29.80	756.9	63	17.2	52	SW	16	7.2		1k	0	SW		0.05	1.3	Clear	
Tucson, Arizona	27.41	696.2	29.96	761.0	71	21.7	18	SE	2	0.9		0	0			0	0	Clear	
Umatilla, Oregon	29.42	747.3	29.90	759.4	56.5	13.6	81	E	1	0.4			10n		W	0.10	2.5	Light rain	
Uvalde, Texas	28.98	736.1	29.76	755.9	79	26.1	78	SE	4	1.8		5c	2s	Calm	S	0	0	Fair	
Vicksburg, Mississippi	29.81	757.2	30.06	763.5	71	21.7	90	Calm	0	0		5k	Fog	Calm		0.09	2.3	Fair	
Virginia City, Montana	24.07	611.4	29.55	750.6	48	8.9	56	SW	2	0.9			10s		W	0.09	2.3	Cloudy	
Visalia, California	29.44	747.8	29.80	756.9	64	17.8	53	NW	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.82	757.4	29.93	760.2	78	25.6	65	SW	4	1.8		5cs	0	SW		0	0	Fair	
Wickenburg, Arizona					67	19.4	50	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.97	761.2	30.04	763.0	78	25.6	78	SW	13	5.8		5ck	5s	Calm	SW	0.02	0.5	Cloudy	
Winnemucca, Nevada	25.52	648.2	29.88	758.9	53	11.7	54	SW	8	3.6		2ck	0	SW		0	0	Clear	
Wood's Holl, Massachusetts	29.87	758.7	29.90	759.4	64	17.8	94	SE	3	1.3			Fog		SE	0.03	0.8	Foggy	
Yankton, Dakota	28.64	727.4	29.90	759.4	59	15.0	94	S	1	0.4			10s		Calm	0.10	2.5	Cloudy	
Yuma, Arizona	29.57	751.1	29.71	754.6	69	20.6	46	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.05	560.1			55.5	13.1	70	Calm	0	0			10n			0.16	4.1	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.03	762.7	30.08	764.0	78	25.6	82	SE	2.4	1.1		4ck;cs	0	Calm		1.48	37.6	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.00	762.0	30.01	762.2	80	26.7	79	Calm	0	0		8c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.94	760.5	30.02	762.5	80	26.7	76	E	4	1.8		5k	2s	SE	NE	Inap.	Inap.	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.04	763.0	30.04	763.0	79	26.1	87	SE			2	4cs	5k	E		0	0	Fair	C. J. Hering.
Puerto Perrio, U.S.Col'bia ‖	29.41	747.0	29.97	761.2	80	26.7	85	Calm			0		10s;ks			0	0		Francesco J. Cisneros
§ Rivas, Nicaragua					75	24		ESE				0	7k		ESE	0.67	17.	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.00	762.0	30.03	762.7	80	26.7	74	N	3.6	1.6		8ck	0			0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.04	763.0	30.09	764.3	32.0	0.0	94	E	12	5.4		0	0			0	0	Clear	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft.,or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.08	764.0	79	26.1	82	SW	12	5.4			8d		SW					Fair	
§Navy Yard, Portsmouth, N. H.	29.94	760.5	59	15.0	94	ENE	5	2.2			10			0	0			Foggy	
Naval Hospital, Yokohama, Japan	29.36	745.7	71	21.7	64	SW			6		3ks		SW	1.45	36.8			Clearing	
§Adams, N. 4° 20′, W. 82° 23′	29.93	760.2	78	25.6	91	SSW			3		10		SW					Cloudy	
§Alaska, Callao, Peru *	29.92	760.0	62	16.7	88	Calm			0		10					Long	SW	Foggy	
§Alert, Yokohama, Japan	29.26	743.2	74	23.3	55	SSW			4		5		SW			Smooth		Fair	
§Alliance, N. 39° 13′, W. 57° 56′	29.94	760.5	60	15.6	88	N			2		10		N	Heavy	Heavy	Smooth	N	Rainy	
§Ashuelot, [China. Nankin Cut-off, Yangtzekiang,	29.89	759.2	75	23.9	72	SW			1		0					None		Clear	
§Colorado, New York, N. Y.	29.82	757.4	71	21.7	76	SW	2	0.9			2		SW	0	0			Clear	
§Constitution, New York, N. Y.	29.83	757.7	70	21.1	90	NW	4	1.8			2		Calm					Hazy	
§Franklin, Off Navy Yard, Norfolk, Va	29.94	760.5	73	22.8	90	SW	12	5.4			8		SW	0	0			Cloudy	
§Independence, Mare I'd, Navy Yard, Cal.	29.93	760.2	60	15.6	100	SW	3.6	1.6			0			0	0			Clear	
§Jamestown, Sitka, Alaska *	29.78	756.4	42	5.6	91	ENE			2		8					Smooth		Cloudy	
§Kearsarge, Hampton Roads, Va	29.94	760.5	74	23.3	90	SW			3		10		SW			Smooth		Cloudy	
§Lackawana, La Union, San Salvador †	30.03	762.7	80	26.7	87	SW			1		5		SW					Fair	
§Marion, Port Stanley, Falkland I'ds	29.76	755.9	41	5.0	100	Calm			0		10			Blank	Blank	Smooth		Foggy	
§Michigan, Erie, Pa.	29.77	756.1	60	15.6	88	W			6		8		W					Cloudy	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	29.88	758.9	72	22.2	95	W			1		2		Calm					Misty	
§Monocacy, Chefoo, China	29.70	754.4	77	25.0	49	SW			0–1		8		S					Cloudy	
§New Hampshire, Port Royal, S. C.	30.05	763.3	77	25.0	82	SSW	16	7.2			8		SW	0.01	0.3			Fair	
Nipsic. Leghorn, Italy	30.12	765.0	68	20.0	65	SW			1		2							D. clouds	
§Onward, Callao Bay, Peru †	29.94	760.5	62	16.7	83	S			1		10		SSE			Long	W	Cloudy	
§Palos, Shanghai, China	29.80	756.9	73	22.8	95	ENE			2		5							Fair	
§Passaic. Washington, D. C.	29.90	759.4	76	24.4	73	SW			1		2		SW	0	0			Clear	
§Pensacola, San Francisco, Cal.	29.90	759.4	56	13.3	87	SW			1		8					Smooth	S	Hazy	
§Portsmouth, N. 34° 00′, W. 54° 53′	30.14	765.5	67	19.4	95	W			2		10					Long	NW	Cloudy	
§Powhatan, New York, N. Y.	29.89	759.2	71	21.7	90	SW			3		2		SW					Fair	
§Quinnebaug, Antwerp, Belgium	29.67	753.6	65	18.3	40	WSW			6		10		SW					Squally	
§Richmond, N. 32° 30′, E. 129° 00′	29.80	756.9	70	21.1	90	WSW			1		10		WSW	0.8	20.	Smooth	WSW	Fair	
§Rio Bravo, Brownsville, Texas †	30.07	763.8	79	26.1	87	SE	1	0.4			5		SE	0	0			Fair	
§Saratoga. N. 35° 52′, W. 5° 55′	30.25	768.3	69	20.6	75	E			6		0			0	0	Smooth		Misty	
§Shenandoah, Montevideo, Uruguay	29.79	756.7	64	17.8	78	N			5		8		Calm			Mod'ate	N	Fair	
§St. Louis, League Island, Pa.	29.89	759.2	72	22.2	90	SW	9	4.0			2			0	0			Clear	
Swatara, Saigon, Siam †	29.82	757.4	82	27.8	87	W			2		10		W			Smooth		Cloudy	
§Tennessee, New York, N. Y.	29.87	758.7				SW			1–2		2		Calm	0	0	Smooth		Fair	
§Ticonderoga, Kobe, Japan	29.71	754.6	69	20.6	75	W			1		0					Smooth		Clear	
§Trenton, Marseilles, France	30.10	764.5	71	21.7	53	NW			3		0			0	0	Mod'ate	NW	Clear	
§Vandalia. Newport, Rhode Island	29.90	759.4	62	16.7	94	SE			1		10							Misty	
§Wabash, Boston, Mass.	29.93	760.2	67	19.4	89	SE	8	3.6			10			0.05	1.3			Cloudy	
§Wachusett, Borja Bay, Strait of Magellan	29.89	759.2	41	5.0	91	ESE			2		0					Smooth		Clear	
Wyoming, Villafranca, France	30.09	764.3	66	18.9	54	ESE			1–2		2		SE			Smooth	SE	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. Halifax, N. S	30.03	762.7	54	12.2		SE			2		10		SE					Cloudy	
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent N. 48° 49', W. 26° 29'	30.45	773.4	63	17.2	83	NW			4		3		NE	0	0	Mod'ate	NW	Fair	
S. S. Ohio, Henry Morrison, N. 43° 15', W. 39° 08'.....†	30.38	770.4	77	25.0	95	SSE			3		5		SSE	Mist	Mist	Small	SSE	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 27° 45', W. 115° 31'....†	29.90	759.4	61	16.1	94	WNW			3		10		WNW			Small	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 41° 12', W. 65° 24'.....*	29.80	756.9	62	16.7	77	E			1		0			0	0	Smooth		Clear	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 49° 07', W. 18° 55'.....	30.18	766.6	58	14.4	94	NW			5		5		WNW	0	0	Mod'ate	NW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 37° 06', E. 151° 52'.....†	29.97	761.2	66	18.9	89	ESE			5		8		ESE			Mod'at	SE	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 37° 52', E. 159° 45'....†	30.19	766.8	62	16.7	88	Var.			2		8		S	0	0	Smooth	W	Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan,																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Santa Barbara, California..†	29.89	759.2	57	13.9		Calm			0		0							Foggy	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney, N. 46° 00', W. 124° 15'....†	29.77	756.1	46	7.8		SE			3		8		SW					Light rain	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, San José, Guatemala...†	29.93	760.2	75	23.9	95	N			2		8		NNE			Mod'ate	SSW	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.05	763.3	56	13.3	94	W			2		2		W			Smooth	SW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Panama, Panama.....†	29.91	759.7	78	25.6	95	NW			2		2		NW	0	0	Smooth	S	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Hong-Kong, China.....†	29.75	755.6	78	25.6	95	SW			4		8		SW	Mod'ate	Mod'ate			Squally	
§ S. S. City of Sidney, H. C. Dearborn, N. 18° 25', W. 159° 01'..*†	29.95	760.7	76	24.4		ENE			5		5		ENE	0	0	Heavy	NE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 31° 34', W. 119° 30'.....†	29.92	760.0	62	16.7	100	NW			3		10		NW	0	0	Mod'ate	NW	Cloudy	
§ S. S. Dakota, D. E. Griffiths, Seattle, Washington Ter.†	29.78	756.4	55	12.8	80	NW			1		10							Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 15° 34', W. 96° 58'.....†	29.96	761.0	80	26.7	82	WNW			1		8ks		WNW	Light	Light	Light	S	Sprinkling	
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†			53	11.7		W			3		Fog							Foggy	E. Alexander.
§ S. S. Zealandia, R. C. Ghest.																			
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes.																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 41° 00', W. 61° 28'.....†	30.06	763.5	54	12.2		N			4		8		N			Smooth		Drizzling	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 34° 16', W. 77° 40'.....†	30.08	764.0	79	26.1		SW			5		10		SW	0.05	1.3	Rough	SSW	Threatening	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Off Cape Cod, Mass.	29.97	761.2	62	16.7	72	S	4	1.8			Fog			0	0	Smooth.		Foggy	J. Jorgensen.
Schr. Annie K. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. I.†	30.06	763.5	87	30.6		E			1		2		SE	Lt. sho	wers.	Smooth		Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 11° 24', W. 12° 05'.....*†	30.20	767.1	74	23.3		SE			1		8		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.31	769.9				E			1		10		E	Light	Light			Foggy.	S. S. Miner.
Brigantine George, W. H. Champlin, N. 40° 40' W. 72° 15'.....†	30.00	762.0	64	17.8		SSW			1		10		Calm	0	0	Mod'ate	SW	Foggy	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 44° 46', W. 61° 36'.....	30.04	763.0	43	6.1	100	ENE			4		10		E	8 h'rs	8 h'rs	Smooth		Rain & fog.	James S. Garvin.

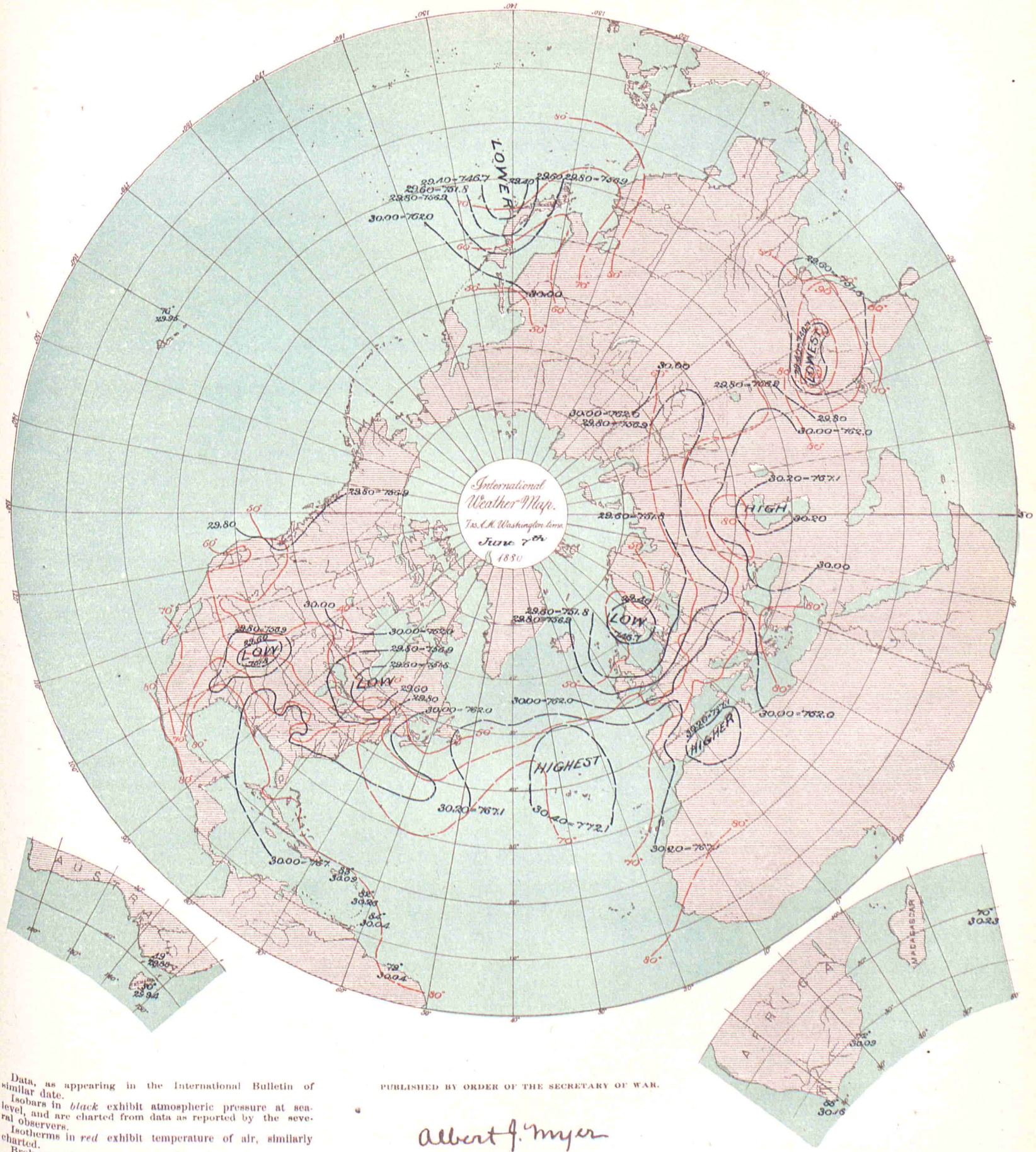
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f. p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 8, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.10	764.5	74.7	23.7	73	N			2		0			0	0	Clear.	Metge.
Algiers			30.15	765.7	70.2	21.2	67	ENE			3		0			0	0	Clear.	Nicolas.
La Calle			30.14	765.6	72.5	22.5	66	NNW			2		3			0	0	Pretty fair.	Fonfrède.
Tunis			30.18	766.5															Jacques.
Sfax			30.27	768.8															Gau.
Saida			30.15	765.9															Charon.
Tebessa			30.21	767.4	68.1	20.1	41	W			1		8			0	0	Very cloudy	Watrin.
Geriville			30.23	767.8	71.2	21.8	48	NW			2		0			0	0	Clear.	Lonchamp.
Laghouat			30.25	768.3	73.8	23.2	37	NE			1		0			0	0	Clear	Herlin.
Biskra			30.26	768.6	81.3	27.4	43	E			1		1			0	0	Very fair	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,369? m., or 4,492? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.47	748.6	30.00	762.0	74.1	23.4	54	NE			4		2			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.2	30.01	762.2	67.3	19.6	38	SW	17.0	7.6			5			0.209	5.3		Dr. Wierzbicki.
Eperies	29.11	739.5	29.96	761.0	71.6	22.0	54	S			2		5s:cs			0	0		Julius Mikolik.
Gratz	28.84	732.6	30.07	763.7	66.4	19.1	69	ENE			1		9			0	0		Andreas Rospini.
Hermannstadt	28.67	728.1	30.03	762.8	76.6	24.8	36	NW			2		6			0.069	1.75		Prof. A. Gottschling.
Kremsmünster, Observatory	28.68	728.5	29.98	761.6	65.8	18.8	66	Calm			0		2			0.055	1.4		The Staff.
Lemberg	29.00	736.6	29.95	760.8	68.0	20.0	56	NW			3		6			0	0		Dr. T. Stanecki.
Pola	29.92	760.0	30.03	762.8	73.6	23.1	63	SW			1		0			0	0		I.R. Hydrographic Office.
Szathmar	29.63	752.7	30.08	764.1	74.1	23.4	56	E			4		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.76	755.9	30.03	762.7	75.2	24.0	53	E			1		4			0	0		Karl Stancel.
Trieste	29.94	760.5	30.04	763.1	72.5	22.5	78	WSW					0			0	0		P. Busin.
Vienna	29.35	745.4	30.09	764.2	69.1	20.6	48	W			2		8			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.67	753.5	29.86	758.5	58.6	14.8	58	SW			4	5	5	SW	SW	0	0		Royal Observatory.
Furnes	29.84	758.0	29.87	758.6	58.3	14.6	68	SW			5		10			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 8 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.50	749.3	29.60	751.8	47.6	8.7		S	8	3.6			7			0.050	1.27	Gloomy	W. Boswell.
Ardrossan	29.57	751.1	29.59	751.6	52	11.1		WNW			3		3					Blue sky	G.Carrick.
Armagh, (Observatory)	29.41	747.0	29.64	752.8	49.0	9.4		NE	2	0.9			9					Showery	S. Call.
Bidston (Liverpool Obs)			29.58	751.3	46.0	7.8		W	21	9.4			10					Overcast	John Hartnup.
Bolton (Sharples)	28.92	734.6	29.43	747.5	47.8	8.8		SE	12	5.4			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.17	740.9	29.57	751.1	49.3	9.6	84	SE			3		10			0.17	4.3	Raining	J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.04	763.0	84	28.9		NE			2		3					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.55	750.6	29.65	753.1	57.0	13.9		SSW			2		10					Raining	H. Todd.
Cardington			29.66	753.4	56.6	13.7		W			4		10			Blank	Blank	Overcast	John McLaren.
Chatham (School M. E.)	29.62	752.3	29.75	755.6	56.1	13.4		SW			4		9k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.58	751.3	29.63	752.6	51	10.0		ENE			3		5					D. clouds	J. Mac Gowan.
Dover	29.77	756.1	29.80	756.9	54	12.2		WSW			5		10					Showery	J. Costello.
Falmouth (Observatory)	29.62	752.3	29.84	757.9	57.9	14.4		W			5		6					Overcast	The Staff.
Fort Napier, Natal	27.89	708.4	30.10	764.5	72.6	22.6		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.75	755.6	29.98	761.5	87	30.6		NW			1		8					Drizzling	
Galway (Queen's College)			29.66	753.4	55	12.8		NW			1		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean	30.13	765.3	30.18	766.6	72.6	22.6		NE			3		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.35	745.5	29.55	750.6	56.9	13.8		W			2		5k					D. clouds	D. G. Maclean.
Great Yarmouth	29.71	754.6	29.71	754.6	53	11.7		SW			1		6					Showery	G. T. Watson.
Greenwich (Royal Obs'y)	29.54	750.3	29.71	754.6	58.9	14.9		SW			5		8					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.65	753.1	29.87	758.7	59	15.0		WSW			4		5					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.01	763.0	30.16	766.1	61	16.1		W			6	1c				0	0	Fine	M. P. Moyle.
Holyhead	29.57	751.1	29.62	752.3	47	8.3		WSW			4		10					Showery	John Tilston.
Jersey	29.64	752.8	29.93	760.2	58.0	14.4		WSW			5	8ck						Gloomy	J. Fisher.
Kew (Observatory)	29.68	753.9	29.71	754.6	58.0	14.4		SSW	24	10.7			10					Threatening	The Met'g'l Office.
Leicester (Museum)	29.36	745.7	29.62	752.3	49.0	9.4		SW			2		9			Blank	Blank	D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.96	761.0	30.04	763.0	75.2	24.0		NW			2		1					Blue sky	A. King.
Nairn	29.51	749.5	29.60	751.8	55	12.8		NW			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.03	762.7	81.5	27.5		SE			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.43	747.5	29.62	752.3	51.3	10.7		WSW			1	8k;ks;d			WSW	0.250	6.35	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.08	738.6	29.40	751.8	56.0	13.3		WSW			6		6					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.26	743.2	29.52	749.8	53.5	11.9		SW			3		7					D. clouds	The Staff, for E J. Stone, Esq.
Plymouth	29.73	755.1	29.81	757.2	61.4	16.3		WSW			4		7					D. clouds	John Merrifield.
*Roche's Point	29.68	753.9	29.78	756.4	60	15.6		NW			6		10					Raining	Wm. Kennedy.
St. Ann's Head	29.55	750.6	29.71	754.6	54	12.2		W			7		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.60	751.8	49.7	9.8		NNW	21	9.4			5					Showery	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.86	758.4	29.92	760.0	82.4	28.0		NE			2		2					D. clouds	Serg't W. H. Lyne.
Sheffield	29.28	743.7	29.55	750.6	52.5	11.4		SSW			2		8			0.09	2.3	Overcast	W. F. Cooper.
Silloth Rectory	29.54	750.3	29.57	751.1	60.5	15.8	58	SW			2		0			0.207	5.26	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.57	751.1	44.0	6.7		NW	8	3.6			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.50	749.3	29.72	754.9	58.0	14.4		SW			4–5		10					Showery	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.83	757.7	29.85	758.2	61	16.1		W			6		10					Gloomy	W. Newcombe.
Valencia (Observatory)	29.77	756.1	29.80	756.9	53.8	12.1		WNW	23	10.3			5					Squally	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony												10	10			0.500	12.70	Threatening	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y	29.85	758.2	29.89	759.2	69.9	21.1	45	NNW	4.5	2.0			10kn			0.02	0.5	Covered	Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			29.74	755.4	57.0	13.9	76	W			3		7k	W		0.01	0.3	H'vy clouds	Andrew Gibb.
Leith (Restalrig Park) Se'tl'd			29.61	752.1	50.0	10.0		E			2		7		SE	0.13	3.3	Cloudy	C. Meldrum.
Mauritius (Observatory)	29.96	761.0	30.16	765.9	72.0	22.2	63	ESE	14.5	6.5		0	10			0.41	10.4	Dull	R. L. J. Ellery.
Melbourne (Observatory)	30.05	763.3	30.14	765.5	51.2	10.7	92	SW	2	0.9			3	NE		0.1	3.		J. Youngclause.
Monach Lt-house, Hebrides			29.70	754.4	47	8.3		NE			6	3	8	Calm		0	0		Robert Burnet.
North Unst, Shetland I's			29.46	748.3				N			6	10							

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0—9	Sea or swell. Direction frbm—	Weather.	Observer.
H. M. S Alert																			Capt.J.P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 46° 00′, W. 30° 50′			30.39	771.9	63	17.2		NNW			3		4			3	NW	Misty	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German. N. 25° 20′, W. 17° 24′			30.15	765.8	69	20.6		N			6		5					Misty	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.25	666.7	29.97	761.2	68.9	20.5	81	NE			2	10ks				0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.64	752.9	29.69	754.1	56.3	13.5	57	W			4		9						
Fanöe	29.65	753.2	29.67	753.7	54.9	12.7	68	W			6		8						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.12	765.0	30.16	766.1	40.3	4.6	68	NE			7		8						
Thorshavn (Faröe)	29.64	752.8	29.67	753.7	46.9	8.3	63	NE			5		7						
Vestervig	29.48	748.7	29.57	751.1	53.8	12.1	66	SW			6		6						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.43	747.4	29.98	761.4	57.2	14	95	NW			3		8n		NW	0.028	0.7	Raining	Collignon, Director.
Amiens, Normal School	29.81	757.1	29.92	759.9	66.9	19.4	96	SSE			2		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.60	751.9	29.86	758.5	52.9	11.6	78	W			4		4k	E		0.020	0.5		Klein, Commandant.
Avignon, Normal School	29.99	761.7	30.07	763.7	75.2	24	42	NW			1		0			0	0	Very clear	Girand, Director.
Bar-sur-Seine	29.47	748.6	30.02	762.6	61.2	16.2	83	SW			1		8kn		SW	0.008	0.2	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.64	752.9	29.90	759.4	65.7	18.7	49	WSW			3		10		W	0	0	Covered	Frère Eugene Marie.
Besançon, Normal School	29.22	742.1	30.10	764.4	61.7	16.5	69	S			1		10		SW	0.059	1.5	Covered	A. Carré, Director.
Bordeaux	29.91	759.7	30.11	764.7	66.0	18.9	52	WSW			1		8		SW	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.24	742.6	30.16	766.1	66.2	19	66	N			1		8cn	S	S	0	0	Very cloudy	Marlot, Director.
Bourges, Normal School	29.54	750.3	30.08	764.0	66.2	19	74	S			3		kn		S	0.043	1.1		M. Gence, Director.
Brest, Naval Observatory	29.74	755.5	29.99	761.7	64.0	17.8	70	W			3		10		W	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.80	757.0	29.87	758.8	62.8	17.1	68	W			1		5		W	0 031	0.8	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.67	753.6	30.08	763.9	73.0	22.8	45	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch	29.67	753.5	29.98	761.5	67.1	19.5	43	SSW			4		5		W	0.087	2.2	Cloudy	Jadot, Director
Chartres, Normal School	29.35	745.6	29.91	759.7	61.5	16.4	83	SW			2		10		E	0.24	6.	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.73	729.7	30.06	763.5	64.0	17.8	55	W			2		10		W	0	0		Alluard, Director.
Commercy, Normal School	29.13	740.0	29.97	761.2	63.3	17.4	43	W			4		k		W	0.260	6.6		Dr. Coullet, Director.
Commune de Gréasque*	28.98	736.1	30.12	765.1	72.0	22.2	38	SW			2		5		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.27	743.4	30.02	762.4	68.4	20.2	59	NNW			2		k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch	29.85	758.2	30.07	763.7	59.2	15.1	89	WSW			4		2		WSW	0.165	4.2	Slightly cld'y	Mouillot, Director.
Le Mans, Normal School	29.67	753.5	29.95	760.7	62.2	16.8	92	W			4		5	SSW	WSW	0.008	0.2	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.17	740.9	30.10	764.5	63.5	17.5	80	W			1		10n		W			Covered	M. Cadoret, Director
Lorient, Naval Observatory	29.91	759.8	30.02	762.4	61.5	16.4	69	W			4		5		W	0.157	4.00	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.47	748.6	30.08	764.0	69.4	20.8	49	SW			1				SW	0	0		Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.80	757.0	30.07	763.8	66.9	19.4	59	W			2-3		3		W	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.91	734.4	29.94	760.5	63.3	17.4	67	SW			3		k		SW	0	0		Barbier, Director.
Mont-Louis	24.94	633.4	30.17	766.4	55.0	12.8	77	E	13.0	5.8			3		NW	0	0		M. Cave, for Dr. Fines.
Nice	30.03	762.8	30.07	763.7	70.9	21.6	70	S			2			SE	SE	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.87	758.7	30.08	763.9	72.1	22.3	47	W			1		0			0	0	Clear.	M. Boyer, Director.
Perpignan	30.00	762.0	30.10	764.6	69.4	20.8	50	NW	5.6	2.5			3		SW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.64	575.1			49.1	9.5							1		SW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.02	737.1	30.05	763.3	72.0	22.2	49	N			1		1	N	N	0	0	Clear.	M. Tallieu
Puy de Dome (Summit) Ob	25.21	640.4			40.3	4.6	100	WSW			4		8			0.075	1.9		Alluard, Director.
Rochefort, Naval Obs'y	30.10	764.6	30.13	765.4	66.2	19.0	63	WSW			2		8	WSW	WSW	0.04	1.	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.79	756.7	29.88	758.9	63.3	17.4	47	SSW			1		8		W	0.047	1.2	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.90	759.4	29.93	760.1	63.3	17.4	65	NW			3		1	NW	NW	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.79	756.7	29.96	760.9	64.0	17.8	63	SSW			3		10	W	SW	0.016	0.4	Covered	E. Renou, Director.
Tarbes, Normal School	29.07	738.4	30.15	765.8	57.2	14	78	W			1								T. Huguet, Director
Toulouse, Observatory	29.46	748.3	30.19	766.8	66.7	19.3	63	NW			1		8			0	0	Very cloudy	B. Bailland, Dir.
Tours	29.81	757.2	30.01	762.2	62.2	16.8	73	WSW			3		8		WSW	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.45	748.1	29.95	760.6	60.4	15.8	73	SW			3					0.195	4.96		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.48	748.8	30.18	766.5	65.8	18.8	59	ENE			1		8		W	0	0	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.24	768.0	30.26	768.7	80.6	27										0.16	4.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.67	753.7			63.9	17.7	69	SSW			2		10		SW	0.059	1.5	Sprinkling	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.80	756.8	29.82	757.4	67.6	19.8	86	SSE	4.5	2.0			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upper 0–10.	Clouds. Amount. Lower 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.12	739.7	29.98	761.6	66.7	19.3	59	SW			6		3k	W		0.102	2.6		Prof. Dr. Hoh.
Berlin	29.74	755.0	29.89	759.3	61.7	16.5	51	SW			5		8			0.063	1.6		Prof. Dr. Arndt
Breslau	29.48	748.8	30.01	762.3	63.5	17.5	40	W			3		4			0.028	0.72		Royal University Obs'y
Carlsruhe	29.54	750.4	29.96	761.0	66.9	19.4	59	SW			3		5	SW		0.071	1.8		Albert Senz.
Cassel	29.28	743.8	29.89	759.2	65.1	18.4	67	SW			2		7	SW		0.359	9.12		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.64	752.8	30.00	762.0	68.0	20.0	34	W			3		6			0.087	2.2		Physical Society
Friedrichshafen	28.61	726.6	30.01	762.2	65.5	18.6	60	SW			4		6	SW		0	0	Hazy	Chief Telegrapher Wilhelm.
Hamburg	29.74	755.4	29.81	757.2	57.9	14.4	76	WSW			6		10			0.366	9.3		Dr. Reinhold Kleeman
Kiel	29.74	755.3	29.75	755.7	57.4	14.1	57	W			5		7			0.220	5.60		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.67	753.6	29.75	755.6	54.5	12.5	56	W			10		2	W		0.150	3.8		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.54	750.4	29.96	760.9	64.8	18.2	39	WSW			4		6	W		0.256	6.5		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.69	754.0	29.91	759.7	62.4	16.9	49	SW			6		7ks	SW		0.209	5.3		Dr. Assmann.
Memel	29.61	752.1	29.66	753.5	52.3	11.3	76	W			6–7		5k						Reinbrecht & Issermann.
Munich	28.21	716.5	30.08	763.9	67.3	19.6	44	SW			2		9	SW		0.039	1.0		Dr. C. Lang.
Neufahrwasser	29.79	756.7	29.81	757.1	60.4	15.8	52	WNW			5		7			0.035	0.9		A. Lothes.
Neustadt (Palatinate)	29.43	747.6	29.96	761.0	65.5	18.6	45	SW			2		10			0	0		Reallehrer Dicknether.
Posen	29.46	748.3	29.74	755.4	62.8	17.1	97	W			8		10			0.055	1.4		Prof. Dr. Magener.
Strassburg (in Alsace)	29.50	749.2	30.04	762.9	66.7	19.3	46	W			5		5	W		0.183	4.64		Imp. University Observatory.
Stuttgart	29.04	737.5	29.91	759.6	67.1	19.5	44	W					4	W		0	0		Prof. Dr. Schoder.
Thorn	29.71	754.6	29.89	759.3	60.8	16.0	52	W			5		4			0.106	2.7		Dr. Cunerth.
Weissenburg (Bavaria)	28.51	724.2	30.09	764.3	65.1	18.4	53	WSW	5.4	2.4			6k		W	0.079	2.0		Reallehrer J. Hopfner.
Wustrow	29.78	756.5	29.81	757.2	56.7	13.7	68	SW			5		10ks			0.283	7.2		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.64	752.9	30.01	762.3	59.2	31.8		SW			2.0		0					Hazy	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.42	747.2	29.47	748.4	87.0	30.6	86	SSW	32.4	14.5			8	SW		0	0	Misty	
Deesa	29.04	737.7	29.50	749.3	96.2	35.7	35	SW	23.5	10.5			0			0.05	1.3	Blue sky	
Bombay	29.68	753.8	29.71	754.7	86.9	30.5	73	WSW	15.0	6.7			3		W	0.01	0.3	D. clouds	
Poona (Yarrowda)	27.87	707.8	29.70	754.5	81.5	27.5	55	WSW	24.0	10.7			2		W	0	0	D. clouds	
Belgaum	27.26	692.3	29.80	757.0	72.6	22.6	88	WSW	5.0	2.2			6	E	SW	0.06	1.5	D. clouds	
Lahore	28.62	727.1	29.32	744.6	109.8	43.2	14	SW	2.1	0.9			3			0	0	Blue sky	
Roorkee	28.44	722.3	29.27	743.5	107.3	41.8	13	W	5.0	2.2						0	0	Hazy	
Agra	28.86	733 0	29.28	746.4	106.6	41.4	26	S	7.2	3.2			3		S	0	0		
Nagpur	28.51	724 0	29.52	749.7	92.2	33.4	41	W	7.7	3 4			9		SW	0	0	D. clouds	
Jubbulpore	28.14	714.8	29.45	748.1	95.7	35.4	44	NW	8.2	3.7			10			0	0	Overcast	
Lucknow	29.02	737.2	29.38	746.2	100.7	38.2	35	NW	5.2	2.3			10	Calm		0	0	Overcast	
Allahabad	29.08	738.5	29.37	746.0	103.6	39.8	34	NW	4 6	2.1			7		NW	0	0	D. clouds	
Patna	29.25	743.0	29.43	747.4	95.1	35.1	49	SW	2.7	1.2			10	SW	SW	0.02	0.5	Overcast	
Hazaribagh	27.54	699.6	29.53	750 0	79.8	26.6	73	SSE	8.0	3.6			10		W	0.07	1.8	Thunder-storm	
Cuttack	29.41	747.1	29.49	749 1	90.1	32.3	58	SW	2.5	1.1			6			0	0	D. clouds	
Calcutta (Alipore)	29.49	749.1	29.52	749.7	84.7	29.3	87	S	10	4.5			10		S	0.01	0.3	Overcast	
Goalpara	29.16	740 6	29.57	751.0	73.1	22.8	98	SSE	7.8	3.5			10			5.36	136.1	Raining	
Chittagong	29.49	749.0	29.58	751.2	83.1	28.4	82	ESE	7.1	3.2			9			0	0	D. clouds	
Sibsagar	29.27	743.4	29.60	751.9	81.6	27.6	89	SE	2.1	0.9			10	E	E	0.49	12.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.65	753.0	30.05	763.2	72.5	22.5	47	W	0.7	0.3			9			0	0		Prof. Giovanni Clodig.
Milan	29.51	749.5	30.01	762.2	74.5	23.6	48	SE	3.8	1.7			4	E		0	0		Prof. Schiaparelli.
Padua	29.94	760.4	30.05	763.2	71.6	22.0	51	ENE	9.4	4.2			4	NW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.11	739.4	30.00	762.0	70.5	21.4	59	N			2		6	ENE		0	0		Prof. P. F. Denza.
Genoa	29.90	759.4	30.09	764.2	67.1	19.5	60	SW	4.9	2.2			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.14	714.7	30.01	762.3	68.2	20.1	56	SE			2		4	W		0	0		Prof. D. C. Bruno.
Pesaro	29.99	761.7	30.04	762.9	68.4	20.2	76	NE	11.2	5.0			1	SSW		0	0		Prof. Luigi Guidi.
Florence	29.78	756.3	30.03	762.8	73.4	23.0	43	W			2		0			0	0		Cav. F. Meucci.
Leghorn	30.01	762.2	30.10	764.4	68.7	20.4	64	WSW	3.8	1.7			2			0	0		Prof. P. Monte.
Rome	29.89	759.1	30.06	763.5	75.0	23.9	48	SSW	9.4	4.2			4			0	0		Prof. P. S. Ferrari.
Lecce	29.77	756.1	30.02	762.4	73.9	23.3	48	NE	12.5	5.6			5			0	0		Prof. C. De Giorgi.
Cosenza	29.15	740.4	30.00	762.1	82.4	28.0	66	SE	0	0			3			0	0		Prof. D. Conti.
Cagliari	29.90	759.4	30.09	764.3	72.7	22.6	44	NW			4		3	W		0	0		Prof. A. Pacinotti.
Palermo	29.86	758.5	30.11	764.8	67.8	19.9	64	ENE	6.9	3.1			1			0	0		Prof. G. Cincciatore.
Syracuse	29.91	759.8	29.96	760.9	81.1	27.3	46	NE	3.8	1.7			5	S		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.51	749.6	30.02	762.5	73.4	23.0	50	WSW	1.8	0.8			3			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.7	20.4	83	Calm	0	0		ck	10ks			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.61	752.1	29.81	757.2	64.1	17.8	95	SW	1.0	0.4			1s			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.61	752.1	29.68	753.9	69.4	20.8	58	NNW	4.0	1.8		2ck	0			0	0	Fair	The Staff.
Wakayama	29.73	755.1	29.78	756.4	68.8	20.4	83	S	1.6	0.7		9ck				0.001	0.03	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.08	637.0	30.09	764.3	58.1	14.5	72	W			1	8ks	0			0	0	Cloudy	Prof. L. Perez.
Guanaxuato	23.68	601.6			63.9	17.7	85	Calm	0	0		10n	3nk	Calm	SW	0.06	1.6	Covered	Vicente Fernandez.
Leon	24.43	620.5	29.97	761.3	70.0	21.1	79	S			3	5k	0	SW		0	0	Fair	Prof. M. Leal.
Mazatlan	29.78	755.2	29.99	761.7	78.5	25.8	66	Calm			0	9k	0	NE		0	0	Very cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.08	586.6	29.99	761.7	60.6	15.9	72	Calm	0	0		5k	0	N		0	0	Cloudy	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.5	29.82	757.4	70.0	21.1	62	NW			1	5c	0			0	0	Fair	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.45	595.5	30.10	764.5	60.6	15.9	40	Calm	0	0		2ck	0	E		0.12	3.0	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.3	30.08	764.0	66.4	19.1	49	E			1	7	0	W		0.012	0.3	Foggy	G. Barroeta, M. D.
Tlacotalpam	29.00	759.4	29.91	759.7	78.3	25.6	93	S			1	4	1	SW	S	0	0	¼ clouded	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.60	574.0	30.14	765.6	60.8	16.0	81	Calm			0	6c	0	NW		2.05	52.0	Fair	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.85	758.2	29.85	758.2	57.6	14.2		SW			4					0.264	6.7		
Groningen	29.73	755.2	29.79	756.6	55.4	13.0		WSW			5					0.232	5.9		
Helder	29.77	756.1	29.77	756.1	55.0	12.8		SW			5					0.024	0.6		
Hellevoetsluis	29.82	757.4	29.82	757.4	57.4	14.1	61	SW			4					0.335	8.5		
Utrecht	29.80	756.8	29.84	758.0	57.7	14.3	70	SW			4		10			0.004	0.1	Dull	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Bergen	29.40	746.7	29.45	748.1	56.5	13.6	56	S	13.4	6.0			3			0	0		
Brönö	29.43	747.6	29.47	748.6	48.2	9.0	73	Calm	0	0			10			0.059	1.5	Raining	
Christiania	29.30	744.1	29.44	747.7	57.7	14.3	49	SW	9	4			7			0.024	0.6		
Tromsö	29.55	750.6	29.61	752.0	39.9	4.4	59	NE	11	5			8			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Angra (Azores)	30.31	769.8	30.52	775.1	66.9	19.4	88	WSW			2		6			0	0		Dr. J. A. Sampaio.
Campo Maior	29.13	739.8	30.02	762.5	73.8	23.2	34	WNW	9.8	4.4			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.19	766.9	30.28	769.1	67.8	19.9	57	SW	4.9	2.2			8			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.85	758.3	30.21	767.4	64.8	18.2	57	NNW	16.1	7.2			2	SW		0	0		The Staff.
Ponta Delgada (Azores)	30.41	772.3	29.48	774.1	64.4	18.0	77	Calm	0	0			3			0.024	0.6		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.87	758.7	74.8	23.8		WNW			2		4		WNW	1	WNW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't.
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sá da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.07	763.7	67.3	19.6		WNW			2		3			2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães, Macao, China			29.90	759.4	82.4	28.0		NE			1		4		NE				D. clouds	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Archangel	29.44	747.7	29.46	748.2	60.4	15.8	61	NW	13	6			6ks						Capt. Sselliwerstow.
Astrakhan	30.22	767.6	30.14	765.5	82.2	27.9	28	SSE	16	7			0						Capt. Wisganow.
Barnaul	29.16	740.6	29.63	752.7	66.6	19.2	61	SW	0	0			10						Meteorological Obs.
Dorpat	29.28	743.8	29.52	749.8	60.4	15.8	59	ESE	7	3			9kn						Prof. Dr. Weihrauch.
Ekaterinburg	28.94	735.0	29.85	758.1	78.6	25.9	39	W	18	8		4ck						Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.52	749.7	29.78	756.3	64.8	18.2	93	WSW	20	9			10n						Physical Cabinet.
Kertch	30.10	764.5	30.12	765.0	74.8	23.8	67	S	4	2			0						Lagorio.
Kieff	29.32	744.6	29.92	760.0	72.9	22.7	45	WSW	11	5			8cks						Physical Cabinet.
Krotkowo*	29.43	747.5	29.87	758.8	76.6	24.8	50	S	9	4			10						Cand. Fatjanow.
Lugan	29.76	756.0	29.96	761.0	79.7	26.5	41	WNW	9	4			2			Blank	Blank		Meteorological Obs.
Moscow	29.26	743.1	29.78	756.5	68.9	20.5	43	S	10.1	4.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.04	763.1	30.11	764.9	80.1	26.7	45	S	18	8			2k						Kurdakof.
Nikolaievsk, on the Amoor	29.86	758.5	29.95	760.7	47.7	8.7	84	SE	16	7			0						
Nukuss																			
Orenburg																			
Pekin (China)	29.57	751.0	29.71	754.6	77.2	25.1	38	S	11	5			1k						Physical Observatory.
St. Petersburg	29.54	750.2	29.55	750.6	57.6	14.2	64	NNW	4	2			7cs;k						Central Physical Obs.
Tashkend	28.47	723.2	29.99	761.8	71.2	21.8	54	Calm	0	0			0						Teich, A. M.
Tiflis	28.71	729.2	30.07	763.6	79.7	26.5	45	SE	4	2			0						Physical Observatory.
Vladivostock																			
Warsaw	29.53	750.1	29.95	760.7	61.0	16.1	48	W	25	11			8k						Astronomical Obs.
Wilna	29.30	744.2	29.72	754.8	54.8	12.4	76	SW	31	14			9					Heavy clouds	Astronomical Obs.
Yeniseisk	29.51	749.5	29.78	756.5	68.0	20.0	35	SE	2	1			5						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Barcelona, Met. Obs'y	30.01	762.2	30.11	764.9	71.2	21.8	63	SW	4.9	2.17			4k			0	0	½ Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.14	765.5	30.19	766.9	69.3	20.7	60	NW	1.9	0.83		3	6	NW		0	0	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.16	689.8			71.6	22.0	50	E	15.1	6.74			2			0	0	Light clouds	Domingo Martin y Perez.
Madrid, Royal Observatory	27.87	707.9	29.98	761.6	60.4	15.2	36	SW	16.4	7.33		0	2			0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.99	761.8	30.14	765.5	77.0	25.0	63	S	2.3	1.03		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.26	743.2	30.15	765.8	63.9	17.7	63	N	4.3	1.9			7			0	0	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	761.9	30.06	763.5	77.1	25.1	55	Calm	0	0		10ck	0	SSW		0.902	22.9	Cloudy	Benito Vines, S. J.
Manila, Philippine Islands	29.77	756.3	29.83	757.6	85.7	29.8	76	SW	6.6	3.0			3kn		E	0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.07	763.7	30.17	766.2	73.6	23.1	64	WNW	8.5	3.8		0	0			0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.6	30.11	764.9	79.5	26.4	94	E	4.1	1.85		6kn	7kn	E	E	0.679	17.25	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.43	747.6	29.47	748.6	43.2	6.2		N			2		10			2.362	60.0		
Umea	29.48	748.8	29.53	750.1	45.0	7.2	77	SSW			4		10			0.063	1.6		
Hernosand	29.46	748.2	29.51	749.5	52.9	11.6	86	SSW			2		5			0.232	5.9		
Stockholm	29.32	744.8	29.50	749.3	57.6	14.2	55	WSW			2		10			0.051	1.3		
Wisby	29.45	748.1	29.51	749.6	48.2	9.0	87	WNW			2		10			0.055	1.4		
Sub-Series.																			
Upsala	29.36	745.8	29.45	749.6	58.5	14.7	55	W	5.1	2.3			9		W	0.002	0.05		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall		
Barque Australia					J. P. Pahlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 37° 07′, W. 15° 36′				D. clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.64	727.5	30.03	762.8	66.6	19.2	46	SW			3		2			0	0	Clear	The Observatory.
Zurich	28.43	722.1	30.04	762.9	63.9	17.7	69	W			3		5			0	0	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.3 mm.; Thermometer, —0.6 Cent. Relative Humidity, —10 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			30.07	763.6	81.0	27.2	54	NNE	16	7.0			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.07	763.6	77.2	25.1		SW			2		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.87	758.8	81.3	27.4	75	NE			1		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					53.0	11.7		Calm	0	0			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.21	767.3	30.27	768.8	52.3	11.3	90	NE	5	2.2			10s			Inap.	Inap.	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.18	766.6	30.22	767.6	51.5	10.8	98	E	6	2.7			10n			0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.89	759.2	30.08	764.0	60.4	15.8	70	W			1	5cs	0			0	0	Fair	James Smith, M. A.
Dalhousie, N. B.	30.09	764.3	30.26	768.6	51.0	10.6	94	E			1		10s			0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	30.15	765.8	30.17	766.3	40.6	15.9	68	S	20	8.9			10s			Inap.	Inap.	Threatening	J. McWilliams.
Fredericton, N. B.	30.19	766.8	30.26	768.6	56.0	13.3	78	NE	1	0.4			10s			0	0	Clearing	Prof. Harrison.
Fort Garry, Manitoba	28.98	736.1	29.78	756.4	60.0	15.6	88	SE	5	2.2		2cs	2s	SE		0	0	Fair	James Stewart.
Granton, Ontario	28.97	735.8	30.06	763.5	53.0	11.7	80	N			1	0	0			0	0	Clear	James Grant.
Halifax, N. S.	30.10	764.5	30.23	767.8	51.3	10.7	91	SE	4	1.8			10n			Inap.	Inap.	Cloudy	A. Allison.
Hamilton, Ontario	29.70	754.4	30.08	764.0	52.9	11.6	80	NE			1		10s			0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.71	754.6	30.04	763.0	55.9	13.3	81	E	1	0.4		10cs	0	Calm		0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	30.21	767.3	30.28	768.3	45.0	7.2	96	E	3	1.3			Fog			0	0	Foggy	C. H. Rigby.
Montreal, Quebec	29.99	759.4	30.10	764.5	59.0	15.0	62	SW	5	2.2			10s			0.02	0.5	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.87	758.7	29.90	759.4	43.0	6.1	91	SW			1		10n			0.49	12.4	Clearing	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.37	746.0	30.07	763.8	47.0	8.3	77	W	12	5.4		0	0			0.06	1.5	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.33	745.0	30.07	763.8	58.7	14.8	76	W			1	4k	0			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.38	746.2	30.06	763.5	60.1	15.6	94	Calm	0	0		10k	0	W		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.42	747.3	30.05	763.3	60.1	15.6	77	W	1	0.4		2ck	0	W		0	0	Clear	M. Payne.
Quebec, Quebec	29.80	756.9	30.12	765.0	59.0	15.0	88	E			1	0	2s			0.18	4.6	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.55	750.6	30.01	762.2	48.1	8.9	70	Calm	0	0			8s			0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	30.07	763.8	30.24	768.1	54.0	10.0	85	SW	3	1.3			10s			0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.36	745.7	30.08	764.0	51.1	10.6	71	SW	7	3.1			10ks			0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.70	731.3	30.07	763.8	49.9	9.9	79	E	3	1.3		0	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.22	767.6	30.26	768.6	47.0	8.3	100	N	1	0.4			10n			0.01	0.3	Foggy	T. C. Hill, C. E.
Toronto, Ontario	29.72	754.9	30.10	764.5	56.8	13.8	65	N	5	2.2		4cs	0	W		0	0	Fair	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.02	737.1	30.08	764.0	54.7	12.6	78	N	7	3.1		1k	0			0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	30.14	765.5	30.21	767.3	53.6	12.0	70	NE	2	0.9		6ck	0	NW		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.15	765.8	30.40	772.1	45	7.2	100	E					Fog			0.24	6.1	Fog & mist.	John Delany.
St. Pierre, N. F., Hôpital Maritime			30.20	767.1	46.4	8.0		S			1					0.24	6.1		The Commandant.

Note.—The originals give the wind force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.05	763.3	30.13	765.3	67	19.4	46	NW	4	1.8		8c	Haze	Calm	Calm	0.01	0.3	Fair	
Alpena, Michigan	29.39	746.5	30.04	763.0	47	8.3	70	W	9	4.0		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.86	733.0	29.96	761.0	71	21.7	85	SW	5	2.2		8k	2s	Calm	Calm	0.42	10.7	Cloudy	
Atlantic City, New Jersey	30.03	762.7	30.04	763.0	65	18.3	78	NE	3	1.3			10s		NE	0	0	Cloudy	
Augusta, Georgia	29.85	758.2	30.05	763.3	73	22.8	85	S			1		10s		Calm	Inap.	Inap.	Cloudy	
Baltimore, Maryland	30.03	762.7	30.08	764.0	71	21.7	49	NE	8	3.6		2k	0	W		0	0	Clear	
Barnegat, New Jersey	30.02	762.5	30.04	763.0	63	17.2	89	NE	12	5.4			10s		NE	0	0	Cloudy	
Bismarck, Dakota	27.77	705.4	29.63	752.6	60	15.6	88	SE	16	7.2			10s		SE	0	0	Cloudy	
Boerne, Texas	28.44	722.4	29.70	754.4	74	23.3	90	S	12	5.4		5k	8ks	S	S	0	0	Cloudy	
Boise City, Idaho	27.12	688.8	30.08	764.0	46	7.8	62	Calm	0	0			10s		W	0.09	2.3	Cloudy	
Boston, Massachusetts	29.99	761.7	30.15	765.8	52	11.1	93	NE	16	7.2			Fog		Calm	0.05	1.3	Foggy	
Brackettville, Texas	28.72	729.5	29.71	754.6	77	25.0	82	E	10	4.5			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	28.79	731.3	29.75	755.6	60	15.6	86	SE	20	8.9		5k	0	SW		0	0	Fair	
Brownsville, Texas	29.83	757.7	29.88	758.9	82	27.8	79	S	8	3.6		2ck	0	Calm		0	0	Clear	
Buffalo, New York	29.37	746.0	30.06	763.5	59	15.0	76	SW	5	2.2		8k	0	SW		0	0	Fair	
Burkes, Arizona					65	18.3	22	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.83	757.7	30.12	765.0	62	16.7	56	N	1	0.4		8cs	0	W		0.07	1.8	Fair	
Cairo, Illinois	29.63	752.6	30.01	762.2	73	22.8	72	S	6	2.7			10ks		W	0	0	Cloudy	
Campo, California	27.33	694.2	29.90	759.4	40	4.4	82	SW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.99	761.7	30.00	762.0	77	25.0	82	W	7	3.1		Haze	0	Calm		0.03	0.8	Clear	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	73	22.8	81	W	4	1.8		8cs	0	SW		0.02	0.5	Fair	
Cape Lookout, N. Carolina	30.00	762.0	30.01	762.2	75	23.9	90	NW	8	3.6		5c;k	0	Calm;NW		0.02	0.5	Fair	
Cape May, New Jersey	29.99	761.7	30.02	762.5	69	20.6	75	NE	22	9.8			10s		NE	0	0	Cloudy	
Castroville, Texas	29.10	739.1	29.77	756.1	80	26.7	78	SE	11	4.9			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.04	763.0	30.07	763.8	81	27.2	74	W	7	3.1		1k	2ks	Calm	W	0.39	9.9	Fair	
Charleston, South Carolina	29.97	761.2	30.02	762.5	76	24.4	77	N	4	1.8		0	0			0.52	13.2	Clear	
Charlotte, North Carolina	29.16	740.7	29.94	760.5	69	20.6	95	SE	2	0.9			10s		SE	2.14	54.4	Cloudy	
Chattanooga, Tennessee	29.23	742.4	30.00	762.0	69	20.6	80	W	1	0.4		2cs	Sm'e	Calm	Calm	0	0	Fair	
Cheyenne, Wyoming	23.77	603.8	29.73	755.1	52	11.1	35	NW	6	2.7		0	0			0	0	Clear	
Chicago, Illinois	29.31	744.5	29.98	761.5	65	18.3	68	S	1	0.4			10ks		W	0.02	0.5	Cloudy	
Chincoteague, Virginia	29.98	761.5	30.00	762.0	71	21.7	78	NE	20	8.9		5c	Haze	NE	Calm	Inap.	Inap.	Fair	
Cincinnati, Ohio	29.40	746.7	30.02	762.5	68	20.0	56	SE	1	0.4		0	0			0	0	Clear	
Cleveland, Ohio	29.35	745.5	30.06	763.5	62	16.7	67	S	3	1.3		2ck	0	W		0	0	Clear	
Coleman City, Texas	28.06	712.7	29.63	752.6	76	24.4	73	S	12	5.4		0	0		Calm	0	0	Clear	
Columbus, Ohio	29.22	742.2	30.03	762.7	68	20.0	70	NE	6	2.7		Sm'e	0	Calm		0	0	Clear	
Concho, Texas	27.92	709.2	29.50	749.3	77	25.0	69	S	16	7.2		2ck	0	SW		0	0	Fair	
Corsicana, Texas	29.44	747.8	29.88	758.9	77	25.0	82	S	16	7.2		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.32	744.7	29.93	760.2	64	17.8	83	E	7	3.1		1k	0	S		0.02	0.5	Clear	
Dayton, Washington T'y					46	7.8	69	S			4		10s		SW	0.35	8.9	Cloudy	
Deadwood, Dakota	24.99	634.7			62	16.7	42	SW	12	5.4		8cs	0	SW		0	0	Fair	
Decatur, Texas	28.69	728.7	29.79	756.7	77	25.0	82	SE	16	7.2		2ck	5s	Calm	S	0	0	Clear	
Delaware Breakwater, Del.	30.03	762.7	30.05	763.3	66	18.9	89	NE	16	7.2			10s		NE	0	0	Cloudy	
Denison, Texas	29.12	739.6	29.87	758.7	75	23.9	86	SE	3	1.3		2ck	5ks	S	S	Inap.	Inap.	Cloudy	
Denver, Colorado	24.51	622.5	29.73	755.1	59	15.0	33	SW	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	29.01	736.8	29.87	758.7	58	14.4	76	E	5	2.2		0	0			0.04	1.0	Clear	
Detroit, Michigan	29.38	746.2	30.04	763.0	56	13.3	75	NE	4	1.8		5cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.04	686.8	29.17	740.9	68	20.0	84	SE	14	6.3		0	5s		E	0	0	Fair	
Dubuque, Iowa	29.28	743.7	29.96	761.0	62	16.7	72	E	4	1.8		5k	Haze	S	Calm	Inap.	Inap.	Fair	
Duluth, Minnesota	29.31	744.5	29.98	761.5	52	11.1	73	NE	5	2.2		0	0			0	0	Clear	
Eagle Pass, Texas	29.04	737.6	29.72	754.9	83	28.3	64	SE	12	5.4		0	0			0	0	Clear	
Eastport, Maine	30.16	766.1	30.23	767.8	45	7.2	92	E	4	1.8			10s		Calm	0	0	Cloudy	
Edinburg, Texas					82	27.8	91	SE			1	5k	2s	SE	S	0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.34	745.2	30.04	763.0	66	18.9	54	SW	2	0.9		0	5ks		W	0	0	Fair	
Escanaba, Michigan	29.39	746.5	30.04	763.0	53	11.7	73	W	3	1.3		0	0			0	0	Clear	
Florence, Arizona	28.33	719.6	29.93	760.2	69	20.6	56	SE	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	25.00	635.0	30.45	773.4	42	5.6	50	NE	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.50	698.5	29.23	742.4	59	15.0	87	SE	1	0.4			10s		SW	0.73	18.5	Cloudy	
Fort Custer, Montana	26.41	670.8			52	11.1	93	NW	4	1.8			10n		Calm	0.24	6.1	Light rain	
Fort Davis, Texas	25.15	638.8	30.11	764.8	73	22.8	55	W	5	2.2		0	0			0	0	Clear	
Fort Elliot, Texas	26.66	677.2	28.74	730.0	71	21.7	58	SE	14	6.3		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.30	744.2	29.81	757.2	68	20.0	95	NE	4	1.8			10s		W	1.24	31.5	Cloudy	
Fort Grant, Arizona	25.16	639.0	26.96	761.0	69	20.6	8	E	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	28.52	724.4	29.72	754.9	77	25.0	66	S	12	5.4		0	0			0	0	Clear	
Fort Keogh, Montana	26.86	682.2			55	12.8	93	Calm	0	0			10n		NW	0.09	2.3	Light rain	
Fort McKavett, Texas	27.60	701.0	29.41	747.0	74	23.3	76	S	10	4.5		1ck	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.55	725.2	29.59	751.6	76	24.4	86	SE	22	9.8		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.75	704.8			59	15.0	76	S	14	6.3		8k	0	S		0.16	4.1	Cloudy	
Fort Verde, Arizona					58	14.4	48	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.90	759.4	29.94	760.5	83	28.3	71	S	12	5.4		1ck	1ks	NW	S	0	0	Clear	
Grand Haven, Michigan	29.38	746.2	30.02	762.5	58	14.4	70	E	8	3.6		0	0			0	0	Clear	
Helena, Montana					46	7.8	62	SW	7	3.1			8ks		Calm	Inap.	Inap.	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.23	742.4	29.98	761.5	69	20.6	65	E	4	1.8		5k	0	W		0	0	Fair	
Indianola, Texas	29.90	759.4	29.93	760.2	84	28.9	71	S	18	8.0		1k	0	Calm		0	0	Fair	
Jacksboro, Texas	28.66	728.0	29.72	754.9	75	23.9	77	SE	12	5.4		0	0			0	0	Clear	
Jacksonville, Florida	30.04	763.0	30.06	763.5	79	26.1	78	SW	8	3.6		5k	0	SW		0.23	5.8	Fair	
Keokuk, Iowa	29.27	743.4	29.86	758.4	66	18.9	79	E	5	2.2		0	2s		Calm	0	0	Clear	
Key West, Florida	30.04	763.0	30.07	763.8	81	27.2	78	SE	8	3.6		2k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	29.89	759.2	29.91	759.7	69	20.6	95	N	13	5.8		8c	0	W		0.94	1.0	Cloudy	
Knoxville, Tennessee	29.04	737.6	30.01	762.2	68	20.0	74	Calm	0	0		0	0			0	0	Clear	
La Crosse, Wisconsin	29.21	741.9	29.94	760.5	57	13.9	81	NE	1	0.4			10s		Calm	0	0	Cloudy	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	58	14.4	42	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.40	746.7	29.72	754.9	81	27.2	70	SE	10	4.5		1c	0	Calm		0	0	Clear	
Leavenworth, Kansas	28.96	735.6	29.77	756.1	64	17.8	73	SE	2	0.9		4cs	2s	N	S	0.19	4.8	Fair	
Lewiston, Idaho	29.14	740.1	29.78	756.4	52	11.1	53	W	2	0.9			10ks		Calm	0.16	4.1	Cloudy	
Little Rock, Arkansas	29.59	751.6	29.90	759.4	71	21.7	85	SE	6	2.7			10s		Calm	0	0	Cloudy	
Los Angeles, California	29.54	750.3	29.88	758.9	61	16.1	82	SE	4	1.8			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.45	748.0	29.98	761.5	71	21.7	66	N	4	1.8		0	2s;snc		Calm	0	0	Clear	
Lynchburg, Virginia	29.38	746.2	30.03	762.7	73	22.8	59	W	2	0.9		0	0			0	0	Clear	
Madison, Wisconsin	29.02	737.1	29.98	761.5	59	15.0	88	NW	2	0.9		10cs	0	W		0	0	Cloudy	
Marquette, Michigan	29.31	744.5	30.01	762.2	55	12.8	56	SW	12	5.4		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.24	717 3	29.90	759.4	77	25.0	77	S	10	4.5		2k	0	S		0	0	Fair	
Memphis Tennessee	29.62	752.3	29.94	760.5	73	22.8	72	SE	4	1.8			10s		SE	0	0	Cloudy	
Milwaukee, Wisconsin	29.28	743.7	30.01	762.2	50	10.0	72	N	10	4.5		3c;ck	1s	W	Calm	0	0	Fair	
Mobile, Alabama	30.00	762.0	30.04	763.0	78	25.6	91	Calm	0	0		2c	5s	Calm	W	1.09	27.7	Fair	
Montgomery, Alabama	29.82	757.4	30.04	763.0	73	22.8	92	S	3	1.3			10s		Calm	0.08	2.0	Cloudy	
Morgantown, West Virginia	29.06	738.6	30.02	762.5	68	20.0	70	Calm	0	0		0	0			0	0	Clear	
Mt Washington, N. H.	23.96	608.6	30.32	770.1	49	9.4	85	SW	8	3.6		8c	10s	Calm	SW	0.40	10.2	Fair	
Nashville, Tennessee	29.49	749.0	30.00	762.0	69	20.6	80	NW	2	0.9			10ks		NW	0.02	0.5	Cloudy	
New Haven, Connecticut	29.97	761.2	30.08	764.0	61	16.1	88	NE	15	6.7			10s		NE	0	0	Cloudy	
New London, Connecticut	30.03	762.7	30.08	764.0	60	15.6	77	N	10	4.5			9s		N	0	0	Cloudy	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	80	26.7	78	SW	2	0.9		1c	Sm'e	Calm	Calm	0.52	13.2	Clear	
Newport, Rhode Island	30.04	763.0	30.09	764.3	57	13.9	87	N	12	5.4			10s		Calm	0	0	Cloudy	
New River, North Carolina																			
New York, New York	29.91	759.7	30.08	764.0	66	18.9	54	N	14	6.3		8k	0	NE		0	0	Fair	
Norfolk, Virginia	29.93	760.2	29.98	761.5	76	24.4	77	NE	4	1.8		1c	Haze	Calm	Calm	0.53	13.5	Clear	
North Platte, Nebraska	26.77	680.0	29.20	741.7	62	16.7	91	SE	16	7.2			Fog		SE	0	0	Foggy	
Olympia, Washington Ter.	29.94	760.5	29.98	761.5	48.0	8.9	89	S	4	1.8			10s		W	0.16	4.1	Cloudy	
Omaha, Nebraska	28.66	728.0	29.71	754.6	62	16.7	77	SE	8	3.6		2c	2s	W	Calm	Inap.	Inap.	Fair	
Oswego, New York	29.79	756.7	30.11	764.8	62	16.7	72	SE	6	2.7		5c	2s	Calm	Calm	0	0	Fair	
Pembina, Dakota	28.90	734.0	29.71	754.6	55	12.8	81	S	6	2.7		2c	0	Calm		0	0	Clear	
Pensacola, Florida	30.01	762.2	30.04	763.0	78	25.6	86	SW	5	2.2		4k	5ks	W	W	0.09	2.3	Cloudy	
Philadelphia, Pennsylvania	30.02	762.5	30.07	763.8	65	18.3	63	NE	15	6.7		5cs	Haze	Calm	Calm	0	0	Fair	
Phœnix, Arizona	28.65	727.7	30.35	770.9	79	26.1	27	E	6	2.7		0	0			0	0	Clear	
Pike's Peak, Colorado	17.73	450.3	29.94	760.5	31	— 0.6	38	SW	44	19.7		1cs	0	Calm		0	0	Clear	
Pilot Point, Texas	29.10	739.1	29.91	759.7	76	24.4	86	SE	12	5.4		10k	0	S		0	0	Cloudy	
Pioche, Nevada	23.93	607.8	29.70	754.4	56	13.3	24	NW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.26	743.2	30.04	763.0	65	18.3	73	NW	3	1.3		5c	Haze	N		0	0	Fair	
Port Huron, Michigan	29.40	746.7	30.06	763.5	54	12.2	61	NE	10	4.5		0	0			0	0	Clear	
Portland, Maine	30.14	765.5	30.20	767.1	50	10.0	86	E	11	4.9			10s		Calm	0.66	16.8	Cloudy	
Portland, Oregon	29.99	761.7	30.06	763.5	49.5	9.7	85	SE	5	2.2			10s		W	0.04	1.0	Cloudy	
Portsmouth, North Carolina					74	23.3	86	NW	10	4.5		8k	0	NW		1.34	34.0	Cloudy	
Prescott, Arizona	24.70	627.4	30.06	763.5	67	19.4	13	S	12	5.4		0	0			0	0	Clear	
Punta Rassa, Florida	30.04	763.0	30.06	763.5	81	27.2	78	SE	8	3.6		6c;k	0	WNW		0	0	Fair	
Red Bluff, California	29.60	751.8	29.96	761.0	57.5	14.2	56	NW	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas	29.68	753.9	29.89	759.2	82	27.8	75	SE	15	6.7		5c	2ks	NW	SE	0	0	Fair	
Rochester, New York	29.43	747.5	30.03	762.7	61	16.1	66	SW	3	1.3		5c	0	W		0	0	Fair	
Roseburg, Oregon	29.56	750.8	30.14	765.5	48.5	9.2	89	W	3	1.3			10n		W	0.06	1.5	Light rain	
Sacramento, California	29.85	758.2	29.93	760.2	55	12.8	84	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.39	746.5	29.94	760.5	68	20.0	79	S	6	2.7			10ks		Calm	Inap	Inap.	Cloudy	
St. Paul, Minnesota	29.07	738.4	29.88	758.9	57	13.9	87	E	7	3.1			10s		Calm	0	0	Cloudy	
Salt Lake City, Utah	25.53	648.4	29.86	758.4	58	14.4	42	Calm	0	0		5k	1ks	W	W	Inap.	Inap.	Fair	
San Antonio, Texas	29.21	741.9	29.88	758.9	80	26.7	78	S	8	3.6			8s		S	0	0	Cloudy	
San Diego, California	29.85	758.2	29.92	760.0	60	15.6	88	SE	7	3.1			Fog		SE	0	0	Foggy	
Sandusky, Ohio	29.39	746.5	30.04	763.0	66	18.9	59	S	3	1.3		5c	5ks	W	Calm	0	0	Cloudy	
Sandy Hook, New Jersey	30.03	762.7	30.06	763.5	63	17.2	72	NE	28	12.5			10s		NE	0	0	Cloudy	
San Francisco, California	29.95	760.7	30.01	762.2	52	11.1	86	SW	4	1.8		0	Fog		Calm	0	0	Clear	
Santa Fé, New Mexico	23.31	592.1	29.85	758.2	52	11.1	18	NE	1	0.4		0	1ks		Calm	0	0	Clear	
Savannah, Georgia	29.95	760.7	30.04	763.0	80	26.7	74	S	1	0.4		1cs	Sm'e	Calm	Calm	0.11	2.8	Clear	
Shreveport, Louisiana	29.74	755.4	29.95	760.7	79	26.1	82	SW	3	1.3		0	8s		Calm	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	29.99	761.7	30.03	762.7	78	25.6	82	SW	4	1.8		8k	1ks	SW	Calm	0.35	8.9	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.31	744.5	29.96	761.0	66.5	19.2	74	SE	7	3.1		0	5ks		SW	0.01	0.3	Fair	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	59	15.0	76	NE	6	2.7			10s		NE	0.01	0.3	Cloudy	
Stockton, Texas	26.80	680.7	29.80	756.9	76	24.4	56	S	7	3.1		0	0			0	0	Clear	
Thatcher's Island, Mass	30.14	765.5	30.19	766.8	53	11.7	100	NE	22	9.8			10n		NE	0.50	12.7	Light rain	
Toledo, Ohio	29.37	746.0	30.04	763.0	63	17.2	72	SE	3	1.3		2k	5s	S	SW	0	0	Threatening	
Tucson, Arizona	27.42	696.5	29.97	761.2	77	25.0	18	SE	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.64	752.8	30.12	765.0	52	11.1	54	SW	22	9.8		0	5s		SW	0.03	0.8	Fair	
Uvalde, Texas	28.82	734.6	29.69	754.1	79	26.1	78	SE	4	1.8			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.75	755.6	30.00	762.0	77	25.0	86	S	4	1.8		5cs	0	W		0	0	Fair	
Virginia City, Montana	24.04	610.6	29.52	749.8	37	2.8	100	W	8	3.6			10n		Calm	0.53	13.5	Light rain	
Visalia, California	29.51	749.5	29.88	758.9	60	15.6	71	NW	5	2.2		0	0			0	0	Clear	
Washington, D. C.	29.97	761.2	30.08	764.0	70	21.1	57	NE	8	3.6		5k	0	NW		0	0	Fair	
Wickenburg, Arizona					64	17.8	30	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.93	760.2	30.01	762.2	74	23.3	86	SW	1	0.4		8k	0	Calm		1.50	38.1	Fair	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	43	6.1	67	SW	8	3.6		2ck	0	SW		0	0	Clear	
Wood's Holl, Massachusetts	30.05	763.3	30.09	764.3	56	13.3	94	NE	10	4.5			Fog		NE	0	0	Foggy	
Yankton, Dakota	28.51	724.1	29.76	755.9	58	14.4	94	SE	8	3.6		10k	0	SW		0.14	3.6	Cloudy	
Yuma, Arizona	29.55	750.6	29.69	754.1	68	20.0	51	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.06	560.3			57.2	14.0	71	Calm	0	0		5k				0.13	3.3	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.03	762.7	30.08	764.0	77	25.0	82	Calm	0	0		8ck;cs		Calm		0.65	16.5	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	82	27.8	76	Calm	0	0		8c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.88	758.9	29.96	761.0	81	27.2	83	E	1	0.4		8	8s	SE	E	0	0	Cloudy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.06	763.5	30.06	763.5	78	25.6	86	SE			2		10n	SE		0.500	12.70	Raining	C. J. Hering.
Puerto Perrio, U.S.Col'bia ‖	29.47	748.5	30.02	762.5	78	25.6	89	N			2		10ks			0.21	5.3		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25		ESE				6c	1d	SE	ESE	0 04	1.	Fair	Earl Flint.
Santiago de Cuba, W. I.	30.05	763.3	30.08	764.0	81	27.2	82	Calm	0	0		8cs	0			0	0		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.02	762.5	30.07	763.8	52.0	11.1	83	S	7	3.1		2c	0	S		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft.,or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?)m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	29.96	761.0	79	26.1	86	NW	8	3.6			8n		SE					Cloudy	
§ Navy Yard, Portsmouth, N. H.	30.15	765.8	52	11.1	66	NE	13	5.8			10			0.4	10.			Foggy	
Naval Hospital, Yokohama, Japan	29.69	754.1	72	22.2	58	NE			1	4c	Haze		W	0	0			Clearing	
§ Adams, N. 2° 02′, W. 82° 18′	29.96	761.0	77	25.0	91	S			2		2		S					Fair	
§ Alaska, Callao, Peru *	29.94	760.5	63	17.2	94	NW			4		10		NW			Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.55	750.6	75	23.9	56	N			1		10		Calm	0	0	Smooth		Cloudy	
§ Alliance, N. 41° 30′, W. 57° 15′	30.03	762.7	62	16.7	94	ENE			5		2		N	Light	Light	Smooth	N	Fair	
§ Ashuelot, Nankin, China	29.77	756.1	75	23.9	64	SE			1		0					None		Clear	
§ Colorado, New York, N. Y.	30.07	763.8	65	18.3	84	N	3	1.3			8		NE	0	0			Cloudy	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	30.04	763.0	64	17.8	68	NNE	19	8.5			8		NE					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	29.98	761.5	74	23.3	86	NNW		2.2			2		N	0.44	11.2			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.98	761.5	72	22.2	95	SW	2.4	1.1			0			0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.86	758.4	45	7.2	92	WSW			1		10					Smooth		Cloudy	
§ Kearsarge, N. 38° 43′, W. 73° 18′	30.00	762.0	64	17.8	94	N			4		10					Smooth		Foggy	
§ Lackawana, La Union, San Salvador †	30.07	763.8	80	26.7	87	WSW			1-2		8		WSW					Fair	
§ Marion, Port Stanley, Falkland I'ds	29.56	750.8	37	2.8	100	SW			2		8					Smooth		Drizzling	
§ Michigan, Erie, Pa.	30.00	762.0	66	18.9	74	S			1		8		NW					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y. *	30.05	763.3	63	17.2	83	NE			3-5		10		E					Cloudy	
§ Monocacy, Chefoo, China	29.73	755.1	68	20.0	74	NW			0-1		2		NW					Hazy	
§ New Hampshire, Port Royal, S. C.	30.03	762.7	75	23.9	86	S	9	4.0			8		Calm	0.35	8.9			Fair	
Nipsic, Leghorn, Italy	30.08	764.0	72	22.2	67	W			1		2							D. clouds	
§ Onward, Callao Bay, Peru †	29.97	761.2	64	17.8	83	NNW			4		10		NW			Long	W	Cloudy	
§ Palos, Shanghai, China	29.80	756.9	78	25.6	69	SE			1		2		S;E					Fair	
§ Passaic, Washington, D. C.	30.03	762.7	68	20.0	74	NE			1		5		NE	0	0			Fair	
§ Pensacola, San Francisco, Cal.	29.92	760.0	56	13.3	57	Calm			0		0					Smooth		Blue sky	
§ Portsmouth, N. 34° 32′, W. 51° 50′	30.14	765.5	68	20.0	90	SSW			6		5		SW			Long	NW	Fair	
§ Powhatan, New York, N. Y.	30.06	763.5	65	18.3	73	NNE			3		10		NE					Cloudy	
§ Quinnebaug, Antwerp, Belgium	29.85	758.2	58	14.4	70	WSW			4		8		WSW					Cloudy	
§ Richmond, Nagasaki, Japan	29.83	757.7	70	21.1	90	SW			1		5		Calm	0	0			Fair	
Rio Bravo, Brownsville, Texas †	30.03	762.7	80	26.7	91	SE	3	1.3			5		Calm	0	0			Fair	
§ Saratoga, Gibraltar, Mediterranean	30.18	766.0	69	20.6	75	Calm			0		0			0	0	Smooth		Clear	
§ Shenandoah, Montevideo, Uruguay	29.97	761.2	54	12.2	67	WSW			6		2		Calm			Long	SW	Fair	
§ St. Louis, League Island, Pa.	30.02	762.5	66	18.9	89	NE	10	4.5			2		SW	0	0			Clear	
Swatara, Saigon, Siam †	29.81	757.2	79	26.1	91	W			1		10		W			Smooth		Cloudy	
§ Tennessee, New York, N. Y.	30.08	764.0	70	21.1	53	NNE			2		8		N;E			Smooth		Cloudy	
§ Ticonderoga, N. 34° 17′, E. 133° 28′	29.78	756.4	71	21.7	90	SW			2		8		WNW			Smooth		Cloudy	
§ Trenton, Marseilles, France	30.09	764.3	66	18.9	64	W			2		0			0	0	None		Clear	
§ Vandalia, Newport, Rhode Island	30.09	764.3	56	13.3	94	NNE			5		10		Calm					Misty	
§ Wabash, Boston, Mass.	30.16	766.1	52	11.1	77	NE	7	3.1			10			0.04	1.0			Cloudy	
§ Wachusett, S. 52° 13′, W. 76° 49′	29.99	761.7	43	6.1	92	SW			3		5		WSW			Long	W	Fair	
Wyoming, Villafranca, France	30.06	763.5	68	20.0	65	ESE			1		2		SE			Smooth	SE	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, Halifax, N. S	30.16	766.1	53	11.7		ESE			2		10		ESE					Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, Jr.
S. S. Indiana, R. W. Sargent, N. 50° 28', W. 19° 11'	30.06	763.5	55	12.8	68	NNW			7		7		NNW	Mod'ate	Mod'ate	Mod'ate	NNW	Fair	
S. S. Ohio, Henry Morrison, N. 41° 13', W. 45° 38'	30.19	766.8	70	21.1	90	SW			1		5		SW	1 h'r	1 h'r	Small	SE	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
† S. S. Newborn, W. Metzger, N. 24° 58', W. 112° 40'	29.94	760.5	62	16.7	94	W			2		10		W			Gentle	NW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains, N. 40° 32', W. 72° 22' *	29.83	757.7	64	17.8	78	ENE			3		Haze		NE	0	0	Light	NE	Hazy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 49° 37', W. 6° 49'	29.92	760.0	55	12.8	68	NW			5		2		NW	½ h'r	½ h'r	Mod'ate	NW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
† S. S. Belgic, L. Meyer, N. 37° 59', E. 156° 46'	29.79	756.7	61	16.1	94	E			6		10		E			Heavy	E	Overcast	D. A. Joyce.
† S. S. Gaelic, W. H. Kidley, N. 37° 25', E. 154° 28'	29.81	757.2	69	20.6	90	W			4		10n		SW	Consi	d'ble	Smooth	SW	Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, S. S. Oregon																			J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
† S. S. Ancon, E. Alexander, N. 35° 34', W. 121° 13'	29.97	761.2	51	10.6		NW			7		5		NW			Heavy	NW		
† S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
† S. S. State of California, G. Debney, Portland, Oregon	29.97	761.2	45	7.2		SE			2		5		SW					Light rain	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. † Aneroid. * The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.89	759.2	75	23.9	95	NNW			2		8		N			Mod'ate	SW	Cloudy	F. A. Johnston.
§S. S. Australia																			Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.12	765.0	54	12.2	87	Calm			0		0					Smooth	SW	Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, Panama, Panama.....†	29.99	761.7	78	25.6	91	NW			2		8		NW	0.5	13.	Smooth	S	Cloudy	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 22° 49', E. 116° 53'.....†	29.72	754.9	81	27.2	87	ESE			2		5		SW	0	0			Fair	
§S. S. City of Sidney, H. C. Dearborn, Honolulu, Sandwich Ids..*†	30.00	762.0	73	22.8		ENE			5		5		ENE	0.12	3.0	Smooth		Squally	E. LeSack.
§S. S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, N. 28° 04', W. 116° 18'.....†	29.95	760.7	63	17.2	94	SE			1		10		Calm	0	0	Smooth	NW	Cloudy	
§S. S. Dakota, D. E. Griffiths, Seattle, Washington Ter.†	29.98	761.5	50	10.0	86	Calm			0		5		W					Hazy	D. E. Griffiths.
§S. S. Granada, J. M. Cavarly N. 17° 02', W. 100° 31'.....†	30.02	762.5	80	26.7	81	NW			3		5s		Calm	0	0	Mod'ate	SSE	Fair	
§S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.03	762.7	52	11.1		SW			2		0							Clear	E. Alexander.
§S. S. Zealandia, R. C. Ghest, N. 36° 28', W. 125° 54'.....	30.02	762.5	55	12.8		SW			6		10		SW			Smooth	W	Foggy	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes.																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 41° 34', W. 53° 28'.....†	30.15	765.8	59	15.0		E			5		8		NE			Mod'ate	E	Misty	J. Jones.
S. S. Celtic, B. Glendell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 33° 45', W. 77° 21'.....†	30.06	763.5	77	25.0		SW			1		10		SW	0.25	6.3	Short Rough	S	Gloomy	A. R. Mehaffey.
Schr. Adelle Fuller, J. Jorgensen, Boston, Mass	30.15	765.8	56	13.3	87	NE	14	6.3			Mist								J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. I.†	30.07	763.8	86	30.0		NE			1		10		E	Showers.		Smooth		Cloudy	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 9° 28', W. 13° 40'.....*†	30.18	766.6	76	24.4		SE			4		10		SE			Short	S	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.41	772.4				E			1		10		E	Light	Light			Foggy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 40° 50' W. 72° 00'.....†	30.19	766.8	63	17.2		NE			6		10		NE	0	0	Mod'ate	ENE	Threatening	
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 44° 47', W. 61° 19'.....	30.19	766.8	44	6.7	100	ENE			4		Fog			0	0	Smooth		Dense fog	James S. Garvin.

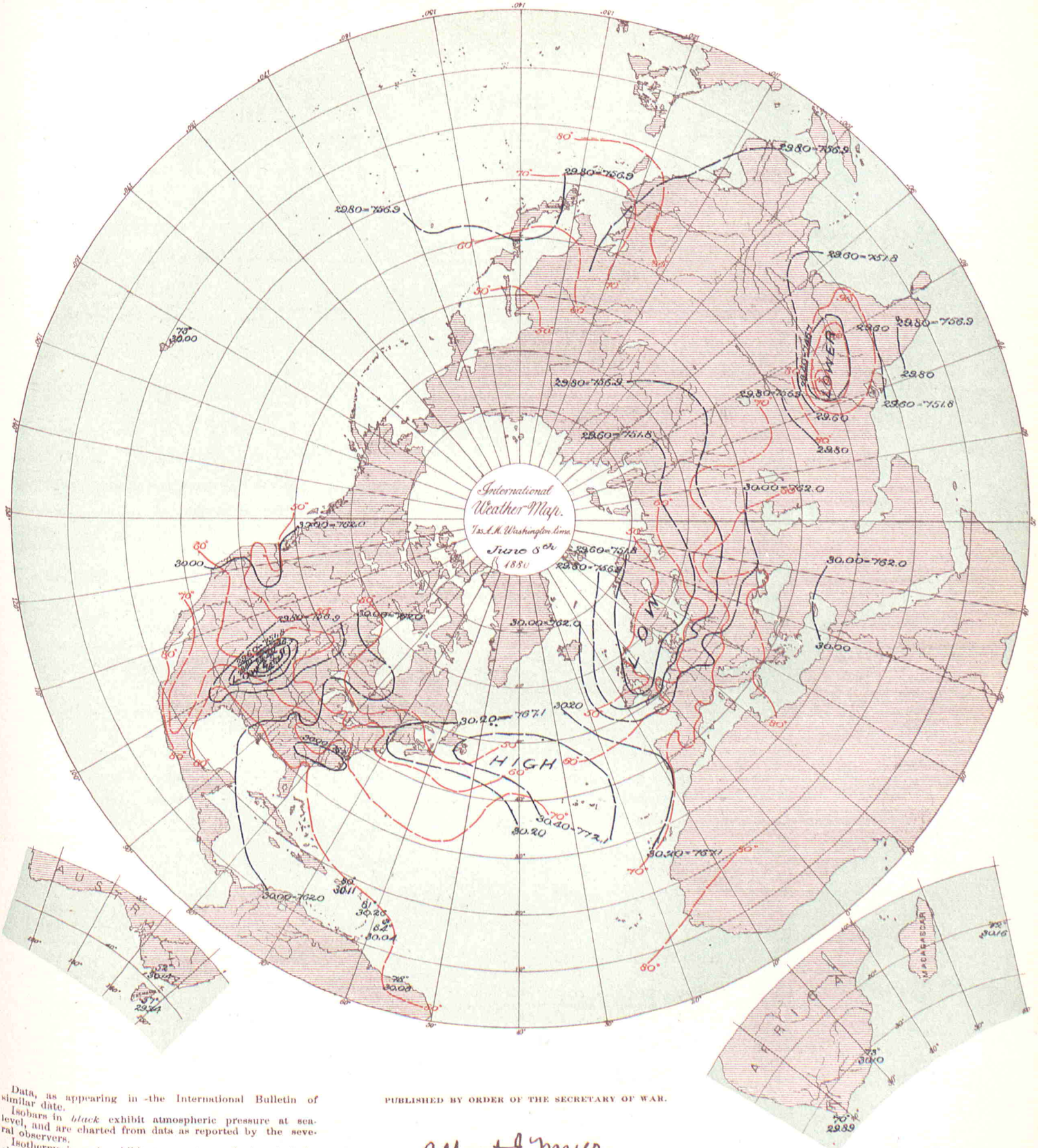
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 9, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			29.95	760.8	72.3	22.4	81	S			1		10			Inap.		Covered	Dr. Ollive.
Nemours			30.03	762.7	80.6	27.0	43	NNE			2		4			Inap.	Inap.	Cloudy	Metge.
Algiers			30.03	762.8	73.9	23.3	73	SE			3		0			0	0	Clear	Nicolas.
La Calle			30.13	765.2															Fonfrède.
Tunis			30.26	768.5															Jacques.
Sfax			30.06	763.5															Gau.
Saida			30.18	766.5	80.2	26.8	16	NW			2		1			0	0	Very fair	Charon.
Tebessa			30.16	766.0	82.8	28.2	22	S			5		3			0	0	Pretty fair	Watrin.
Geriville			30.26	767.1	83.1	28.4	26	SSE			3		0			0	0	Clear	Lonchamp.
Laghouat			30.22	767.5	82.0	27.8	47	E			1		0			0	0	Clear	Herlin.
Biskra																			Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Agram	29.43	747.5	29.96	761.0	72.0	22.2	65	N			2		7			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.22	742.1	29.96	760.9	73.0	22.8	50	SW	7.2	3.2			2			0	0		Dr. Wierzbicki.
Eperies	29.05	737.9	29.89	759.1	76.3	24.6	47	Calm			0		5cs;s			0	0		Julius Mikolik.
Gratz	28.76	730.5	29.97	761.1	70.7	21.5	64	ENE			3		5			0	0		Andreas Rospini.
Hermannstadt	28.52	724.3	29.87	758.8	75.4	24.1	63	NW			2		10			1.067	27.00		Prof. A. Gottschling.
Kremsmünster, Observatory	28.66	728.0	29.96	760.9	69.4	20.8	55	Calm			0		4			0	0		The Staff.
Lemberg	28.93	734.7	29.87	758.6	74.7	23.7	55	SE			2		5			0	0		Dr. T. Stanecki.
Pola	29.95	760.7	30.06	763.5	74.3	23.5	70	WSW			1		0			0	0		I.R. Hydrographic Office.
Szathmar	29.50	749.2	29.94	760.5	76.6	24.8	59	E			2		4			0	0		Pet. Pancsics, S. J.
Szegedin	29.65	753.2	29.93	760.1	70.5	21.4	74	Calm			0		8			0	0		Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	74.1	23.4	78	Calm			0		0			0	0		P. Busin.
Vienna	29.30	744.2	30.05	763.2	74.1	23.4	45	WNW			1		6			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.69	754.2	29.89	759.3	54.7	12.6	85	S			1		10		S	0.016	0.40	Raining	Royal Observatory.
Furnes	29.87	758.6	29.89	759.2	55.4	13.0	76	SSW			2		10			0.322	8.2	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.64	752.8	29.74	755.4	48.1	8.9		SSE	6	2.7			9			0.300	7.62	Raining	W. Boswell.
Ardrossan	29.69	754.1	29.71	754.6	56	13.3		NW			2		3					Blue sky	G. Carrick.
Armagh, (Observatory)	29.52	749.8	29.75	755.6	53.5	11.9		S	1	0.4			6					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.74	755.4	52.2	11.2		SW	7	3.1			9					Overcast	John Hartnup.
Bolton (Sharples)	29.18	741.1	29.69	754.1	53.3	11.8		SW	2	0.9			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.31	744.5	29.71	754.6	56.2	13.4	55	SE			1		10			0.03	0.8	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	81.5	27.5		NE			3		8					Overcast	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.67	753.6	29.76	755.9	54.6	12.2		S			1		10					Overcast	H. Todd.
Cardington			29.76	755.9	58.6	14.4		SW			1		10					Overcast	John McLaren.
Chatham (School M. E.)	29.69	754.1	29.82	757.4	51.1	10.6		SW			1		10n					Raining	Lance Crp'l Hocker, R.E.
Donaghadee	29.72	754.9	29.76	755.9	52	11.1		NW			2		8					Overcast	J. Mac Gowan.
Dover	29.79	756.7	29.82	757.4	57	13.9		SSW			3		10					Raining	J. Costello.
Falmouth (Observatory)	29.56	750.8	29.78	756.4	56.4	13.6		S			2		8					Overcast	The Staff.
Fort Napier, Natal	27.69	703.3	29.90	759.4	74.6	23.3		NE			1		2					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.77	756.1	30.00	762.0	86	30.0		SE			1		8					D. clouds	
Galway (Queen's College)			29.70	754.4	55	12.8		Calm			0		5					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.12	765.0	30.18	766.6	75.4	24.1		SW			4		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.50	749.3	29.70	754.4	54.9	12.7		WNW			1		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.79	756.7	29.80	756.9	54	12.2		SSE			4		6					Showery	G. T. Watson.
Greenwich (Royal Obs'y)	29.03	752.6	29.80	756.9	55.2	12.9		S			1		10					Raining	The Staff, for G.B.Airy.
Guernsey	29.56	750.8	29.78	756.4	51.5	10.8		SSW			1		8					Raining	Dr. S.E.Hoskins, F.R.S.
Helston	29.97	761.2	30.09	764.3	60	15.6		S			6	2c				0	0	Fine	M. P. Moyle.
Holyhead	29.71	754.6	29.75	755.6	54	12.2		ENE			2		3					D. clouds	John Tilston.
Jersey	29.53	750.0	29.83	757.7	51.0	10.6		N			1		10					Raining	J. Fisher.
Kew (Observatory)	29.77	756.1	29.80	756.9	52.0	11.1		W	3	1.3			10					Raining	The Met'g'l Office.
Leicester (Museum)	29.50	749.3	29.74	755.4	57.5	14.2		SW			1		10					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.03	762.7	30.10	764.5	74.2	23.4		NW			2		0					Blue sky	A. King.
Nairn	29.62	752.3	29.71	754.6	58	14.4		NW			1		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.08	764.0	81.8	27.7		SE			1		10					Overcast	C. S. Duncombe.
Nottingham (Observatory)	29.56	750.8	29.75	755.6	60.8	16.0		S			3		10cks;	ks;k]	S	0.099	2.52	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.22	742.2	29.74	755.4	53.8	12.1		S			5		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.55	750.6	29.80	756.9	54.2	12.3		SSE			3		10					Threatening	The Staff, for E. J. Stone, Esq.
Plymouth	29.71	754.6	29.78	756.4	56.1	13.4		S			3		6					D. clouds	John Merrifield.
*Roche's Point	29.69	754.1	29.80	756.9	61	16.1		SW			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.59	751.6	29.75	755.6	53	11.7		SW			1		0					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.72	754.9	50.1	10.1		NNW	14	6.3			10					Overcast	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.85	758.2	29.91	759.7	82.6	27.8		SW			1		6					D. clouds	Serg't W. H. Lyne.
Sheffield	29.48	748.8	29.76	755.9	57.8	14.3		SW			1		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.70	754.4	29.73	755.1	56.7	13.7	64	W			3		0			0	0	Blue sky	Rev. F. Radford, A. M.
Stonyhurst (Observatory)			29.74	755.4	54.0	12.2		NW	4	1.8			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.57	751.1	29.79	756.7	55.3	12.9		S			1		10					Overcast	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.83	757.7	29.85	758.2	61	16.1		W			6		6					D. clouds	W. Newcombe.
Valencia (Observatory)	29.73	755.1	29.75	755.6	53.6	12.0		NW	10	4.5			7					Squally	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.99	761.7	30.03	762.7	64.5	18.1	89	S	7.1	3.2		10	10			0.090	2.29	Raining	The Staff, for D. Gill.
Hobart Town, Tasmania			29.62	752.3	59.0	15.0	88	W			3		7k			0.02	0.5		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.73	755.1	55.2	12.9		E			1		6k	W		0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.92	760.0	30.11	764.9	73.1	22.8	55	SSE	13.5	6.0		0	4		ESE	0	0	Fine	C. Meldrum.
Melbourne (Observatory)	30.08	764.0	30.17	766.3	55.8	13.2	76	NNW	3	1.3			8			0.01	0.3	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.78	756.4	49	9.4		NW			3	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.76	755.9				NE			4	4	6	NE		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Sommewyne				Capt. Jas. Buchan.
Ship British Commodore, N. 46° 20′, W. 27° 35′	5	NNW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, N. 29° 47′, W. 16° 59′			Showery	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	66.6	19.2	93	NE			2	8c				Inap.	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.75	755.6	29.80	756.8	56.3	13.5	56	W			4		8						
Faröe	29.79	756.7	29.81	757.2	54.9	12.7	71	W			6		7						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.75	755.6	29.79	756.7	48.9	9.4	74	S			2		8						
Thorshavn (Faröe)	29.79	756.7	29.83	757.6	41.5	5.3	82	NE			5		8						
Vestervig	29.61	752.2	29.71	754.6	50.4	10.2	82	SW			6		9					Raining	

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.43	747.6	29.98	761.6	66.2	19	67	SW			1		8kn		SW	0.39	10.	Very cloudy	Collignon, Director.
Amiens, Normal School	29.75	755.7	29.86	758.4	67.3	19.6	74	SSE			1		5		NE	0.134	3.4	Cloudy	Vaillant, Director.
Arras, Engineer School	29.54	750.4	29.80	757.0	52.5	11.4	93	E			2		10kn	E				Rainy	Klein, Commandant.
Avignon, Normal School	29.97	761.3	30.05	763.3	72.3	22.4	64	SE			2		8		S	0	0	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.37	745.9	29.90	759.5	69.6	20.9	41	SW			1		5kn		SW	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.54	750.3	29.80	756.8	63.2	19.0	68	S			2		10		SW	0.010	0.25	Covered	Frère Eugene Marie.
Besançon, Normal School	29.10	739.0	29.96	761.0	68.5	20.3	61	SSW			1		10		SW	0	0	Covered	A. Carré, Director.
Bordeaux	29.69	754.1	29.89	759.1	66.9	19.4	67	N			1		10		SW	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.15	740.3	30.07	763.8	64.4	18	68	S			2	10c		S	S	0	0	Covered	Marlot, Director.
Bourges, Normal School	29.39	746.5	29.92	760.0	72.0	22.2	82	SE			4	c		SE		0.327	8.3		M. Gence, Director.
Brest, Naval Observatory	29.60	751.9	29.85	758.1	56.8	13.8	86	WSW			1		10		W	0.246	6.25		Ch. de Kermaree, Dir
Caen, Normal School	29.69	754.2	29.77	756.1	61.0	16.1	77	SW			1		10		SSW	0.087	2.2	Raining	M. Bletrix, Director.
Carcassonne, N. School	29.49	749.1	29.89	759.2	74.5	23.6	48	E			2		2		E	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch	29.70	754.4	30.01	762.3	66.9	19.4	44	S			2		5		S	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.28	743.6	29.83	757.7	65.3	18.5	69	SW			2		8		E	0.374	9.5		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.55	725.2	29.86	758.4	70.5	21.4	50	S			1		5		SW	0	0		Alluard, Director.
Commercy, Normal School	29.08	738.7	29.91	759.8	66.6	19.2	54	SSW			3		kn	SSW	SSW	0.130	3.3		Dr. Coullet, Director.
Commune de Gréasque*	29.00	736.6	30.14	765.6	69.1	20.6	59	S			3		8		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.24	742.7	29.99	761.8	64.8	18.2	72	NW			2		kn		NW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch	29.71	754.5	29.91	759.8	65.5	18.6	63	SSW			1		5		SSW	0.035	0.9	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.55	750.6	29.85	758 2	64.8	18.2	94	WSW			4		8		SSW	0.055	1.4	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. Scho	29.09	738.9	29.98	761.4	61.7	16.5	77	S			4		10		S			Raining	M. Cadoret, Director
Lorient, Naval Observatory	29.75	755.7	29.85	758.2	60.4	15.8	71	W			2		10		W	0.213	5.40	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.37	746.0	29.97	761.3	68.7	20.4	62	S			3		cn		SW	0	0		Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.82	757.4	30.09	764.2	70.9	21.6	67	SSW			1		6		S	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.90	734.1	29.92	759.9	66.9	19.4	51	SW			1		k		W	0	0		Barbier, Director.
Mont-Louis	24.85	631.2	30.09	764.2	57.2	14.0	65	SW	16.8	7.5			8		N	0.063	1.6		M. Cave, for Dr. Fines.
Nice	30.07	763.8	30.11	764.7	71.2	21.8	78	S			1			S	S	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.84	757.8	30.04	762.9	68.5	20.3	69	S			4		10		S	0	0	Covered	M. Boyer, Director.
Perpignan	29.82	757.5	29.93	760.1	70.2	21.2	75	E	11.2	5.0			4	SW		0.039	1.0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.52	572.1			46.4	8.0		SW					10		SW	0.650	16.5	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.95	735.3	30.00	761.9	64.4	18	69	S			1		10	S	S	0	0	Covered	M. Tallieu
Puy de Dome (Summit) Ob	25.13	638.3			51.8	11.0	92	S			2		5		WSW	0	0		Alluard, Director.
Rochefort, Naval Obs'y	29.91	759.7	29.94	760.5	65.7	18.7	65	WSW			2		5	WSW	WSW	0	0	½ covered	Lt. E. Devante, Director
Rouen, Normal School	29.71	754.6	29.80	756.8	65.7	18.7	56	SSW			2		8		SW	0.031	0.8	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.74	755.5	29.77	756.2	54.0	12.2	96	NW			4		8	NW	NW			Raining	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.71	754.6	29.87	758.8	68.2	20.1	53	SSW			3		5	WSW	SSW	0.102	2.6	Cloudy	E. Renou, Director.
Tarbes, Normal School	29.03	737.3	30.10	764.6	59.0	15	58	NE			1							Threatening	T. Huguet, Director
Toulouse, Observatory	29.21	741.9	29.93	760.2	72.7	22.6	49	SSE			4		5			0.055	1.4	Cloudy	B. Bailland, Dir.
Tours	29.68	753.8	29.87	758.8	69.8	21.0	48	SSW			3		8		WSW	0.106	2.7	¾ covered	M. de Tastes.
Versailles, Observatory	29.37	746.0	29.87	758.6	66.6	19.2	51	SW			4					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.37	745.9	30.06	763.4	70.2	21.2	61	SE			3		5		SE	0.04	1.	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.26	768.5	30.28	769.2	82.4	28										0	0		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.59	751.6			68.4	20.2	53	SSW			3		5		SW	0.035	1.4		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.79	756.7	29.82	757.4	67.3	19.6	85	SSE	4.5	2.0		2c				0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.14	740.1	30.00	762.0	70.3	21.3	51	S			4		4k	W		0	0		Prof. Dr. Hoh.
Berlin	29.76	755.9	29.93	760.2	65.8	18.8	34	SW			4		6			0.024	0.6		Prof. Dr. Arndt.
Breslau	29.47	748.4	30.00	761.9	70.2	21.2	50	WSW			2		6			0	0		Royal University Obs'y
Carlsruhe	29.52	749.8	29.93	760.3	70.2	21.2	60	W			1		9	SW		0	0		Albert Senz.
Cassel	29.32	744.6	29.92	760.0	67.3	19.6	51	W			4		5	SW		0.025	0.63		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.66	753.3	30.02	762.5	68.5	20.3	40	S			1		7			0.039	1.0		Physical Society.
Friedrichshafen	28.57	725.6	29.96	761.0	68.0	20.0	55	SSW			3		8	SW		0.102	2.6		Chief Telegrapher Wilhelm.
Hamburg	29.85	758.2	29.92	760.0	58.6	14.8	72	WSW			3		3			0.126	3.2		Dr. Reinhold Kleeman.
Kiel	29.85	758.1	29.86	758.5	58.6	14.8	55	W			4		6			0.098	2.48		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.78	756.5	29.87	758.6	63.3	17.4	58	W			5		8	SW		0.004	0.1		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.53	750.1	29.94	760.5	66.9	19.4	58	WSW			3		6	W		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.73	755.1	29.96	760.9	66.0	18.9	40	SW			4		3ks	SW		0.008	0.2		Dr. Assmann.
Memel	29.79	756.6	29.84	757.8	56.1	13.4	80	W			4		5cs						Reinbrecht & Issermann.
Munich	28.21	716.4	30.07	763.8	66.0	18.9	48	Calm			0		4	SE		0	0		Dr. C. Lang.
Neufahrwasser	29.87	758.7	29.89	759.1	66.9	19.4	32	WSW			4		4			0.043	1.1		A. Lothes.
Neustadt (Palatinate)	29.42	747.2	29.94	760.5	70.7	21.5	39	SW			1		7	W		0	0		Reallehrer Dicknether.
Posen	29.65	753.0	29.93	760.1	70.3	21.3	40	W			4		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.43	747.6	29.96	761.0	73.2	22.9	48	SSW			3-4		6	SSW		0	0		Imp. University Observatory.
Stuttgart	29.01	736.9	29.87	758.8	70.7	21.5	42	N					4	W		0.016	0.4		Prof. Dr. Schoder.
Thorn	29.73	755.2	29.92	760.0	68.5	20.3	47	W			3		4			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.50	724.0	30.08	764.1	67.1	19.5	47	W	1.8	0.8			7k		W	0	0		Reallehrer J. Hopfner.
Wustrow	29.89	759.2	29.92	759.9	57.0	13.9	67	W			5		3s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.61	752.1	29.98	761.5	88.2	31.2		SW			1.5		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.46	748.3	29.51	749.6	87.0	30.6	84	SSW	30.1	13.4			6	W		0	0		D. clouds
Deesa	29.03	737.4	29.49	749.0	97.0	36.1	36	SW	22.9	10.2			5	SSW		0	0		D. clouds
Bombay	29.68	754.0	29.72	754.9	86.6	30.3	74	WSW	20.0	8.9			4		WSW	0.15	3.8		D. clouds
Poona (Yarrowda)	27.87	707.8	29.70	754.5	81.5	27.5	56	WSW	27.0	12.1			1		W	0	0		D. clouds
Belgaum	27.24	691.8	29.77	756.2	75.2	24.0	72	WSW	11.0	4.9			5	E	SW	0.07	1.8		D. clouds
Lahore	28.62	726.9	29.31	744.4	110.9	43.8	14	W	2.1	0.9			6			0	0		D. clouds
Roorkee	28.43	722.2	29.27	743.4	106.9	41.6	16	W	6.0	2.7						0	0		Very sultry.
Agra	28.84	732.6	29.37	746.1	105.6	40.9	25	NW	7.3	3.3			8		NW	0	0		
Nagpur	28.48	723.4	29.48	748.7	100.1	37.8	25	W	5.4	2.4			9		W	0	0		D. clouds
Jubbulpore	28.20	716.3	29.53	750.1	88.0	31.1	54	Calm	5.3	2.4			10			0.25	6.4		Raining
Lucknow	29.02	737.0	29.38	746.1	100.9	38.3	50	NW	2.7	1.2						0	0		Blue sky
Allahabad	29.08	738.6	29.37	746.0	104.6	40.3	28	NW	4.0	1.8			10		NW	0	0		Overcast
Patna	29.27	743.3	29.44	747.8	93.5	34.2	57	E	3.1	1.4			10	E	E	0	0		Overcast
Hazaribagh	27.52	698.9	29.50	749.2	80.3	26.8	69	ESE	13.6	6.1			10						Thunder-storm.
Cuttack	29.47	748.4	29.55	750.5	87.1	30.6	67	Calm	1.0	0.4			4			0	0		D. clouds
Calcutta (Alipore)	29.52	749.9	29.55	750.4	84.6	29.2	88	S	2.0	0.9			10	SW		0.23	5.8		Overcast
Goalpara	29.14	740.2	29.55	750.5	78.8	26.0	91	Calm	4.7	2.1			0			3.13	79.5		Blue sky
Chittagong	29.47	748.5	29.56	750.7	84.5	29.2	84	SW	4.3	1.9			2			0	0		
Sibsagar	29.24	742.8	29.57	751.2	83.5	28.6	83	SE	2.0	0.9			10	W	W	0.10	2.5		D. clouds

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.63	752.7	30.04	762.9	74.1	23.4	58	SW	3.8	1.7			6			0	0		Prof. Giovanni Clodig.
Milan	29.51	749.6	30.01	762.3	75.4	24.1	53	SSE	8.1	3.6			7	SW		0	0		Prof. Schiaparelli.
Padua	29.93	760.3	30.04	763.1	75.6	24.2	49	NNE	9.4	4.2			4	SW		0	0		Prof. Dott. Lorenzoni
Moncalieri	29.10	739.1	29.99	761.8	72.8	22.4	60	E	9.4	4.2			6	SW		0	0		Prof. P. F. Denza.
Genoa	29.95	760.8	30.15	765.7	66.2	19.0	73	S	7.4	3.3			10	SE		0.063	1.6		Prof. G. M. Garibaldi.
Mondovi	28.12	714.3	30.00	761.9	69.1	20.6	59	E			4		3	W		0	0		Prof. D. C. Bruno.
Pesaro	30.01	762.2	30.06	763.4	72.9	22.7	59	N	9.4	4.2			2	W		0	0		Prof. Luigi Guidi.
Florence	29.87	758.7	30.13	765.2	71.6	22.0	59	SW			2		10	W		0	0		Cav. F. Meucci.
Leghorn	30.10	764.4	30.18	766.5	68.7	20.4	69	W	9.8	4.4			3			0	0		Prof. P. Monte.
Rome	29.97	761.3	30.15	765.7	75.7	24.3	67	SW	6.9	3.1			6			0	0		Prof. P. S. Ferrari.
Lecce	29.84	757.9	30.09	764.2	77.9	25.5	27	NW	6.3	2.8			0			0	0		Prof. C. De Giorgi.
Cosenza	29.24	742.6	30.09	764.3	80.6	27.0	65	NW	0	0			2			0	0		Prof. D. Conti.
Cagliari	29.91	759.8	30.11	764.7	72.1	22.3	56	S			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.94	760.4	30.19	766.7	71.6	22.0	55	NE	3.8	1.7			0			0	0		Prof. G. Cincciatore.
Syracuse	30.05	763.3	30.19	764.4	79.9	26.6	63	E	2.5	1.1			3	SW		0	0		Prof. V.G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.63	752.6	30.14	765.6	69.8	21.0	69	WSW	1.3	0.6			8			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.1	18.9	85	WSW	0.8	0.3			1cs			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.62	752.3	29.82	757.4	64.4	18.0	92	SW	0.2	0.1			0			0	0	Light fog	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.70	754.4	29.77	756.1	66.2	19.0	91	S	4.4	2.0			5cs			0	0	Fair	The Staff.
Wakayama	29.73	755.1	29.78	756.4	66.9	19.4	90	S	0.1	0.04			10s			0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.03	762.7	59.0	15.0	67	NW			2		9ks		NE	0.19	4.8	Very cloudy	Prof. L. Perez.
Guanaxuato	23.66	601.0			61.7	16.5	81	Calm	0	0		10n	2nk	Calm	NE	0.11	2.9	Covered	Vicente Fernandez.
Leon	24.39	619.5	29.99	761.8	64.0	18.1	90	W			2	8k	0	S		0.79	20.0	Cloudy	Prof. M. Leal.
Mazatlan	29.70	754.3	29.96	760.9	78.2	25.7	86	Calm			0	8k	0	SE		0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.05	585.4	29.93	760.3	60.4	15.8	75	Calm	0	0			10k			0.06	1.5	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.5	29.82	757.4	63.3	17.4	86	SW			1	6k	0	NW		0.74	16.3	Fair	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.44	595.4	30.12	765.0	59.0	15.0	46	Calm	0	0		2ck	0	E		0.25	6.3	Clear	Prof. P. Spina.
San Luis Potosi	24.15	613.5	30.02	762.5	64.4	18.0	46	E			1	2	0	W		0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.82	757.4	29.83	757.7	80.2	26.8	88	S			2	4	2	E	S	0	0	½ clouded	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.58	573.4	30.11	764.8	60.4	15.8	78	Calm			0	2c	0	NE		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.4 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.89	759.1	29.89	759.1	59.0	15.0		S			4					0	0		
Groningen	29.83	757.7	29.89	759.1	58.1	14.5		WSW			4					0.016	0.4		
Helder	29.87	758.6	29.87	758.6	55.8	13.2		SW			4					0.268	6.8		
Hellevoetsluis	29.87	758.8	29.87	758.8	61.5	16.4	61	S			3					0	0		
Utrecht	29.85	758.2	29.90	759.4	62.1	16.7	53	SSW			3		8			0.303	7.7	Very cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.50	749.4	29.56	750.8	52.9	11.6	67	NNW	12.8	5.7			2			0	0		
Brönø	29.50	749.4	29.54	750.4	46.8	8.2	73	SW	9	4			9			0	0		
Christiania	29.35	745.4	29.49	749.0	56.3	13.5	67	WSW	13	6			10					Thunder storm.	
Tromsö	29.57	751.1	29.63	752.5	46.8	8.2	61	ENE	4	2			4			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.11	764.9	30.32	770.2	65.5	18.6	88	WNW			4		5			0.276	7.0		Dr. J. A. Sampaio.
Campo Major	28.99	736.4	29.97	761.1	71.6	22.0	38	W	8.7	3.9			2			"	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.14	765.6	30.23	767.8	66.0	18.9	66	SW	4.9	2.2			10			"	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.73	755.2	30.09	764.2	65.1	18.4	55	WNW	13.7	6.1			6			"	0		The Staff.
Ponta Delgada (Azores)	30.21	767.3	30.28	769.1	69.8	21.0	73	WNW	13.0	5.8			3			0.295	7.5		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.95	760.6	74.3	23.5		W			1		2		W	1	W		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.08	763.9	64.4	18.0		NW			2		1		NW	*1	W		Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.91	759.8	82.6	28.1		NE			1		4		NE				D. clouds	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.56	750.8	29.58	751.3	60.8	16.0	61	WNW	9	4			8ks						Capt. Sseliwerstow.
Astrakhan	30.20	767.1	30.12	765.0	84.7	29.3	29	Calm	0	0			0						Capt. Wisganow.
Barnaul	29.27	743.4	29.75	755.6	63.5	17.5	61	Calm	0	0			10					Light clouds	Meteorological Obs.
Dorpat	29.60	751.7	29.83	757.7	60.3	15.7	56	SSW	7	3			10n						Prof. Dr. Weihrauch.
Ekaterinburg	28.82	732.1	29.73	755.2	77.2	25.1	41	SW	9	4			7k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.58	751.2	29.84	757.8	67.5	19.7	41	W	18	8			4k						Physical Cabinet.
Kertch	30.11	764.9	30.13	765.4	75.6	24.2	73	N	7	3			4						Lagorio.
Kieff	29.41	747.0	30.02	762.6	70.2	21.2	60	SE	4	2			10ks;n					Light rain	Physical Cabinet.
Krotkowo*	29.58	751.2	30.02	762.6	75.2	24.0	29	NW	7	3			6						Cand. Fatjanow.
Lugan	29.85	758.1	30.04	763.1	81.5	27.5	30	N	9	4			4						Meteorological Obs.
Moscow	29.48	748.7	30.01	762.3	63.0	17.2	45	W	10.1	4.5			3ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	30.02	762.6	30.10	764.4	81.5	27.7	46	S	9	4			10cs;n						Kurdakof.
Nikolaievsk, on the Amoor	29.81	757.1	29.89	759.3	47.7	8.7	84	SE	18	8		1c							
Nukuss																			
Orenburg																			
Pekin (China)	29.68	753.9	29.82	757.5	74.7	23.7	40	SE	4	2			3ks						Physical Observatory.
St. Petersburg	29.80	757.0	29.82	757.4	55.0	12.8	72	NW	9	4			2k;ks						Central Physical Obs.
Tashkend	28.35	720.0	29.83	757.6	81.7	27.6	55	Calm	0	0			0						Teich, A. M.
Tiflis	28.74	729.0	30.06	763.5	78.1	25.6	46	E	4	2			9cs						Physical Observatory.
Vladivostock																			
Warsaw	29.51	749.5	29.91	759.8	71.6	22.0	42	W	13	6			2k						Astronomical Obs.
Wilna	29.48	748.9	29.89	759.2	69.6	20.9	52	SSW	16	7			3						Astronomical Obs.
Yeniseisk	29.61	752.2	29.89	759.2	66.9	19.4	39	NNE	2	1			6						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.89	759.2	30.03	762.8	72.0	22.2	60	SE	3.1	1.4			2			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.89	759.1	29.94	760.5	71.1	21.7	53	NW	2.2	0.97		2	3	NW		0	0	Cloudy	Prof. Manuel de Naveras.
Burgos, Met. Obs'y	26.98	685.2			73.8	23.2	36	S	16.6	7.43			3			0	0	Light clouds	Domingo Martin y Perez.
Madrid, Royal Observatory	27.74	704.5	29.88	758.9	75.0	23.9	37	SW	26.8	12.00		1	9			0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.82	757.5	29.97	761.2	82.8	28.2	57	ENE	2.1	0.94		5	5	NE		Inap.	Inap.	Covered	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.04	737.7	29.93	760.1	62.6	17.0	68	SW	15.0	6.7			9			0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.0	30.07	763.7	77.3	25.2	88	Calm	0	0		5ck	6s;k	WSW	SW	1.539	39.1	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.84	758.0	29.89	759.3	86.0	30.0	73	SW	10.3	4.7			3kn		W	0.12	2.1	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.95	760.8	30.05	763.2	71.6	22.0	63	WSW	6.6	3.0		0	1		WSW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.04	763.0	30.13	765.3	79.9	26.6	85	E	4.3	1.90		6kn	7kn	E	E	0	0	Cloudy	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.65	753.2	29.69	754.2	47.5	8.6		SW			2		0			0.236	6.0		
Umea	29.57	751.0	29.62	752.3	48.9	9.4	82	S			2		9			0	0		
Hernosand	29.54	750.4	29.60	751.7	51.8	11.0	80	E.			4		5			0	0		
Stockholm	29.39	746.5	29.57	751.0	52.2	11.2	78	SSW			4		10			0	0		
Wisby	29.57	751.0	29.63	752.5	55.4	13.0	75	SW			6		3			0.205	5.2		
Sub-Series.																			
Upsala	29.44	747.7	29.52	749.9	53.6	12.0	67	SSE	10.3	4.6			10			0.228	5.80		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pählson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 35° 21′, W. 16° 03′				D. clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.60	726.3	30.00	761.9	62.2	16.8	73	SSW			4		10					Raining	The Observatory.
Zurich	28.35	720.1	29.93	760.2	72.7	22.6	52	NW			1		5			0.039	1.0	Lightly cl'dy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.1 mm.; Thermometer, —3.1 Cent. Relative Humidity, +17 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.97	761.1	84.9	29.4	59	ENE	6	2.5			8		WSW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.13	765.4	77.4	25.2		SW			1		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.82	757.4	84.2	29.0	47	NE			1		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					56.0	13.3		Calm	0	0			10n			0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	30.22	767.6	30.28	769.1	57.7	14.3	84	NE	2	0.9			10ks			0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	30.21	767.3	30.25	768.3	52.6	11.4	91	SW	4	1.8		0	1s			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.91	759.7	30.10	764.5	64.2	17.9	72	S			1	0	2s			0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	30.10	764.5	30.27	768.8	54.7	12.6	94	E			1		10s			0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	30.20	767.1	30.22	767.6	49.1	9.5	89	E	6	2.7		5ck	1s	S		0	0	Fair	J. McWilliams.
Fredericton, N. B.	30.20	767.1	30.27	768.8	62.1	16.7	78	SE	1	0.4			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.81	731.8	29.60	751.8	63.5	17.5	75	SW	11	4.9		5k	5ks	SW		0.580	14.73	Cloudy	James Stewart.
Granton, Ontario	28.98	736.1	30.06	763.5	62.0	16.7	72	E			1	2cs	0			0	0	Clear	James Grant.
Halifax, N. S.	30.14	765.5	30.27	768.8	49.0	9.4	94	SE	2	0.9			Fog			0	0	Foggy	A. Allison.
Hamilton, Ontario	29.74	755.4	30.12	765.0	57.5	14.2	83	NE			1		10s			0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.71	754.6	30.04	763.0	59.7	15.4	67	NE	3	1.3		0	0			0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	30.22	767.6	30.26	768.6	49.1	9.5	93	E	4	1.8			Fog			0.10	2.5	Foggy	C. H. Rigby.
Montreal, Quebec	29.96	761.0	30.16	766.1	58.8	14.9	84	S	6	2.7			10ks			0.05	1.3	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	30.07	763.8	30.10	764.5	53.5	11.9	72	SW			1	2k	3n			0.13	3.3	Fair	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.44	747.8	30.12	765.0	61.0	16.1	61	E	8	3.6		0	0			0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.42	747.3	30.15	765.8	66.2	19.0	59	E			1	0	0			0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.41	747.0	30.09	764.3	60.1	15.6	88	NE	3	1.3		0	0			0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.44	747.8	30.06	763.5	64.0	17.8	74	E	5	2.2		5ck	0	W		0	0	Fair	M. Payne.
Quebec, Quebec	29.91	759.7	30.23	767.8	58.0	14.4	82	E			1	0	4s			0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.71	754.6	30.18	766.6	48.5	9.2	85	Calm	0	0		6ck	0	NW		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.99	761.7	30.16	766.1	60.0	15.6	76	S	8	3.6		9ck	0			0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.36	745.7	30.06	763.5	61.2	16.2	69	SE	11	4.9		1cs	0			0	0	Clear	K. Stewart.
Stratford, Ontario	28.80	731.5	30.06	763.5	57.9	14.4	84	SE	5	2.2		1cs	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	30.23	767.8	30.27	768.8	47.8	8.8	96	N	1	0.4			10n			0.01	0.3	Foggy	T. C. Hill, C. E.
Toronto, Ontario	29.77	756.1	30.14	765.5	61.0	16.1	60	NE	12	5.4		2cs	0	NW		0	0	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.03	737.3	30.06	763.5	63.6	17.6	76	E	10	4.5		5ck	0	W		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	30.15	765.8	30.22	767.6	61.6	16.4	65	SE	1	0.4		4c	0	W		0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	30.07	763.8	30.32	770.1	43	6.1	100	NE					Fog			0.45	11.4	Rain & fog	John Delany.
St. Pierre, N. F., l'Hôpital Maritime.			30.12	765.0	53.6	12.0		N			3					0.24	6.1		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.13	765.3	30.21	767.3	64	17.8	68	S	4	1.8		10k	0	NE		0	0	Cloudy	
Alpena, Michigan	29.38	746.2	30.02	762.5	54	12.2	87	SE	8	3.6		5c	0	Calm		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.01	762.2	78	25.6	61	NE	4	1.8		8c	Haze	Calm		0	0	Fair	
Atlantic City, New Jersey	30.16	766.1	30.17	766.3	59	15.0	94	NE	18	8.0			10s		NE	0	0	Cloudy	
Augusta, Georgia	29.91	759.7	30.11	764.8	77	25.0	77	NW			1	5cs	0	NW		0	0	Fair	
Baltimore, Maryland	30.14	765.5	30.19	766.8	65	18.3	78	NE	4	1.8			10s		Calm	0	0	Cloudy	
Barnegat, New Jersey	30.15	765.8	30.18	766.6	58	14.4	94	NE	20	8.9			10s		NE	0.03	0.8	Cloudy	
Bismarck, Dakota	27.82	706.6	29.67	753.6	55	12.8	74	SW	10	4.5		5c	0	SW		0.13	3.3	Fair	
Boerne, Texas	28.40	721.3	29.65	753.1	74	23.3	90	S	8	3.6		5k	8ks	Calm	S	0	0	Cloudy	
Boise City, Idaho	27.16	689.8	30.12	765.0	46	7.8	69	NW	6	2.7		2k	5s	NW	NW	Inap.	Inap.	Fair	
Boston, Massachusetts	30.08	764.0	30.24	768.1	52	11.1	93	NE	4	1.8			10s		NE	0.12	3.0	Cloudy	
Brackettville, Texas	28.65	727.7	29.64	752.8	76	24.4	86	E	16	7.2			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	28.67	728.2	29.62	752.3	57	13.9	81	W	1	0.4		5cs	5s	W	W	0.23	5.8	Cloudy	
Brownsville, Texas	29.77	756.1	29.81	757.2	86	30.0	76	S	8	3.6		0	0			0	0	Clear	
Buffalo, New York	29.39	746.5	30.08	764.0	65	18.3	68	E	8	3.6		0	0			0	0	Clear	
Burkes, Arizona					77	25.0	31	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.88	758.9	30.17	766.3	64	17.8	68	SW	7	3.1		2ck	5s	SW	NE	0	0	Fair	
Cairo, Illinois	29.52	749.8	29.89	759.2	76	24.4	82	S	11	4.9		10c	0	Calm		0.14	3.6	Cloudy	
Campo, California	27.30	693.4	29.88	758.9	42	5.6	83	W	3	1.3			10s		W	0	0	Cloudy	
Cape Hatteras, N. Carolina	30.09	764.3	30.10	764.5	67	19.4	79	NE	16	7.2			10s		N	0	0	Cloudy	
Cape Henry, Virginia	30.11	764.8	30.13	765.3	65	18.3	89	NE	16	7.2			10s		NE	0	0	Cloudy	
Cape Lookout, N. Carolina	30.07	763.8	30.09	764.3	73	22.8	90	NE	19	8.5		5k	0	NE		0	0	Fair	
Cape May, New Jersey	30.12	765.0	30.15	765.8	61	16.1	88	NE	16	7.2			10s		NE	0	0	Cloudy	
Castroville, Texas	29.05	737.9	29.72	754.9	79	26.1	74	S	6	2.7			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.07	763.8	30.09	764.3	81	27.2	74	W	4	1.8		1cs	0	Calm		0	0	Clear	
Charleston, South Carolina	30.00	762.0	30.06	763.5	81	27.2	82	SW	4	1.8		5c	0	Calm		0.02	0.5	Fair	
Charlotte, North Carolina	29.24	742.7	30.03	762.7	73	22.8	76	NE	3	1.3		5c	Haze	SW	Calm	0	0	Fair	
Chattanooga, Tennessee	29.26	743.2	30.02	762.5	73	22.8	81	Calm	0	0		2cs	Sm'e	NE	Calm	0	0	Fair	
Cheyenne, Wyoming	23.88	606.5	29.82	757.4	43	6.1	59	NW	16	7.2		0	5s		SW	0	0	Fair	
Chicago, Illinois	29.13	739.9	29.79	756.7	63	17.2	94	SE	6	2.7			10n		Calm	0.36	9.1	Light rain	
Chincoteague, Virginia	30.14	765.5	30.16	766.1	61	16.1	96	NE	15	6.7			10s		NE	Inap.	Inap.	Threatening	
Cincinnati, Ohio	29.88	746.2	30.02	762.5	67	19.4	79	NE	6	2.7			10n		Calm	0.03	0.8	Light rain	
Cleveland, Ohio	29.32	744.7	30.02	762.5	66	18.9	64	SE	8	3.6		5c;cs	0	NW		0	0	Fair	
Coleman City, Texas	28.01	711.4	29.58	751.3	75	23.9	68	S	8	3.6		0	0			0	0	Clear	
Columbus, Ohio	29.17	740.9	29.98	761.5	70	21.1	61	SE	7	3.1		5cs	Haze	E	Calm	0.51	13.0	Fair	
Concho, Texas	27.89	708.4	29.46	748.3	77	25.0	69	SE	14	6.3		2c	0	S		0	0	Fair	
Corsicana, Texas	29.42	747.3	29.86	758.4	76	24.4	83	S	12	5.4		0	5ks		Calm	0	0	Fair	
Davenport, Iowa	29.08	738.6	29.68	753.9	68	20.0	90	E	5	2.2			10s		W	0.06	1.5	Cloudy	
Dayton, Washington T'y					44	6.7	75	SW			4	8k	0	NE		0	0	Fair	
Deadwood, Dakota	25.14	638.5			47	8.3	62	Calm	0	0			10s		Calm	0.10	2.5	Cloudy	
Decatur, Texas	28.62	726.9	29.72	754.9	75	23.9	86	SE	24	10.7		2k	2s	Calm	S	0	0	Fair	
Delaware Breakwater, Del.	30.14	765.5	30.17	766.3	62	16.7	88	NE	20	8.9			10s		NE	Inap.	Inap.	Cloudy	
Denison, Texas	29.03	737.3	29.78	756.4	76	24.4	82	S	12	5.4		5k	0	S		0	0	Fair	
Denver, Colorado	24.62	625.3	29.84	757.9	52	11.1	54	NE	8	3.6		0	0			0	0	Clear	
Des Moines, Iowa	28.76	730.5	29.59	751.6	69	20.6	85	E	2	0.9		0	5s		SW	0.16	4.1	Fair	
Detroit, Michigan	29.33	745.0	29.98	761.5	63	17.2	78	E	7	3.1		8cs	0	W		0.01	0.3	Fair	
Dodge City, Kansas	26.94	684.3	29.08	738.6	63	17.2	73	N	12	5.4		0	0			0	0	Clear	
Dubuque, Iowa	29.01	736.8	29.67	753.6	67	19.4	84	SE	5	2.2			10s		Calm	0.15	3.8	Cloudy	
Duluth, Minnesota	29.01	736.8	29.67	753.6	51	10.6	93	NE	6	2.7			10s		S	0	0	Cloudy	
Eagle Pass, Texas	29.19	741.4	29.88	758.9	78	25.6	82	SE	12	5.4			10s		S	0	0	Cloudy	
Eastport, Maine	30.16	766.1	30.22	767.6	55	12.8	74	N	4	1.8		5c	0	W		0	0	Fair	
Edinburg, Texas					84	28.9	87	SE			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.36	745.7	30.05	763.3	68	20.0	56	SE	1	0.4		0	0			0	0	Clear	
Escanaba, Michigan	29.26	743.2	29.91	759.7	56	13.3	100	E	2	0.9			10n		S	0.11	2.8	Heavy rain	
Florence, Arizona					70	21.1	70	SE	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	24.93	633.2	30.38	771.6	54	12.2	38	SE	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.44	697.0	29.19	741.4	53	11.7	66	SW	26	11.6		0	5s		W	0.74	18.8	Fair	
Fort Custer, Montana	26.55	674.4			55	12.8	44	SW	12	5.4		0	0			0.07	1.8	Clear	
Fort Davis, Texas	25.10	637.5	30.06	763.5	76	24.4	24	W	7	3.1		0	0			0	0	Clear	
Fort Elliot, Texas	26.57	674.9	28.62	726.9	76	24.4	27	SE	20	8.9		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.18	741.1	29.68	753.9	78	25.6	65	S	16	7.2		0	0			0	0	Clear	
Fort Grant, Arizona	25.14	638.5	29.94	760.5	67	19.4	17	N	6	2.7		0	0			0	0	Clear	
Fort Griffin, Texas	28.49	723.6	29.68	753.9	77	25.0	69	S	14	6.3		0	0			0	0	Clear	
Fort Keogh, Montana	26.92	683.8			51	10.6	64	NW	8	3.6		0	0			0.22	5.6	Clear	
Fort McKavett, Texas	27.55	699.8	29.36	745.7	73	22.8	76	S	14	6.3		1ck	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.49	723.6	29.52	749.8	77	25.0	70	SE	16	7.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.72	704.1			53	11.7	79	SW	8	3.6		0	0			0.20	5.1	Clear	
Fort Verde, Arizona					70	21.1	44	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.86	758.4	29.91	759.7	82	27.8	76	S	13	5.8		2c	2ks	Calm	S	0	0	Fair	
Grand Haven, Michigan	29.22	742.2	29.84	757.9	65	18.3	68	E	8	3.6			10s		Calm	0	0	Cloudy	
Helena, Montana					43	6.1	75	S	12	5.4		2cs	0	S		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.13	739.9	29.88	758.9	66	18.9	89	SE	10	4.5			10n		Calm	0.81	20.6	Light rain	
Indianola, Texas	29.85	758.2	29.88	758.9	83	28.3	79	S	16	7.2		2ck	0	Calm		0	0	Fair	
Jacksboro, Texas	28.65	727.7	29.70	754.4	75	23.9	77	SE	16	7.2		0	0			0	0	Clear	
Jacksonville, Florida	30.06	763.5	30.08	764.0	82	27.8	71	SW	6	2.7		2cs	0	Calm		0	0	Clear	
Keokuk, Iowa	28.98	736.1	29.56	750.8	67	19.4	84	SE	19	8.5			10s		Calm	2.18	55.4	Threatening	
Key West, Florida	30.05	763.3	30.08	764.0	82	27.8	79	SE	7	3.1		5k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	30.10	764.5	30.13	765.3	65	18.3	94	NE	19	8.5			10s		NE	0	0	Cloudy	
Knoxville, Tennessee	29.08	738.6	30.05	763.3	69	20.6	77	W	3	1.3		5cs	1ks	W	Calm	0	0	Fair	
La Crosse, Wisconsin	28.99	736.3	29.69	754.1	65	18.3	84	SE	5	2.2			10s		Calm	0.33	8.4	Cloudy	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	68	20.0	26	W	2	0.9		0	0			0	0	Clear	
Laredo, Texas	29.34	745.2	29.96	753.4	83	28.3	71	SE	11	4.9		2ck	2s	Calm	SE	0	0	Fair	
Leavenworth, Kansas	28.76	730.5	29.55	750.6	69	20.6	90	SE	6	2.7			10s		S	0.22	5.6	Cloudy	
Lewiston, Idaho	29.19	741.4	29.83	757.7	52	11.1	64	Calm	0	0			10s		Calm	0	0	Cloudy	
Little Rock, Arkansas	29.55	750.6	29.95	760.7	77	25.0	82	S	10	4.5		2cs	2ks	SW	SW	0	0	Fair	
Los Angeles, California	29.55	750.6	29.89	759.2	62	16.7	88	SW	1	0.4			9s		NE	0	0	Cloudy	
Louisville, Kentucky	29.37	746.0	29.90	759.4	73	22.8	67	SE	4	1.8			10ks;s		Calm	0	0	Cloudy	
Lynchburg, Virginia	29.46	748.3	30.13	765.3	68	20.0	79	NE	3	1.3			10s		E	0	0	Cloudy	
Madison, Wisconsin	28.76	730.5	29.70	754.4	65	18.3	89	SE	12	5.4			10s		SE	0.57	14.5	Cloudy	
Marquette, Michigan	29.18	741.1	29.87	758.7	56	13.3	69	SE	6	2.7			10n		SE	Inap.	Inap.	Light rain	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Mason, Texas	28.20	716.3	29.85	758.2	77	25.0	73	S	10	4.5		2k	0	S		0	0	Fair	
Memphis, Tennessee	29.56	750.8	29.88	758.9	78	25.6	82	S	11	4.9		5cs	2s	Calm	S	0	0	Fair	
Milwaukee, Wisconsin	29.10	739.1	29.80	756.9	58	14.4	88	NE	5	2.2			10n		S	Inap.	Inap.	Light rain	
Mobile, Alabama	30.01	762.2	30.05	763.3	78	25.6	82	Calm	0	0		2c	0	Calm		0.18	4.6	Clear	
Montgomery, Alabama	29.85	758.2	30.08	764.0	78	25.6	82	SW	4	1.8		5c	0	W		0	0	Fair	
Morgantown, West Virginia	29.08	738.6	30.04	763.0	66	18.9	84	Calm	0	0		2k	0	Calm		0	0	Fair	
Mt Washington, N. H	24.01	609.8	30.37	771.4	47	8.3	92	S	8	3.6			Fog		S	0.07	1.8	Dense fog	
Nashville, Tennessee	29.46	748.3	29.96	761.0	78	25.6	69	SE	3	1.3		2ck;cs	0	SW		0	0	Clear	
New Haven, Connecticut	30.09	764.3	30.21	767.3	56	13.3	82	NE	10	4.5			10s		NE	0.02	0.5	Cloudy	
New London, Connecticut	30.15	765.8	30.20	767.1	57	13.9	75	N	4	1.8			9s		Calm	Inap.	Inap.	Cloudy	
New Orleans, Louisiana	29.97	761.2	30.03	762.7	79	26.1	78	S	4	1.8		0	Sm'e		Calm	0	0	Clear	
Newport, Rhode Island	30.15	765.8	30.20	767.1	54	12.2	93	N	9	4.0			10n		Calm	0.06	1.5	Light rain	
New River, North Carolina					73	22.8	90	NE			2		10ks		NE	0	0	Cloudy	
New York, New York	30.02	762.5	30.20	767.1	57	13.9	87	NE	9	4.0			10ks		NE	0.02	0.5	Cloudy	
Norfolk, Virginia	30.01	762.2	30.06	763.5	64	17.8	89	E	6	2.7			10s;fg		Calm	0	0	Cloudy	
North Platte, Nebraska	26.78	680.2	29.23	742.4	59	15.0	59	NE	22	9.8		5ck	0	SE		0.07	1.8	Fair	
Olympia, Washington Ter	30.14	765.5	30.18	766.6	47.0	8.3	84	SW	1	0.4		0	8ks		Calm	0.07	1.8	Fair	
Omaha, Nebraska	28.47	723.1	29.50	749.3	65	18.3	89	N	6	2.7			10n		S	0.04	1.0	Light rain	
Oswego, New York	29.85	758.2	30.17	766.3	63	17.2	72	SE	6	2.7		0	0			0	0	Clear	
Pembina, Dakota	28.69	728.7	29.49	749.0	57	13.9	94	S	8	3.6			10s		S	0.79	20.1	Cloudy	
Pensacola, Florida	30.03	762.7	30.06	763.5	80	26.7	78	SW	2	0.9		5cs	0	Calm		0.31	7.9	Fair	
Philadelphia, Pennsylvania	30.13	765.3	30.18	766.6	58	14.4	88	NE	9	4.0			10s		Calm	0	0	Cloudy	
Phœnix, Arizona	28.60	726.4	30.27	768.8	87	30.6	31	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.70	449.6	29.91	759.7	30	−1.1	47	SW	30	13.4		1cs	0	Calm		0	0	Clear	
Pilot Point, Texas	29.02	737.1	29.82	757.4	76	24.4	82	S	25	11.2		8k	0	S		0	0	Fair	
Pioche, Nevada	23.9	607.3	29.68	753.9	46	7.8	40	NW	11	4.9		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.07	763.8	63	17.2	83	NE	1	0.4		0	Fog			0	0	Clear	
Port Huron, Michigan	29.37	746.0	30.02	762.5	59	15.0	65	SE	7	3.1			10s		SW	0	0	Cloudy	
Portland, Maine	30.19	766.8	30.24	768.1	53	11.7	86	NE	2	0.9			10n		E	0.81	20.6	Light rain	
Portland, Oregon	30.15	765.8	30.22	767.6	50	10.0	79	NW	2	0.9			10s		NW	0.18	4.6	Cloudy	
Portsmouth, North Carolina																			
Prescott, Arizona	24.61	625.1	29.97	761.2	67	19.4	21	S	9	4.0		0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	82	27.8	75	E	5	2.2		1k	0	Calm		0	0	Clear	
Red Bluff, California	29.66	753.4	30.02	762.5	54.0	12.2	49	NW	12	5.4		0	0			0	0	Clear	
Rio Grande City, Texas	29.61	752.1	29.82	757.4	82	27.8	79	SE	13	5.8		1cs	5ks	Calm	SE	0	0	Fair	
Rochester, New York	29.52	749.8	30.12	765.0	65	18.3	58	SE	4	1.8		0	Haze		Calm	0	0	Clear	
Roseburg, Oregon	29.69	754.1	30.27	768.8	46.5	8.1	84	Calm	0	0			10s		Calm	0.11	2.8	Cloudy	
Sacramento, California	29.88	758.9	29.96	761.0	61	16.1	40	N	16	7.2		0	0			0	0	Clear	
St. Louis, Missouri	29.27	743.4	29.82	757.4	69	20.6	80	NE	11	4.9			10s		Calm	0	0	Cloudy	
St. Paul, Minnesota	28.85	732.8	29.63	752.6	64	17.8	94	E	10	4.5			10s		E	0.18	4.6	Cloudy	
Salt Lake City, Utah	25.54	648.7	29.87	758.7	47	8.3	41	Calm	0	0		2k	0	W		0	0	Clear	
San Antonio, Texas	29.16	740.7	29.82	757.4	81	27.2	74	SE	10	4.5		0	5ks		SE	0	0	Fair	
San Diego, California	29.84	757.9	29.91	759.7	62	16.7	88	S	6	2.7			8n		S	0.06	1.5	Light rain	
Sandusky, Ohio	29.34	745.2	29.99	761.7	68	20.0	66	SE	8	3.6		0	5ks		Calm	0	0	Fair	
Sandy Hook, New Jersey	30.15	765.8	30.18	766.6	68	20.0	84	NE	15	6.7			10s		N	0.03	0.8	Cloudy	
San Francisco, California	29.97	761.2	30.03	762.7	52	11.1	73	W	6	2.7		0	0			0	0	Clear	
Santa Fé, New Mexico	23.15	588.0	29.69	754.1	61	16.1	12	NW	6	2.7		0	Sm'e		Calm	0	0	Clear	
Savannah, Georgia	29.98	761.5	30.07	763.8	83	28.3	71	SW	2	0.9		8cs	Sm'e	Calm	Calm	0	0	Fair	
Shreveport, Louisiana	29.69	754.1	29.90	759.4	78	25.6	82	S	8	3.6		0	5s		S	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.06	763.5	30.09	764.3	76	24.4	82	N	4	1.8		2k	0	NE		0.25	6.3	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.22	742.2	29.86	758.4	67	19.4	84	SW	8	3.6			10n		W	0.19	4.8	Thunder-storm	
Springfield, Massachusetts	30.11	764.8	30.24	768.1	56	13.3	75	N	5	2.2		0	8s		NE	0.20	5.1	Cloudy	
Stockton, Texas	26.78	680.2	29.78	756.4	75	23.9	64	SW	6	2.7		0	0			0	0	Clear	
Thatcher's Island, Mass	30.19	766.8	30.24	768.1	52	11.1	100	NE	11	4.9			10s		NE	0.54	13.7	Cloudy	
Toledo, Ohio	29.32	744.7	29.98	761.5	68	20.0	65	SE	5	2.2		10cs	Sm'e	SW	Calm	0	0	Threatening	
Tucson, Arizona	27.37	695.2	29.92	760.0	79	26.1	27	E	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.76	755.9	30.26	768.6	47.5	8.6	82	NW	4	1.8		0	0			0.06	1.5	Clear	
Uvalde, Texas	28.86	733.0	29.64	752.8	78	25.6	82	SE	6	2.7			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.00	762.0	77	25.0	82	SE	7	3.1		0	0			0	0	Clear	
Virginia City, Montana	24.10	612.1	29.58	751.3	30	−1.1	78	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.50	749.3	29.86	758.4	56	13.3	51	NW	3	1.3		0	0			0	0	Clear	
Washington, D. C	30.08	764.0	30.20	767.1	64	17.8	78	E	4	1.8			10s		NE	0	0	Cloudy	
Wickenburg, Arizona					60	15.6	34	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.02	762.5	30.09	764.3	73	22.8	85	Calm	0	0		5ck	0			0.91	23.1	Fair	
Winnemucca, Nevada	25.62	650.7	29.98	761.5	38	3.3	54	E	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.16	766.1	30.20	767.1	53	11.7	93	NE	9	4.0			10s		Calm	0	0	Cloudy	
Yankton, Dakota	28.67	728.2	29.59	751.6	63	17.2	89	NW	13	5.8		0	0			0.70	17.8	Clear	
Yuma, Arizona	29.53	750.0	29.67	753.6	71	21.7	49	NE	6	2.7		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.04	559.8			58.5	14.7	68	Calm	0	0		2k	2ks			Inap.	Inap.	Fair	Thomas Herran.
§ Havana, Cuba, W. I	30.05	763.3	30.10	764.5	78	25.6	86	Calm	0	0		8cs	0	Calm		2.05	52.1	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.00	762.0	30.01	762.2	80	26.7	76	Calm	0	0		8c	2s		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I	29.83	757.7	29.91	759.7	81	27.2	83	E	4	1.8		5k	2s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.03	762.7	30.03	762.7	78	25.6	91	E			3		10n		E	0.460	11.68	Raining	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.42	747.3	29.97	761.2	76	24.4	94	S			1		10ks			0.15	3.8		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25		SE				2cs	1k	SE	SE	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I	30.00	762.0	30.01	762.2	82	27.8	83	Calm	0	0		8cs	0	NW		0	0		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.09	764.3	30.14	765.5	41.0	5.0	87	N	8	3.6		8k	0	N		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,100 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.67 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.11	764.8	81	27.2	78	SW	6	2.7	.....	.....	5d	.....	S	.....	.....	.....	.....	Fair	
Navy Yard, Portsmouth, N. H.	30.31	769.9	50	10.0	64	ENE	5	2.2	.....	.....	10	.....	.....	0.6	15.	.....	.....	Raining	
Naval Hospital, Yokohama, Japan	29.74	755.4	67.5	19.7	87	SW	.....	.....	2	.....	5k;hz	.....	W	0	0	.....	.....	Fair	
§Adams, S 0° 16′, W. 82° 16′	30.00	762.0	74	23.3	86	SSE	.....	.....	3	.....	5	.....	S	.....	.....	.....	.....	Fair	
§Alaska, S. 10° 08′, W. 73° 17′ *	29.98	761.5	64	17.8	89	SE	.....	.....	3	.....	2	.....	SE	.....	.....	Long	SSW	Fair	
§Alert, Yokohama, Japan	29.65	753.1	70	21.1	85	S	.....	.....	1	.....	5	.....	Calm	0	0	Smooth	.....	Fair	
§Alliance, N. 43° 50′, W. 57° 15′	30.17	766.3	49	9.4	100	NNE	.....	.....	4	.....	10	.....	NNE	Slight	Slight	Smooth	E	Foggy	
§Ashuelot, Jone's Island, Yangtzekiang, China	29.78	756.4	82	27.8	60	Calm	.....	.....	0	.....	8?	.....	.....	.....	.....	None	.....	Clear?	
§Colorado, New York, N. Y.	30.18	766.6	58	14.4	94	NNE	2	0.9	.....	.....	10	.....	NE	0.01	0.3	.....	.....	Misty	
§Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	30.18	766.6	58	14.4	88	ENE	4	1.8	.....	.....	10	.....	NE	.....	.....	.....	.....	Overcast	
§Franklin, Off Navy Yard, Norfolk, Va	30.11	764.8	65	18.3	94	ENE	8	3.6	.....	.....	10	.....	.....	0	0	.....	.....	Cloudy	
§Independence, Mare I'd, Navy Yard, Cal.	29.97	761.2	55	12.8	??	WSW	3.6	1.6	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
§Jamestown, Sitka, Alaska *	30.18	766.6	48	8.9	92	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	Smooth	.....	Cloudy	
§Kearsarge, N. 40° 20′, W. 72° —′	30.12	765.0	58	14.4	88	NE	.....	.....	4	.....	10	.....	NE	.....	.....	Mod'ate	NE	Cloudy	
§Lackawana, Amapata, Honduras †	30.03	762.7	83	28.3	83	ENE	.....	.....	1	.....	2	.....	ENE	.....	.....	.....	.....	Fair	
§Marion, Port Stanley, Falkland I'ds	29.22	742.2	37	2.8	100	WSW	.....	.....	5	.....	2	.....	W	Blank	Blank	Smooth	.....	Fair	
§Michigan, Erie, Pa.	30.03	762.7	73	22.8	55	NE	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.16	766.1	57	13.9	100	ENE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Cloudy	
§Monocacy, Chefoo, China	29.80	756.9	66	18.9	84	NW	.....	.....	1	.....	2	.....	.....	.....	.....	.....	.....	Clear	
§New Hampshire, Port Royal, S. C.	29.92	760.0	79	26.1	86	SW	4	1.8	.....	.....	2	.....	SW	0.27	6.9	.....	.....	Clear	
Nipsic. Leghorn, Italy	30.16	766.1	68	20.0	74	WSW	.....	.....	2	.....	5	.....	.....	.....	.....	.....	.....	D. clouds	
§Onward, Callao Bay, Peru †	29.99	761.7	64	17.8	89	ENE	.....	.....	2	.....	5	.....	ENE	.....	.....	Long	W	Fair	
§Palos, Shanghai, China	29.83	757.7	71	21.7	85	SSE	.....	.....	2	.....	2	.....	S;E	.....	.....	.....	.....	Clear	
§Passaic, Washington, D. C.	30.16	766.1	68	20.0	74	NE	.....	.....	1	.....	10	.....	NE	0	0	.....	.....	Cloudy	
§Pensacola, San Francisco, Cal.	29.98	761.0	51	19.6	86	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Smooth	S	Hazy	
§Portsmouth, N. 35° 28′, W. 47° 10′	30.17	766.3	70	21.1	85	S	.....	.....	5	.....	8	.....	S	.....	.....	Rough	SW	Cloudy	
§Powhatan, New York, N. Y.	30.20	767.1	59	15.0	88	NE	.....	.....	2	.....	10	.....	NE	.....	.....	.....	.....	Overcast	
§Quinnebaug, Antwerp, Belgium	29.89	759.2	58	14.4	76	SW	.....	.....	3	.....	10	.....	SW	.....	.....	.....	.....	Cloudy	
§Richmond, Nagasaki, Japan	29.82	757.4	70	21.1	85	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Clear	
Rio Bravo, Brownsville, Texas †	29.98	761.5	79	26.1	95	SE	3	1.3	.....	.....	2	.....	S	0	0	.....	.....	Fair	
§Saratoga, Gibraltar, Mediterranean	30.03	762.7	74	23.3	63	S	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Misty	
§Shenandoah, Montevideo, Uruguay	30.12	765.0	48	8.9	92	NNW	.....	.....	3	.....	8	.....	Calm	.....	.....	Smooth	.....	Fair	
§St. Louis, League Island, Pa.	30.16	766.1	63	17.2	94	NE	3	1.3	.....	.....	10	.....	.....	0	0	.....	.....	Misty	
Swatara, Saigon, Siam †	29.80	756.9	77	25.0	91	Calm	.....	.....	0	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy	
§Tennessee, New York, N. Y.	30.20	767.1	60	15.6	82	NNE	.....	.....	2	.....	10	.....	Calm	0	0	.....	.....	Hazy	
§Ticonderoga, N. 33° 15′, E. 131° 51′	29.79	756.7	69	20.6	100	SSW	.....	.....	1	.....	2	.....	SW	.....	.....	Smooth	.....	Clear	
§Trenton, Marseilles, France	30.05	763.3	70	21.1	75	SSW	.....	.....	2	.....	5	.....	.....	0	0	None	.....	Cloudy	
§Vandalia, Newport, Rhode Island	30.22	767.6	54	12.2	93	NNE	.....	.....	4	.....	10	.....	SSE	.....	.....	.....	.....	Rainy	
§Wabash, Boston, Mass.	30.22	767.6	56	13.3	87	N	5	2.2	.....	.....	10	.....	.....	0.07	1.8	.....	.....	Cloudy	
§Wachusett, S. 50° 33′, W. 78° 56′	29.80	756.9	40	4.4	91	SSW	.....	.....	4-6	.....	5	.....	S;W	Sho	wers	Rough	S	Squally	
Wyoming, Villafranca, France	30.11	764.8	68	20.0	65	Calm	.....	.....	0	.....	5?	.....	SW	.....	.....	Smooth	SW	Clear?	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 46° 06', W. 68° 43'	30.20	767.1	42	5.6		NNE			4		10					Smooth	ESE	Dense fog	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent. N. 51° 10', W. 11° 43'	29.79	756.7	50	10.0	64	E			2		7		NE	Mod'ate	Mod'ate	Mod'ate	NNW	Cloudy	
S. S. Ohio, Henry Morrison. N. 40° 00', W. 51° 42'.....†	29.99	761.7	76	24.4	91	N			2		2		N	3 h'rs	3 h'rs	Small	SE	Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger. N. 22° 52', W. 110° 00'.....†	29.91	759.7	65	18.3	94	NW			3		10		NW			Small	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch. N. 51° 14', E. 1° 50'	29.81	757.2	54	12.2	87	S			2		5		S	4 h'rs	4 h'rs	Mod'ate	S	Raining	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer. N. 38° 38', E. 161° 16'.....†	29.88	758.9	59	15.0	94	E			5		10		E			Heavy	E	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 36° 40', E. 160° 07'.....†	29.83	757.7	65?	18.3?	??	WSW			3		10n*		SW	Consi	d'ble	Smooth	SW	Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan,																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander. N. 37° 31', W. 122° 32'	30.08	764.0	49	9.4		NW			4		0		NW			Heavy	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney. Portland, Oregon.....†	30.17	766.3	44	6.7		SE			2		5		SW					Showery	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.87	758.7	76	24.4	86	NNE			1		5		Calm			Light	WSW	Fair	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Senbury																			
§ S. S. City of Chester, J. M. Lacklan																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	29.93	760.2	56	13.3	87	SSW			2		10		W			Smooth	SW	Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Panama, Panama.....†	29.95	760.7	80	26.7	91	NW			1		2		NW	0	0	Smooth	S	Clear.	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 25° 19', E. 121° 02'.....†	29.76	755.9	72	22.2	95	NE			6		10		NE	Light	Light	Light	NE	Rainy	
§ S. S. City of Sidney, H. C. Dearborn, N. 22° 21', W. 156° 05'...*†	30.06	763.5	74	23 3		ENE			6		8		NE	0	0	Heavy	NE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 24° 48', W. 112° 52'.....†	29.95	760.7	63	17.2	100	Calm			0		10		Calm	0	0	Smooth	NW	Cloudy	
§ S. S. Dakota, D. E. Griffiths, Esquimalt, Vancouver I'd.....†	30.15	765.8	53	11.7	80	W			1		5		W					Hazy	D. E. Griffiths.
§ S. S. Granada, J. M Cavady N. 19° 06', W 104° 44'.....†	29.98	761.5	82	27.8	91	NW			5	. 2c		NW		0	0	Mod'ate	S	Clear	
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.05	763.3	51	10.6		SW			1		0							Clear.	E. Alexander.
§ S. S. Z alandia, R. C. Ghest, N. 34° 22', W. 131° 32'.....	30.31	769.9	57	13.9		NNW			4		8		NW			Smooth	W	Overcast	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes.																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 43° 26', W. 45° 57'.....†	30.18	766.6	64	17.8		S			4		8		ESE			Smooth	E	Gloomy	J. Jones.
S. S. Celtic, B. Gleadell																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 33° 31', W. 77° 45'.....†	30.09	764.3	80	26.7		NE			1		0			0.05	1.3	Long	S	Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass	30.22	767.6	56	13.3	81	NE					10							Overcast	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. It	30.07	763.8	86	30.0		NE			1		2		E	Showers.	Showers.	Smooth		Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 7° 40', W. 15° 28'.....*†	30.13	765.3	78	25.6		SE			4		8		SE			Mod'ate	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.26	768.6				E			1		10		E					Foggy	S. S. Miner.
Brigantine George, W. H Champlin																			
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, N. 44° 51', W. 61° 15'.....	30.22	767.6	45	7.2	100	ENE			3		Fog			0	0	Smooth		Dense fog	James S. Garvin.

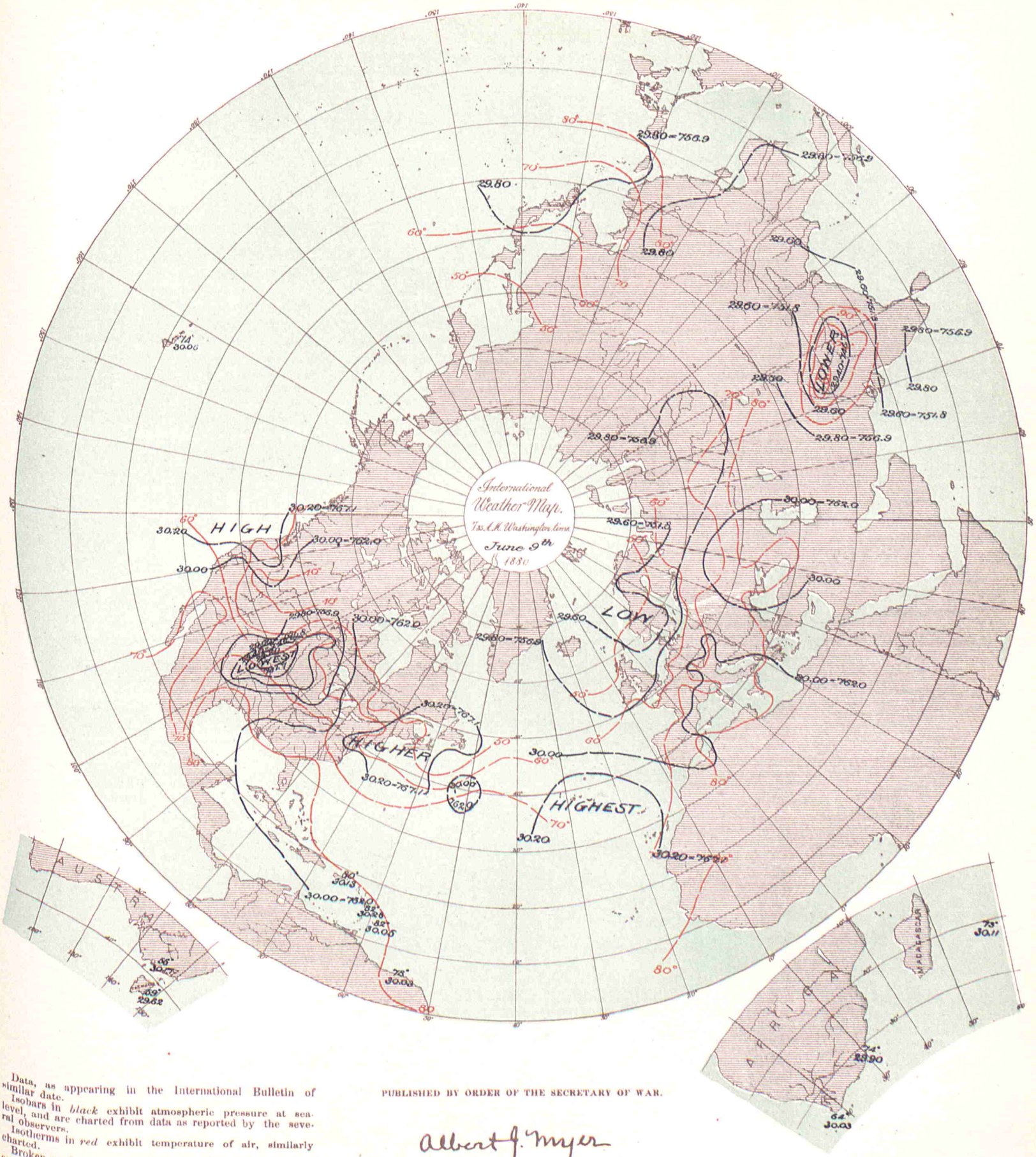
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 10, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.02	762.5	77.5	25.3	73	WNW			2		4			0	0	Cloudy	Metge.
Algiers			30.04	763.1	75.2	24.0	64	NW			3		10			Inap.	Inap.	Covered	Nicolas.
La Calle			29.99	761.8	83.7	28.7	56	SE			1		0			0	0	Clear.	Fonfrède.
Tunis			30.03	762.7															Jacques.
Sfax			30.17	766.2															Gau.
Saida			30.06	763.4															Charon.
Tebessa			30.09	764.3	86.9	30.5	16	ESE			1		4			0	0	Cloudy	Watrin.
Geriville			30.11	764 7	83.3	28.5	18	SSE			7		0			0	0	Clear	Lonchamp.
Laghouat			30.11	764.7	86.7	30.4	20	SSE			4		0			0	0	Clear	Herlin.
Biskra			30.11	764.8	90.3	32.4	37	E			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.43	747.6	29.98	760.9	78.1	25.6	47	S			4		3			Inap.	Inap.		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.20	741.7	29.93	760.3	78.4	25.8	48	E	11.2	5.0			1			0.217	5.5		Dr. Wierzbicki.
Eperies	29.08	738 7	29.92	759.9	79.5	26.4	46	Calm			0		8cs;s			0.203	5.15		Julius Mikolik.
Gratz	28.70	728.9	29.89	759.3	74.7	23.7	67	E			1		6			0	0		Andreas Rospini.
Hermannstadt	28.67	725.7	29.94	760.5	73.8	23.2	66	N			1		6			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.56	725.3	29.83	757.6	76.3	24.6	66	Calm			0		10			0	0		The Staff.
Lemberg	28.99	736.4	29.93	760.3	75.2	24.0	55	SE			2		6			0	0		Dr. T. Stanecki.
Pola	29.96	761.0	30.11	764.8	74.3	23.5	55	SW			1		6			0	0		I.R. Hydrographic Office.
Szathmar	29.53	750.0	29.98	761.4	71.2	21.8	84	W			3		2			0	0		Pet. Pancsics, S. J.
Szegedin	29.69	754.1	29.96	760.9	77.7	25.4	49	Calm			0		5			0	0		Karl Stancel.
Trieste	29.97	761.1	30.07	763.7	75.6	24.2	69	WSW			1		0			0	0		P. Busin.
Vienna	29.21	741.8	29.93	760.2	74.8	23.8	57	SE			2		6			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.67	753.5	29.86	758.5	58.8	14.9	79	W			0	0	10	SW	SW	0.122	2.85		Royal Observatory.
Furnes	29.88	759.0	29.91	759.6	*54.9	12.7	89	NNW			2		10			0.063	1.6	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 9, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.78	756.4	29.88	758.9	50.0	10.0		SE	14	6.3			3			0	0	Blue sky	W. Boswell.
Ardrossan	29.81	757.2	29.83	757.7	59	15.0		WNW			1		3					Blue sky	G. Carrick.
Armagh, (Observatory)	29.63	752.6	29.86	758.4	54.2	12.3		N	1	0.4			5					Misty	S. Call.
Bidston (Liverpool Obs)			29.84	757.9	58.2	14.6		NW	10	4.5			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.29	744.0	29.80	756.9	53.5	11.9		NW	1	0.4			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.44	747.8	29.84	757.9	54.7	12.6	66	S			1		10			0.02	0.5	Overcast	J McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	82	27.9		E			3		6					Gloomy	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.74	755.4	29.84	757.9	59.0	15.0		ESE			1		5					D. clouds	H. Todd.
Cardington			29.83	757.7	62.0	16.7		W			0-4		7					D. clouds	John McLaren.
Chatham (School M. E.)	29.74	755.4	29.86	758.4	60.0	15.6		Calm			0	8ck						D. clouds	Lance Crp'l Hocker, R.E
Donaghadee	29.82	757.4	29.86	758.4	55	12.8		N			2		3					D. clouds	J. Mac Gowan.
Dover	29.83	757.7	29.86	758 4	56	13.3		SSE			1		4					½ clouded	J. Costello.
Falmouth (Observatory)	29.62	752.3	29.85	758.2	57.4	14.1		SE			1		5					D. clouds	The Staff.
Fort Napier, Natal	27.75	704.8	29.96	761.0	64.8	18.2		NE			1		5					D. clouds	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.67	753.6	29.89	759.2	85	29.4		Calm			0		5					Drizzling	
Galway (Queen's College)			29.80	756.9	60	15.6		N			1		8					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.99	761.7	30.05	763.3	69.8	21.0		W			4		6					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.61	752.1	29.82	757.4	58.4	14.7		W			1		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.87	758.7	29.88	758.9	55	12.8		ESE			3		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.68	753.9	29.85	758.2	60.5	15.8		S			0		7					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.61	752.1	29.83	757.7	55	12.8		NE			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.05	763.3	30.17	766.3	57	13.9		NE			4	4ck				0.42	10.7	Threatening	M. P. Moyle.
Holyhead	29.84	757.9	29.37	758.7	55	12.8		N			3		2					Blue sky	John Tilston.
Jersey	29.59	751.6	29.88	758.9	58.7	14.8		SW			1		4					D. clouds	J. Fisher.
Kew (Observatory)	29.82	757.4	29.86	758.4	62.5	16.9		S			6		6					Misty	The Met'g'l Office.
Leicester (Museum)	29.58	751.3	29.83	757.7	61.8	16.6		S			1		9					D. clouds	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.99	761.7	30.07	763.8	74	23.3		NE			2		0					Blue sky	A. King.
Nairn	29.74	755.4	29.83	757.7	54	12.2		ENE			1		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.10	764.5	81.5	27.5		SE			0		9					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.65	753.1	29.84	757.9	66.1	18.9		E			1	c	5n		E	0.291	7.40	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.31	744.5	29.83	757.7	57.5	14.2		ENE			2		3					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.61	752.1	29.86	758.4	59.9	15.5		E			1		4					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	29.76	755.9	29.84	757.9	60.2	15.7		S			2		1					D. clouds	John Merrifield.
*Roche's Point	29.78	756.4	29.90	759.4	64	17.8		SSE			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.69	754.1	29.85	758.2	55	12.8		W			1		2					Showery	John C. Walker.
Sandwick Manse, Orkneys			29.87	758.7	48.3	9.1		NW	9	4.0			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.82	757.4	29.88	758.9	82.8	28.2		NNE			2		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.49	749.0	29.87	758.7	52.8	11.6		NE			1		0			0.06	1.5	Overcast	W. F. Cooper.
Silloth Rectory	29.81	757.2	29.84	757.9	62.8	17.1	51	W			2		3			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.84	757.9	59.0	15.0		NE	6	2.7			9					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.64	752.8	29.85	758.2	62.4	16.9		SE			1		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.78	756.4	29.81	757.2	56	13.3		NW			4		10					Raining	W. Newcombe.
Valencia (Observatory)	29.83	757.7	29.86	758.4	54.6	12.6		NW	10	4.5			7					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony					63.5	17.5	64	NNW	1.6	0.7		8	10			0.065	1.65	Cloudy	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.30	769.6	30.34	770.6	50.0	10.0	72	SE			2		6k			0	0	Star-light	Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.04	763.0	53.0	11.7		E			2		8k	SW		0.02	0.5	Cloudy	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			29.87	758.7	62.8	17.1		ESE	14.5	6.5			10		SE			Showery	C. Meldrum.
Mauritius (Observatory)	29.92	760.0	30.12	764.9	70.6	21.1	76	NNW	10	4.5			10			0	0	Dull	R. L. J. Ellery.
Melbourne (Observatory)	30.10	764.5	30.19	766.8	56.0	13.3	82	N			3	0	0			0	0		J. Youngclause.
Monach Lt-house, Hebrides			29.88	758.9	51	10.6		NE			2	0	4			0	0		Robert Burnet.
North Unst, Shetland I's			29.84	757.9															

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 48 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount.	Clouds. Direction.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert																Capt. J. P. Maclear, R.N.
City of Agra																Capt. Thos. Young.
City of Cashmere																Capt. W. M. Grieve.
Barque Commewyne																Capt. Jas. Buchan.
Ship British Commodore, N. 47° 10′, W. 23° 25′			30.02	762.5	58	14.4		W		4	6		5	WNW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis																Capt. T. M. Almond.
Barque Dochra																Capt. H. Spalding.
S. S. Ethiopia																Capt. A. Campbell.
Barque Fedalma																Capt. H. L. Fox.
Brig. Fylde																Capt. L. C. Dart.
S. S. German, N. 33° 14′, W. 16° 35′			30.19	766.8	64	17.8		NW		4	7				D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																Capt. Wm. Waring.
Barque Hope																Capt. Jas. Campbell.
S. S. Richmond																Capt. W. H. Stuart.
Barque Royal Alexandra																Capt. W. P. Hughes.
S. S. Strathleven																Capt. C. W. Pearson.
S. S. Sunbeam																Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.17	664.7	29.89	759.2	70.2	21.2	91	SE			1		10n;d		NE	Inap.	Inap	Threatening	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.82	757.5	29.87	758.7	54.5	12.5	79	N			2		10						
Fanöe	29.87	758.8	29.89	759.3	55.9	13.3	75	W			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.80	756.9	29.84	758.0	45.7	7.6	70	NE			7		8						
Thorshavn (Faröe)	29.83	757.7	29.87	758.6	47.7	8.7	64	NW			3		10						
Vestervig	29.80	757.0	29.90	759.4	55.0	12.8	66	WNW			2		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.33	744.9	29.88	758.9	61.2	16.2	79	SW			1		8kn		WSW	0.063	1.6	Very cloudy	Collignon, Director.
Amiens, Normal School	29.72	754.9	29.83	757.6	68.7	20.4	62	N			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.58	751.2	29.83	757.6	55.4	13	90	ENE			1	10ck		E		0.146	3.7	Covered	Klein, Commandant.
Avignon, Normal School	29.84	757.9	29.92	759.9	81.7	27.6	41	SSE			1		10			0	0	Covered	Giraud, Director.
Bar-sur-Seine	29.33	745.0	29.87	758.6	69.8	21.0	57	S			1		8kn		W	0.295	7.5	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.58	751.4	29.84	758.0	66.7	19.3	62	WSW			1		10		SW	0.010	0.25	Covered	Frère Eugene Marie.
Besançon, Normal School	29.03	737.4	29.89	759.1	74.8	23.8	58	S			1		2		S	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.55	750.6	29.75	755.6	78.4	23.0	58	E			1		10		SSW	0.024	0.6	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.03	737.4	29.95	760.8	75.9	24.4	48	S			4		8cn	S	S	0.016	0.4	Very cloudy	Marlot, Director.
Bourges, Normal School	29.34	745.2	29.87	758.8	67.3	19.6	66	N			2		kn		N	0.854	21.7		M. Gence, Director.
Brest, Naval Observatory	29.60	751.8	29.84	757.9	65.5	18.6	69	SSE			1		10		W	0.276	7.00	Raining	Ch. de Rermaree, Dir
Caen, Normal School	29.67	753.7	29.75	755.6	57.0	13.9	76	N			1		5		N	0.035	0.9	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.37	746.0	29.77	756.2	68.4	20.2	74	W			1		5		W	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.66	753.4	29.97	761.3	69.1	20.6	68	SSW			2		8		SW	0.059	1.5	Very cloudy	Jadot, Director
Chartres, Normal School	29.25	742.9	29.80	756.8	68.5	20.3	76	SW			1		10		NE	0	0	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.46	722.9	29.76	755.8	72.0	22.2	50	SE			3		10		S	0.413	10.5		Alluard, Director.
Commercy, Normal School	29.04	737.7	29.87	758.7	68.0	20	65	W			3		kn	W	W	0 110	2.8		Dr. Coullet, Director.
Commune de Gréasque*	28.89	733.7	30.03	762.7	73.8	23.2	45	SE			4		5		SE	0	0		L. Kina, Director.
Grenoble, Normal School	29.08	738.5	29.80	756.9	79.2	26.2	56	S			1	ck				0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.63	752.7	29.85	758.1	58.8	14.9	82	ENE			1		10			0.059	1.5	Covered	Mouillot, Director.
Le Mans, Normal School	29.56	750.5	29.85	758.2	65.1	18.4	71	SSW			1		10		SW	0.024	0.6	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.2	29.89	759.1	72.5	22.5	56	SW			3	2c			S			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.75	755.7	29.85	758.2	63.3	17.4	61	SE			3		8		SE	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.25	742.9	29.84	758.0	77.4	25.2	38	S			3	1c			SW	0 031	0.8	Clear.	Galzin, Director.
Mâcon, Normal School																			Ch. André, Director.
Marseilles, Observatory	29.68	753.8	29.94	760.5	78.1	25.6	42	SE			4		8		SW	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.11	739.4	29.84	757.8	71.0	22	98	SW			3		k		SW	0	0		Barbier, Director.
Mont-Louis	24.74	628.5	29.98	761.5	61.2	16.2	49	S	31.8	14.2			5		E	0.059	1.5		M. Cave, for Dr. Fines.
Nice	30.02	762.4	30.05	763.3	70.2	21.2	72	E			6			W	W	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.71	754.7	29.95	760.8	75.4	24.1	49	S			8		2		S	0.12	3.	Slightly cld'y	M. Boyer, Director.
Perpignan	29.74	755.5	29.85	758.1	69.3	20.7	77	SE	15.0	6.7			6	ESE	ESE	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.56	570.3			44.2	6.8							10		S	0.236	6.0	Rainy	M. Baylac, for Gen'l de Nansou'y
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.90	734.1	29.92	760.0	75.2	24	39	S			1		5	S	S	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.03	635.8			51.4	10.8	83	S			4		8			0.185	4.7		Alluard, Director.
Rochefort, Naval Obs'y	29.82	757.5	29.85	758.3	63.9	17.7	77	SE			1		10	SE	SE	0.43	11.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.76	755.9	29.85	758.1	57.9	14.4	86	W			2		10		S	0.114	2.9		Platrier, Director.
Saint Malo (Port) Obs'y	29.80	756.9	29.83	757.7	59.4	15.2	73	NNE			2		5	NNE	NNE	0.545	13.85	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.70	754.3	29.86	758.5	69.8	20.7	50	S			2		10		SW	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	28.77	730.7	29.84	757.9	55.4	13	77	SW			1							Hailing	T. Huguet, Director
Toulouse, Observatory	29.12	739.7	29.84	758.0	68.9	20.5	68	SSE			6		10			0 138	3.5	Covered	B. Bailland, Dir.
Tours	29.65	753.1	29.85	758.1	64.4	18.0	72	SW			1		10		SW	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.36	745.7	29.85	758.2	67.6	19.8	49	SW			2					0.014	0.35		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.05	737.9	29.73	755.1	75.2	24	53	N			4		5		N	0.08	2.	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.26	768.7	30.29	769.4	81.0	27.2										0.16	4.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.58	751.3			68.5	20.3	50	S			2		10		SSW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.84	757.9	29.86	758.5	68.0	20.0	73	ESE	6.0	2.7			0			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,768 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.06	738.1	29.92	760.0	75.9	24.4	55	S			4		4k	SW		0	0		Prof. Dr. Hoh.
Berlin	29.66	753.4	29.82	757.5	80.2	26.8	30	SE			6		8	SE				Showery	Prof. Dr. Arndt.
Breslau	29.43	747.6	29.97	761.1	77.9	25.5	41	SSE			2		3			0	0		Royal University Obs'y
Carlsruhe	29.48	748.7	29.89	759.2	71.2	21.8	62	SW			8		6	SW		0.130	3.3		Albert Senz.
Cassel	29.26	743.1	29.86	758.4	66.6	19.2	84	W			4		10	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.58	751.4	29.95	760.6	68.9	20.5	55	WSW			4		9			Inap.	Inap.		Physical Society.
Friedrichshafen	28.54	725.0	29.94	760.4	67.3	19.6	64	SSW			5		2	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.78	756.4	29.85	758.2	55.0	12.8	80	NW			3		9			0	0		Dr. Reinhold Kleeman.
Kiel	29.83	757.7	29.85	758.1	58.1	14.5	75	NNE			1		9			0.118	3.02		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.93	760.2	30.01	762.2	71.8	22.1	50	SE			4		6	SW		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.48	748.7	29.88	758.9	77.5	25.3	49	SW			2		8			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.63	752.7	29.86	758.4	71.4	21.9	58	Calm			0		8ks	SSW		0	0		Dr. Assmann.
Memel	29.97	761.2	30.02	762.4	66.9	19.4	46	S			3		4cs						Reinbrecht & Issermann.
Munich	28.10	713.7	29.96	760.9	71.8	22.1	55	NE			4		5	SW		0.024	0.6		Dr. C. Lang.
Neufahrwasser	29.93	760.1	29.94	760.5	76.6	24.8	47	S			4		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.37	746.1	29.90	759.4	69.4	20.8	54	W			1		6	W		0	0		Reallehrer Dicknether.
Posen	29.69	754.1	29.97	761.1	77.5	25.3	45	SE			2		7			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.39	746.5	29.91	759.8	75.9	24.4	46	SE			5		5			0	0		Imp. University Observatory.
Stuttgart	28.98	736.1	29.85	758.1	68.9	20.5	55	SW					8	W		0.035	0.9		Prof. Dr. Schoder.
Thorn	29.77	756.2	29.96	761.0	75.9	24.4	49	S			4		7			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.45	722.6	30.02	762.6	72.9	22.7	53	WNW	3.6	1.6			8k		W	0.024	0.6		Reallehrer J. Hopfner.
Wustrow	29.82	757.5	29.85	758.2	64.4	18.0	75	N			4		8s			0.039	1.0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.9	29.94	760.4	88.0	31.1		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.45	748.1	29.50	749.4	85.3	29.6	87	SW	19.7	8.8			3	W		0	0		D. clouds
Deesa	29.04	737.6	29.50	749.2	92.0	33.3	48	S	23.5	10.5			4	NNW	WSW	0	0		D. clouds
Bombay	29.67	753.5	29.70	754.5	86.7	30.4	70	W	19.0	8.5			3		SW	0.01	0.3		D. clouds
Poona (Yarrowda)	27.86	707.6	29.69	754.2	82.3	27.9	54	WSW	26.0	11.2			4	Calm	W	0	0		D. clouds
Belgaum	27.22	691.5	29.77	756.1	72.6	22.6	81	WSW	7.0	3.1			9	E	SW	0.06	1.5		D. clouds
Lahore	28.59	726.3	29.28	743.8	111.3	44.0	16	SW	3.2	1.4			0			0	0		Blue sky
Roorkee	28.43	722.2	29.27	743.4	107.3	41.8	15	W	6.0	2.7						0	0		Very sultry.
Agra	28.85	732.7	29.38	746.2	104.6	40.3	29	W	8.4	3.8			4		E	0	0		
Nagpur	28.48	723.2	29.47	748.5	99.7	37.6	25	NW	6.4	2.9			9		E	0.06	1.5		D. clouds
Jubbulpore	28.15	715.1	29.46	748.4	95.3	35.2	42	NW	4.3	1.9			5			0	0		D. clouds
Lucknow	29.02	737.1	29.38	746.2	100.9	38.3	50	ENE	5.4	2.0						0	0		Blue sky
Allahabad	29.10	739.0	29.39	746.6	93.7	34.3	52	Calm	7.3	3.3			8			0.11	2.8		D. clouds
Patna	29.27	743.5	29.45	747.9	92.1	33.4	57	ENE	2.2	1.0			8	NE	NE	0	0		D. clouds
Hazaribagh	27.53	699.3	29.53	750.1	75.8	24.3	85	SE	10.1	4.5			10			2.39	60.7		Thunder-storm.
Cuttack	29.45	747.9	29.53	750.0	82.8	28.2	70	SSW	1.5	0.7			8			0	0		D. clouds
Calcutta (Alipore)	29.47	748.6	29.49	749.1	84.5	29.2	91	ENE	2.0	0.9			9	NE		0.42	10.7		D. clouds
Goalpara	29.12	739.6	29.52	749.9	79.1	26.2	94	Calm	3.0	1.3			8			0.91	23.1		D. clouds
Chittagong	29.46	748.2	29.55	750.5	84.7	29.3	83	S	5.7	2.6			9			0	0		D. clouds
Sibsagar	29.22	742.1	29.55	750.5	84.2	29.0	84	NE	1.6	0.7			8	W	W	0	0		D. clouds

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.65	753.1	30.05	763.3	75.2	24.0	57	S	4.3	1.9			1			0	0		Prof. Giovanni Clodig.
Milan	29.52	749.7	30.02	762.4	75.4	24.1	43	SSW	4.3	1.9			7	W		0	0		Prof. Schiaparelli.
Padua	29.92	759.9	30.03	762.7	76.3	24.6	61	WNW	3.1	1.4			6	WSW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.13	739.8	30.02	762.5	70.2	21.2	65	E	3.1	1.4			8	NNE		0	0		Prof. P. F. Denza.
Genoa	29.91	759.8	30.11	764.7	68.5	20.3	68	SW	7.4	3.3			2	S		0	0		Prof. G. M. Garibaldi.
Mondovi	28.14	714.7	30.01	762.3	69.4	20.8	52	NW			2		4			0	0		Prof. D. C. Bruno.
Pesaro	30.03	762.7	30.08	763.9	71.6	22.0	66	NE	8.7	3.9			1	W		0	0		Prof. Luigi Guidi.
Florence	29.81	757.2	30.07	763.7	77.0	25.0	52	SW			2		1			0	0		Cav. F. Meucci.
Leghorn	30.04	763.0	30.12	765.1	72.5	22.5	63	S	9.8	4.4			2			0	0		Prof. P. Monte.
Rome	29.93	760.2	30.10	764.6	76.5	24.7	51	WSW	1.8	0.8			1			0	0		Prof. P. S. Ferrari.
Lecce	29.82	757.5	30.07	763.8	78.1	25.6	38	SSW	8.1	3.6			1			0	0		Prof. C. De Giorgi.
Cosenza	29.19	741.5	30.05	763.2	84.6	29.2	67	SE	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.82	757.5	30.02	762 4	74.5	23.6	57	SE			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.87	758.8	30.12	765.1	72.7	22.6	68	ENE	6.9	3.1			0			0	0		Prof. G. Ciaccia'tore.
Syracuse	29.99	761.8	30.04	762.9	81.5	27.5	45	S	11.2	5.0			0			0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.56	750.9	30.08	763.9	71.2	21.8	64	SW	0	0			0			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					69.1	20.6	79	W	1.7	0.7			3s			0	0	Clear.	K. Sasaki.
Nagasaki, I. M. Obs'y	29.66	753.3	29.86	758.4	66.7	19.3	87	WSW	0.5	0.2			2s			0	0	Foggy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.83	757.7	29.89	759.2	66.9	19.4	88	S	3.0	1.3			10s			0.030	0.76	Cloudy	The Staff.
Wakayama	29.82	757.4	29.87	758 7	70.8	21.6	74	S	4.5	2.0			10s			0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.4	30.02	762.6	57.2	14.0	72	W			1		10n			1.02	26.0	Covered.	Prof. L. Perez.
Guanaxuato	23.61	599.9			63 5	17.2	82	Calm	0	0		10n	2n	Calm		0.61	15.6	Covered	Vicente Fernandez.
Leon	24.37	619.0	29.98	761.4	63.9	17.7	90	S			2		10n		SE	2.26	57.4	Raining	Prof. M. Leal.
Mazatlan	29.61	752.1	29.87	758.7	75.8	24.3	91	SE			2	7k	0	SE		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	28.04	585.2	29.96	761.0	57.9	14.4	85	Calm	0	0			10n			0.25	6.3	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.90	607.0	29.79	756.7	63.1	17.3	88	Calm			0		10kn			0.59	15.0	Covered	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.41	594.7	30.11	764.9	57.0	13.9	51	Calm	0	0		8k	0	E		1.08	27.5	Clear	Prof. P. Spina.
San Luis Potosi	24.16	613.3	29.98	761.6	66.2	19.0	79	E			1	5	0	W		3.81	96.8	½ clouded	G. Barroeta, M D.
Tlacotalpam	29.78	756.3	29.79	756.6	81.1	27.3	83	S			3	7	0	S		0	0	Almost cld'y	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.54	572.4	30.06	763.5	60.4	15.8	83	Calm			0	9ck	0	NE		0	0	Very cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,599.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.90	759.4	29.90	759.4	61.5	16.7		NNE			2					0.402	10.2		
Groningen	29.83	757.7	29.89	759.1	56.1	13.4		NE			1					0.327	8.3		
Helder	29.88	759.0	29.88	759.0	55.4	13.0		NE			1					0	0		
Hellevoetsluis	29.88	758.9	29.88	758.9	61.7	16.5	76	NW			1					0.374	9.5		
Utrecht	29.85	758.1	29.89	759.3	61.3	16.3	71	NNE			1		8			0.008	0.2	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.77	756.2	29.83	757.6	52.9	11.6	57	W	9.8	4.4			2			0	0		
Brönö	29.78	756.4	29.82	757.4	49.6	9.8	57	SW	9	4			8			0.012	0.3		
Christiania	29.61	752.2	29.76	755.9	50.9	10.5	72	NNW	9	4			10			0.004	0.1	Raining	
Tromsö	29.69	754.1	29.74	755.5	52.5	11.4	51	SE	7	3			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.17	766.2	30.37	771.5	66.2	19.0	86	WNW			2		2			0	0		Dr. J. A. Sampaio.
Campo Major	28.96	735.5	29.94	760.5	64.8	18.2	65	SW	6.9	3.1			8			0.051	1.3		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.13	765.2	30.21	767.4	66.6	19.2	78	SW	7.4	3.3			8			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.70	754.3	30.06	763.4	63.5	17.5	51	WNW	18.6	8.3			6			0.130	3.3		The Staff.
Ponta Delgada (Azores)	30.27	765.9	30.34	770.7	69.1	20.6	57	SW	9.8	4.4			6			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																				
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.93	760.1	74.8	23.8		W			2		3		W	1	W		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			30.08	764.0	67.6	19.8		NNW			3		8		NW	2	NW		Gloomy	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.87	758.8	86.4	30.2		NE			1		5		NE				D. clouds	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.74	755.4	29.76	755.9	57.0	13.9	66	WNW	9	4			8ks						Capt. Sseliwerstow.
Astrakhan	30.16	766.0	30.08	763.9	84.7	29.3	30	SE	7	3			1s						Capt. Wisganow.
Barnaul	29.34	745.2	29.82	757.4	69.3	20.7	59	NE	2	1			3						Meteorological Obs.
Dorpat	29.82	757.5	30.06	763.5	62.6	17.0	45	WSW	9	4			5k						Prof. Dr. Weihrauch.
Ekaterinburg	28.96	735.5	29.89	759.3	64.6	18.1	51	W	27	12		ck	7ks						Meteorological Obs.
Irkutsk																			
Kasan	29.82	757.4	30.08	764.0	70.2	21.2	43	W	4	2			2k						Physical Cabinet.
Kertch	29.93	760.2	29.95	760.7	75.9	24.4	72	N	7	3			3						Lagorio.
Kieff	29.38	746.3	29.98	761.6	75.4	24.1	62	ESE	4	2			8cks;n						Physical Cabinet.
Krotkowo*	29.72	754.8	30.17	766.2	73.8	23.2	40	NW	0.2	0.1			2s						Cand. Fatjanow.
Lugan	29.76	755.8	29.95	760.7	83.8	28.8	30	ENE	22	10			6					Light clouds	Meteorological Obs.
Moscow	29.68	751.4	30.11	764.8	72.5	22.5	52	WSW	7.8	3.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.95	760.8	30.02	762.6	76.8	24.9	62	SSW	9	4			10cs;n						Kurdakof.
Nikolaievsk, on the Amoor	29.78	756.4	29.87	758.6	50.2	10.1	87	SE	11	5		4ck							
Nukuss																			
Orenburg																			
Pekin (China)	29.68	753.8	29.82	757.4	77.7	25.4	43	Calm	0	0			1s						Physical Observatory.
St. Petersburg	29.98	761.5	30.00	761.9	56.7	13.7	67	WNW	20	9			3cs;k						Central Physical Obs.
Tashkend	28.26	717.9	29.73	755.1	84.9	29.4	53	Calm	0	0			0						Teich, A. M.
Tiflis	28.61	726.8	29.95	760.8	83.7	28.7	31	E	4	2			0						Physical Observatory.
Vladivostock																			
Warsaw	29.60	751.9	30.00	762.1	76.3	24.6	47	SSE	9	4			4k						Astronomical Obs.
Wilna	29.68	753.9	30.09	764.2	70.2	21.2	48	S	4	2			3						Astronomical Obs.
Yeniseisk	29.78	756.4	30.07	763.6	60.8	15.7	48	ESE	4	2			0						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.76	755.9	29.86	758.5	71.6	22	60	SSE	3.0	1.33			1			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.80	756.8	29.85	758.2	69.8	21.0	65	N	2.1	0.95		2	8	W		0	0	Covered	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.91	683.4			62.6	17.0	58	W	11.2	5.00			9			0	0	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.70	703.5	29.85	758.3	70.2	21.2	38	SW	19.0	8.23		0	4			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.72	755.0	29.87	758.7	82.4	28.0	56	S	1.9	0.83		5	5	NW		0.005	0.13	Covered	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.94	735.1	29.84	757.8	56.1	13.4	85	WSW	11.9	5.3			10			0.689	17.5	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.1	30.07	763.7	77.1	25.1	90	E	2.7	1.2		10cs	0	W		1.382	35.1	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands.	29.77	756.2	29.82	757.5	84.2	29.0	82	E	0	0			1s			0	0	Fine	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.01	762.2	30.10	764.6	67.6	19.8	55	WSW	11.7	5.3		0	6		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.6	30.11	764.9	82.0	27.8	86	E	9.2	4.13		2s	2k		E	0.020	0.50	Clear.	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.77	756.2	29.81	757.2	57.2	14.0		SW			2		0			0	0		
Umea	29.80	756.8	29.85	758.1	54.3	12.4	63	SW			2		7			0	0		
Hernosand	29.78	756.5	29.84	757.8	57.2	14.0	59	SSE			2		5			0	0		
Stockholm	29.73	755.2	29.91	759.7	54.0	12.2	59	SW			4		10			0.071	1.8		
Wisby	29.84	757.9	29.90	759.4	54.0	12.2	82	SSE			4		7			0.165	4.2		
Sub-Series.																			
Upsala	29.74	755.3	29.82	757.5	55.4	13.0	66	SSW	17.0	7.6			8	SW		0.012	0.30		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia					J. P. Pahlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 39° 07′, W. 16° 31′				Overcast	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.60	724.0	29.91	759.7	61.0	16.1	65	N			3		2			0.134	3.4	Clear	The Observatory.
Zurich	28.37	720.6	29.96	761.0	68.2	20.1	64	W			1		4			0	0	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, −2.3 mm.; Thermometer, −3.9 Cent. Relative Humidity, +9 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.91	759.7	75.2	24.0	55	N	19	8.5			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.13	765.2	79.0	26.1		W			1		2			0	0	Slightly cld'y	A. Bertrand.
Sub-series.																			
Beirut, (Syria) Lee Obs'y			29.75	755.6	84.0	28.9	61	NNE			1		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					56.0	13.3		Calm	0	0			Fog			0	0	Foggy	Hon. J. Ferguson.
Chatham, N. B.	30.05	763.3	30.11	764.8	61.2	16.2	85	E	1	0.4		0	0			0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	30.10	764.5	30.14	765.5	52.3	11.3	92	Calm	0	0			10s			0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.88	758.9	30.06	763.5	65.8	18.8	78	S			1	2cs	0	N		0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.97	761.2	30.13	765.3	56.6	13.7	90	W			2	0	1ks			0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.13	765.3	30.16	766.1	46.5	8.1	66	NW	2	0.9		3k	2ks	Calm		0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	30.09	764.3	30.16	766.1	61.0	16.1	77	E	1	0.4		1ck	0			0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	28.96	735.5	29.75	755.6	60.0	15.6	91	SW	2	0.9		2cs	2ks	SW		0.070	1.78	Fair	James Stewart.
Granton, Ontario	28.89	733.8	29.95	760.7	65.0	18.3	89	SE			1		10n			0	0	Cloudy	James Grant.
Halifax, N. S.	30.02	762.5	30.15	765.8	61.9	16.6	74	N	4	1.8		0	0			0	0	Clear.	A. Allison.
Hamilton, Ontario	29.66	753.4	30.04	763.0	59.9	15.5	84	NE			1	10cs	0	NE		0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.74	755.4	30.07	763.8	67.5	19.7	76	SE	5	2.2		0	0			0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	30.08	764.0	30.12	765.0	47.6	8.7	96	E	5	2.2			Fog			0	0	Foggy	C. H. Rigby.
Montreal, Quebec	29.92	760.0	30.11	764.8	64.8	18.2	79	E	2	0.9		3c	Sm'e			0	0	Fair	C. H. McLeod, C. E.
Moose Factory, Ontario	30.06	763.5	30.09	764.3	61.5	16.4	83	Calm			0		10n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario																			Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.32	744.7	29.99	761.7	65.0	18.3	70	E	11	4.9		2k	1ks	W		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.33	745.0	30.05	763.3	70.7	21.5	75	Calm			0	8k	0			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.34	745.2	30.01	762.2	66.1	18.9	95	Calm	0	0		10k	0	W		0	0	Cloudy	H. Morgan.
Port Stanley, Ontario	29.36	745.7	29.99	761.7	64.0	17.8	90	E	9	4.0			10ks			Inap.	Inap.	Cloudy	M. Payne.
Quebec, Quebec	29.86	758.4	30.18	766.6	59.0	15.0	88	Calm			0	0	Haze			Inap.	Inap.	Hazy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.63	752.6	30.08	764.0	54.5	12.5	87	Calm	0	0		8ck	0	W		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.97	761.2	30.13	765.3	65.0	18.3	73	SE	3	1.3		0	0			0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.26	743.2	29.96	761.0	64.2	17.9	82	SE	11	4.9			10ks			0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.68	728.5	29.93	760.2	62.1	16.7	95	SE	6	2.7			10s			0	0	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	30.09	764.3	30.13	765.3	50.5	10.3	94	NE	2	0.9			10n			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.67	753.6	30.05	763.3	64.0	17.8	79	E	4	1.8		7cs	Haze	SW		0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.93	734.8	29.97	761.2	64.1	17.8	92	SE	7	3.1			10ks	SW		0	0	Cloudy	Professor Wolverton.
Yarmouth, N. S.	30.08	764.0	30.14	765.5	57.1	13.9	81	Calm	0	0		0	0			0	0	Clear.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.88	758.9	30.13	765.3	46	7.8	96	Calm	0	0			Fog			0.55	14.0	Foggy	John Delany.
St. Pierre, N. F., l'Hopital Maritime			30.00	762.0	52.9	11.6		SE			1					0	0		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the SECRETARY OF WAR.

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.11	764.8	30.19	766.8	66	18.9	74	S	7	3.1			10s		S	0	0	Cloudy	
Alpena, Michigan	29.26	743.2	29.88	758.9	57	13.9	94	E	10	4.5			10s		Calm	0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.98	736.1	30.07	763.8	80	26.7	66	S	2	0.9		8c;ck	0	Calm		0	0	Fair	
Atlantic City, New Jersey	30.23	767.8	30.25	768.3	60	15.6	100	NE	3	1.3		2c	2s;fg	W	W;Calm	Inap.	Inap.	Fair	
August., Georgia	30.00	762.0	30.19	766.8	79	26.1	78	SE				5cs	0	SE		0	0	Fair	
Baltimore, Maryland	30.16	766.1	30.21	767.3	66	18.9	89	SE	5	2.2			10s;fg		SE;Calm	0.02	0.5	Cloudy	
Barnegat, New Jersey	30.20	767.1	30.22	767.6	64	17.8	83	N	2	0.9		0	Fog		N	0	0	Foggy	
Bismarck, Dakota	27.94	709.7	29.79	756.7	53	11.7	93	E	6	2.7		10cs	0	S		0.28	7.1	Cloudy	
Boerne, Texas	28.39	721.1	29.63	752.6	76	24.4	91	SE	8	3.6		5k	8ks	SE	SE	0	0	Cloudy	
Boise City, Idaho	27.04	686.8	30.00	762.0	44	6.7	79	SE	2	0.9			10s		Calm	0	0	Cloudy	
Boston, Massachusetts	30.08	764.0	30.23	767.8	63	17.2	72	W	5	2.2		5c	0	NW		0	0	Fair	
Brackettville, Texas	28.62	726.9	29.61	752.1	78	25.6	73	SE	15	6.7		0	0			0	0	Clear	
Breckenridge, Minnesota	28.74	730.0	29.70	754.4	60	15.6	88	NE	4	1.8			10s		E	0.07	1.8	Cloudy	
Brownsville, Texas	29.76	755.9	29.80	756.9	84	28.9	75	SE	4	1.8		2cs	0	Calm		0	0	Clear	
Buffalo, New York	29.34	745.2	30.01	762.2	71	21.7	71	S	5	2.2		8c	Haze	Calm	Calm	0	0	Clear	
Burkes, Arizona					66	18.9	23	SW			1	0	0			0	0	Clear	
Burlington, Vermont	29.86	758.4	30.14	765.5	66	18.9	69	SW	11	4.9		0	0			0	0	Clear	
Cairo, Illinois	29.64	752.8	30.01	762.2	80	26.7	70	S	7	3.1		2c	0	Calm		0	0	Fair	
Campo, California	27.20	690.9	29.77	756.1	53	11.7	80	SW	4	1.8			10s		SW	0	0	Cloudy	
Cape Hatteras, N. Carolina	30.20	767.1	30.20	767.1	69	20.6	90	NE	7	3.1		5k	5s	E	NE	0.02	0.5	Cloudy	
Cape Henry, Virginia	30.17	766.3	30.18	766.6	68	20.0	84	S	5	2.2			10s		S	0	0	Cloudy	
Cape Lookout, N. Carolina	30.16	766.1	30.17	766.3	75	23.9	81	SE	8	3.6		8c	Haze	W	Calm	0	0	Cloudy	
Cape May, New Jersey	30.19	766.8	30.22	767.6	65	18.3	78	SE	5	2.2			10s		S	0	0	Cloudy	
Castroville, Texas	29.02	737.1	29.68	753.9	80	26.7	74	SE	9	4.0			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.10	764.5	30.12	765.0	83	28.3	75	SE	7	3.1		1cs	2ks	Calm	SE	0	0	Fair	
Charleston, South Carolina	30.09	764.3	30.14	765.5	80	26.7	82	W	4	1.8		0	8ks		W	0	0	Cloudy	
Charlotte, North Carolina	29.34	745.2	30.13	765.3	68	20.0	90	SE	4	1.8			10s		S	0.66	16.8	Cloudy	
Chattanooga, Tennessee	29.34	745.2	30.11	764.8	76	24.4	82	Calm	0	0		0	Sm'e		Calm	0.13	3.3	Clear	
Cheyenne, Wyoming	23.91	607.3	29.85	758.2	40	4.4	91	NW	6	2.7			10n		Calm	0.18	4.6	Light rain	
Chicago, Illinois	29.18	741.1	29.82	757.4	76	24.4	82	SW	8	3.6		0	0			0.07	1.8	Clear	
Chincoteague, Virginia	30.20	767.1	30.22	767.6	63	17.2	96	SE	7	3.1			10n		SE	Inap.	Inap.	Light rain	
Cincinnati, Ohio	29.42	747.3	30.04	762.0	73	22.8	83	SE	4	1.8		4cs	0	Calm		1.39	35.3	Fair	
Cleveland, Ohio	29.28	743.7	29.97	761.2	69	20.6	85	SE	9	4.0			10ks		SW	0.26	6.6	Threatening	
Coleman City, Texas	28.02	711.7	29.59	751.6	75	23.9	77	SE	12	5.4		0	0			0	0	Clear	
Columbus, Ohio	29.20	741.7	30.00	762.0	69	20.6	85	S	5	2.2		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	27.90	708.6	29.48	748.8	77	25.0	65	SE	16	7.2		5k	0	S		0	0	Fair	
Corsicana, Texas	29.45	748.0	29.89	759.2	79	26.1	82	S	8	3.6		0	5ks		SE	0	0	Fair	
Davenport, Iowa	29.19	741.4	29.79	756.7	76	24.4	82	S	11	4.9			10s		SW	0	0	Cloudy	
Dayton, Washington T'y					44	6.7	92	S			4		10n		Calm	0.07	1.8	Light rain	
Deadwood, Dakota	25.14	638.5			54	12.2	26	SW	12	5.4		0	0			0	0	Clear	
Decatur, Texas	28.70	729.0	29.80	756.9	76	24.4	86	SE	15	6.7			10s		S	0	0	Cloudy	
Delaware Breakwater, Del.	30.20	767.1	30.23	767.8	62	16.7	88	S	4	1.8			10s		W	Inap.	Inap.	Cloudy	
Denison, Texas	29.10	739.1	29.84	757.9	78	25.6	82	S	8	3.6		5k	0	S		0	0	Fair	
Denver, Colorado	24.64	625.8	29.86	758.4	51	10.6	86	NE	2	0.9			10n		Calm	0.02	0.5	Light rain	
Des Moines, Iowa	28.87	733.3	29.69	754.1	75	23.9	86	SW	6	2.7		0	5s		SW	1.27	32.3	Fair	
Detroit, Michigan	29.30	744.2	29.94	760.5	66	18.9	89	S	4	1.8			10s		SW	0	0	Cloudy	
Dodge City, Kansas	27.04	686.8	29.14	740.1	76	24.4	64	S	24	10.7		0	0			0	0	Clear	
Dubuque, Iowa	29.10	739.1	29.75	755.6	77	25.0	82	S	8	3.6		8k	Haze	SW	Calm	0	0	Fair	
Duluth, Minnesota	29.10	739.1	29.77	756.1	48	8.9	100	NE	6	2.7			10n;fog		Calm	0.93	23.6	Light rain	
Eagle Pass, Texas	28.98	736.1	29.66	753.4	81	27.2	67	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	30.07	763.8	30.14	765.5	63	17.2	72	N	2	0.9		0	0			0	0	Clear	
Edinburg, Texas					83	28.3	91	SE			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.31	744.5	30.00	762.0	69	20.6	80	S	9	4.0			10n		Calm	0.15	3.8	Heavy rain	
Escanaba, Michigan	29.17	740.9	29.80	756.9	63	17.2	89	Calm	0	0			10s		SE	0.15	3.8	Cloudy	
Florence, Arizona					63	17.2	57	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	24.81	630.2	30.26	768.6	62	16.7	32	S	6	2.7		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.69	703.3	29.47	748.5	51	10.6	86	NE	6	2.7		0	0			0	0	Clear	
Fort Custer, Montana	26.68	673.8			49	9.4	50	SW	8	3.6		0	0			0	0	Clear	
Fort Davis, Texas	25.05	636.3	30.01	762.2	71	21.7	48	W	3	1.3		1ck	0	Calm		0	0	Clear	
Fort Elliot, Texas	26.77	680.0	28.86	733.0	72	22.2	80	SE	24	10.7		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.34	745.2	29.85	758.2	78	25.6	73	S	12	5.4		0	5s		S	0	0	Fair	
Fort Grant, Arizona	25.02	635.5	29.82	757.4	68	20.0	22	N	5	2.2		0	0			0	0	Clear	
Fort Griffin, Texas	28.54	724.9	29.74	755.4	75	23.9	77	S	8	3.6		0	8s		Calm	0	0	Cloudy	
Fort Keogh, Montana	26.96	684.8			46	7.8	77	E	1	0.4		0	0			0	0	Clear	
Fort McKavett, Texas	27.56	700.0	29.36	745.7	74	23.3	76	S	14	6.3		0	1ks		S	0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.59	726.2	29.63	752.6	76	24.4	77	S	24	10.7		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.94	709.7			51	10.6	86	E	8	3.6		5k	0	Calm		0	0	Fair	
Fort Verde, Arizona					66	18.9	50	S			4	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.85	758.2	29.89	759.2	78	25.6	91	SE	15	6.7			10n		SE	0.41	10.4	Heavy rain	
Grand Haven, Michigan	29.22	742.2	29.83	757.7	72	22.2	85	SE	20	8.9		5k	0	SE		0.20	5.1	Fair	
Helena, Montana					42	5.6	83	SW	15	6.7			10s		Calm	0.12	3.0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.19	741.4	29.93	760.2	77	25.0	82	S	7	3.1		10cs	0	Calm		1.30	33.0	Cloudy	
Indianola, Texas	29.88	757.7	29.86	758.4	83	28.3	79	S	8	3.6		5k	0	S		0	0	Fair	
Jacksboro, Texas	28.71	729.2	29.76	755.9	70	21.1	75	SE	20	8.9		0	0			0	0	Clear	
Jacksonville, Florida	30.12	765.0	30.14	765.5	80	26.7	74	S	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.18	741.1	29.75	755.6	79	26.1	74	SW	15	6.7		2c	0	Calm		0	0	Clear	
Key West, Florida	30.06	763.5	30.09	764.3	82	27.8	79	SE	8	3.6		10k	0	SE		0	0	Cloudy	
Kittyhawk, North Carolina	30.20	767.1	30.23	767.8	68	20.0	90	E	8	3.6			10s		E	0	0	Cloudy	
Knoxville, Tennessee	29.15	740.4	30.11	764.8	78	25.6	73	SW	2	0.9		0	0			0	0	Clear	
La Crosse, Wisconsin	29.00	736.6	29.68	753.9	72	22.2	90	S	4	1.8			10s		Calm	0.02	0.5	Threatening	
La Mesilla, New Mexico	25.91	658.1	30.06	763.5	65	18.3	35	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.84	745.2	29.67	753.6	72	22.2	90	Calm	0	0		1ck	0	SE		0.08	2.0	Clear	
Leavenworth, Kansas	28.91	734.3	29.70	754.4	75	23.9	77	S	14	6.3		1k	0	S		0	0	Clear	
Lewiston, Idaho	29.09	738.9	29.73	755.1	50	10.0	100	S	2	0.9			10n		Calm	0.10	2.5	Light rain	
Little Rock, Arkansas	29.65	753.1	29.95	760.7	78	25.6	86	S	8	3.6		5k	0	SW		0	0	Fair	
Los Angeles, California	29.47	748.5	29.80	756.9	58	14.4	88	SW	2	0.9		0	2s		S	0	0	Fair	
Louisville, Kentucky	29.48	748.8	30.01	762.2	81	27.2	67	S	7	3.1		2c	0	Calm		Inap.	Inap.	Clear	
Lynchburg, Virginia	29.49	749.0	30.15	765.8	70	21.1	90	N	3	1.3			10n			0.78	19.8	Light rain	
Madison, Wisconsin	28.82	732.0	29.74	755.4	75	23.9	86	S	11	4.9		5cs	0	SW		Inap.	Inap.	Fair	
Marquette, Michigan	29.10	739.1	29.77	756.1	63	17.2	72	S	1	0.4		2c	0	S		0.02	0.5	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.19	716.0	29.85	758.2	76	24.4	82	SE	9	4.0		5k	0	SE		0	0	Fair	
Memphis, Tennessee	29.65	753.1	29.97	761.2	82	27.8	71	SW	9	4.0		2k	0	S		0	0	Clear	
Milwaukee, Wisconsin	29.08	738.6	29.76	755.9	76	24.4	82	SW	11	4.9		1cs	Haze	Calm		0.05	1.3	Dense haze	
Mobile, Alabama	30.04	763.0	30.08	764.0	81	27.2	87	SE	6	2.7		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.90	759.4	30.12	765.0	79	26.1	82	S	1	0.4		8k	0	W		0	0	Fair	
Morgantown, West Virginia	29.11	739.4	30.06	763.5	69	20.6	90	Calm	0	0			10ks		SW	0.04	1.0	Cloudy	
Mt Washington, N. H.	24.03	610.4	30.39	771.9	48	8.9	77	NE	1	0.4		5c;k	2s	NW;SE	Calm	0.10	2.5	Cloudy	
Nashville, Tennessee	29.57	751.1	30.08	764.0	82	27.8	63	S	2	0.9		0	0			0	0	Clear	
New Haven, Connecticut	30.11	764.8	30.22	767.6	69	20.6	70	SW	2	0.9		5k	Sm'e	SW	Calm	0	0	Fair	
New London, Connecticut	30.18	766.6	30.23	767.8	61	16.1	77	N	1	0.4		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	81	27.2	78	SE	7	3.1		1c	Haze	Calm	Calm	Inap.	Inap.	Clear	
Newport, Rhode Island	30.17	766.3	30.22	767.6	60	15.6	71	NE	5	2.2		0	0			0	0	Clear	
New River, North Carolina					73	22.8	90	E			1		10s		E			Cloudy	
New York, New York	30.04	763.0	30.22	767.6	62	16.7	87	SW	4	1.8		2cs	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.14	765.5	30.20	767.1	71	21.7	75	S	2	0.9			10s		NW	0.01	0.3	Cloudy	
North Platte, Nebraska	26.84	681.7	29.30	744.2	58	14.4	76	NE	12	5.4			10s		Calm	0.	0	Cloudy	
Olympia, Washington Ter.	30.07	763.8	30.11	764.8	45.0	7.2	88	S	1	0.4		10k	0	N		Inap.	Inap.	Cloudy	
Omaha, Nebraska	28.54	724.9	29.55	750.6	77	25.0	82	S	14	6.3		0	8s		SW	0.06	1.5	Fair	
Oswego, New York	29.80	756.9	30.11	764.8	68	20.0	74	SE	6	2.7		1c	Haze	Calm		0	0	Clear	
Pembina, Dakota	28.89	733.8	29.69	754.1	57	13.9	81	SW	5	2.2		5c	0	SW		0	0	Fair	
Pensacola, Florida	30.06	763.5	30.09	764.3	82	27.8	75	S	6	2.7		4k	0	S		0	0	Fair	
Philadelphia, Pennsylvania	30.19	766.8	30.24	768.1	65	18.3	78	SE	6	2.7		5ck	0	SW		0	0	Fair	
Phœnix, Arizona	28.50	723.9	30.22	767.6	67	19.4	55	E	1	0.4			10s		Calm	0	0	Cloudy	
Pike's Peak, Colorado	17.67	448.8	29.88	758.9	27	— 2.8	42	SW	28	12.5		0	0			0	0	Clear	
Pilot Point, Texas	29.09	738.9	29.90	759.4	77	25.0	82	S	14	6.3		8k	0	S		0	0	Fair	
Pioche, Nevada	23.79	604.3	29.56	750.8	37	2.8	81	N	7	3.1		0	8s		NE	0	0	Fair	
Pittsburg, Pennsylvania	29.27	743.4	30.05	763.3	68	20.0	84	NE	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Port Huron, Michigan	29.28	743.7	29.92	760.0	65	18.3	89	S	8	3.6			10s		SW	0	0	Threatening	
Portland, Maine	30.14	765.5	30.19	766.8	59	15.0	82	SW	3	1.3		0	2s		Calm	0.28	7.1	Clear	
Portland, Oregon	30.09	764.3	30.16	766.1	49.5	9.7	75	SW	3	1.3			10s		NW	0.08	2.0	Cloudy	
Portsmouth, North Carolina					72	22.2	85	NE	3	1.3		10cs	0	Calm		0	0	Cloudy	
Prescott, Arizona	24.48	621.8	29.84	757.9	61	16.1	94	S	19	8.5		0	0			0	0	Clear	
Punta Rassa, Florida	30.07	763.8	30.09	764.3	80	26.7	78	E	10	4.5		6c;k	0	W;Calm		0	0	Fair	
Red Bluff, California	29.58	751.3	29.94	760.5	57.0	13.9	47	N	22	9.8		0	0			0	0	Clear	
Rio Grande City, Texas																			
Rochester, New York	29.44	747.8	30.03	762.7	70	21.1	75	SW	3	1.3		0	Haze		Calm	0	0	Light haze	
Roseburg, Oregon	29.64	752.8	30.22	767.6	47	8.3	85	Calm	0	0			10n		N	0.04	1.0	Light rain	
Sacramento, California	29.76	755.9	29.83	757.7	61.5	16.4	48	NW	18	8.0		0	0			0	0	Clear	
St. Louis, Missouri	29.37	746.0	29.92	760.0	77	25.0	77	S	10	4.5		2c	0	Calm		0.06	1.5	Fair	
St. Paul, Minnesota	28.92	734.6	29.71	754.6	64	17.8	100	NW	2	0.9			10n		NW	0.05	1.3	Light rain	
Salt Lake City, Utah	25.40	645.2	29.73	755.1	48	8.9	43	SE	2	0.9			10s		Calm	Inap.	Inap.	Cloudy	
San Antonio, Texas	29.14	740.1	29.80	756.9	78	25.6	86	SE	6	2.7		0	8s		S	0	0	Fair	
San Diego, California	29.76	755.9	29.84	757.9	60	15.6	77	SW	6	2.7			10ks		SW	0	0	Cloudy	
Sandusky, Ohio	29.30	744.2	29.94	760.5	73	22.8	81	S	12	5.4		5c	0	Calm		0.01	0.3	Fair	
Sandy Hook, New Jersey	30.20	767.1	30.24	768.1	70	21.1	66	W	4	1.8		0	0			0	0	Clear	
San Francisco, California	29.84	757.9	29.90	759.4	53	11.7	80	SW	1	0.4		0	0			0	0	Clear	
Santa Fé, New Mexico	23.10	586.7	29.64	752.8	59	15.0	23	E	5	2.2		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.08	764.0	30.16	766.1	79	26.1	91	Calm	0	0		8cs	Fog	SE	Calm	Inap.	Inap.	Fair	
Shreveport, Louisiana	29.74	755.4	29.95	760.7	80	26.7	78	SE	5	2.2		2k	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.14	765.5	30.18	766.6	76	24.4	86	Calm	0	0		5k	2s	SW	Calm	0	0	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.27	743.4	29.90	759.4	76	24.4	82	S	12	5.4		1c	0	W		0.30	7.6	Clear	
Springfield, Massachusetts	30.10	764.5	30.24	768.1	57	13.9	87	S	1	0.4			Fog			0	0	Dense fog	
Stockton, Texas	26.76	679.7	29.76	755.9	74	23.3	59	SE	14	6.3		2cs	0	SE		0.39	9.9	Clear	
Thatcher's Island, Mass	30.16	766.1	30.21	767.3	62	16.7	77	SW	12	5.4		5k	0	SW		0	0	Fair	
Toledo, Ohio	29.27	743.4	29.92	760.0	71	21.7	85	SW	10	4.5			10ks		SW	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.26	692.4	29.81	757.2	79	26.1	27	SE	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.62	752.3	30.11	764.8	53	11.7	54	SW	20	8.9			10s		SW	0	0	Cloudy	
Uvalde, Texas	28.84	732.5	29.62	752.3	79	26.1	82	SE	6	2.7			10s		S	0	0	Cloudy	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	79	26.1	82	S	4	1.8		0	1s		S	0	0	Clear	
Virginia City, Montana	24.02	610.1	29.50	749.3	35	1.7	90	Calm	0	0			10n		Calm	0.04	1.0	Light rain	
Visalia, California	29.43	747.5	29.79	756.7	52	11.1	60	W	4	1.8		0	0			0	0	Clear	
Washington, D. C.	30.09	764.3	30.20	767.1	65	18.3	94	SE	6	2.7			10n		SE	0.04	1.0	Light rain	
Wickenburg, Arizona					66	18.9	50	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.09	764.3	30.17	766.3	73	22.8	90	Calm	0	0			10s		Calm	0	0	Cloudy	
Winnemucca, Nevada	25.54	648.7	29.90	759.4	34	1.1	61	E	6	2.7		2ck	0	N		0	0	Clear	
Wood's Holl, Massachusetts	30.18	766.6	30.22	767.6	57	13.9	87	N	6	2.7			10s		Calm	0.02	0.5	Cloudy	
Yankton, Dakota	28.43	722.1	29.67	753.6	60	15.6	88	N	4	1.8			10ks		Calm	0.23	5.8	Cloudy	
Yuma, Arizona	29.47	748.5	29.61	752.1	68	20.0	56	NW	3	1.3		0	Haze		Calm	0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	21.99	558.5			56.0	13.3	75	W	2	0.9			10ks			0.02	0.5	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.04	763.0	30.09	764.3	78	25.6	86	Calm	0	0		8cs	0	Calm		1.21	30.7	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	80	26.7	79	Calm	0	0		2c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.94	760.5	30.02	762.5	82	27.8	79	NE	3	1.3		5k	5s	E	NE	Inap.	Inap.	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.04	763.0	30.04	763.0	78	25.6	86	E			2		8ks		E	0.160	4.06	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.35	745.5	29.91	759.7	80	26.7	90	Calm			0		10ks			0.05	1.3		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		SE				2ck	4k	SE	SE	0.35	9.	Cloudy	Earl Flint.
Santiago de Cuba, W. I.	30.03	762.7	30.06	763.5	80	26.7	82	N	2.4	1.1		8ck	0	NE		0.120	3.05		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.13	765.3	30.18	766.6	31.0	— 0.6	95	N	10	4.5		1c	2s	N	N	0	0	Foggy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.14	765.5	82	27.8	75	SSE	4	1.8			2d		S					Fair	
§ Navy Yard, Portsmouth, N. H.	30.20	767.1	58	14.4	88	NW	2	0.9			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.86	758.4	67.5	19.7	92	Calm			0		10s		W	0	0			Gloomy	
§ Adams, S. 2° 10′, W. 81° 18′	29.98	761.5	70	21.1	90	SSW			4		10		SW					Cloudy	
§ Alaska, Chimbote, Peru *	29.92	760.0	64	17.8	89	Calm			0		10					Long	W	Cloudy	
§ Alert, Yokohama, Japan	29.66	753.4	72	22.2	80	Calm			0		10		Calm	0	0	Smooth		Cloudy	
§ Alliance, N. 46° 05′, W. 56° 20′	30.08	764.0	45	7.2	100	NNE			3		10		Calm	0	0	Smooth	E	Foggy	
§ Ashuelot, Fitzroy Island, Yangtzekiang, China	29.83	757.7	81	27.2	59	WSW			1		2							Clear.	
§ Colorado, New York, N. Y.	30.19	766.8	62	16.7	83	S	3	1.3			2			0	0			Clear.	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	30.19	766.8	64	17.8	78	SSW	1	0.4			1		Calm					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.16	766.1	68	20.0	95	SW	2.4	1.1			10		SW					Cloudy.	
§ Independence, Mare I'd, Navy Yard, Cal.	29.91	759.7	55	12.8	77	W	3.6	1.6			0			0	0			Clear	
§ Jamestown, Sitka, Alaska *	30.20	767.1	48	8.9	92	ESE			1		10					Smooth		Cloudy	
§ Kearsarge, Wood's Holl, Mass	30.20	767.1	57	13.9	94	NW			1		10					Smooth		Foggy	
§ Lackawana, Amapata, Honduras †	30.03	762.7	81	27.2	83	NW			1		10		NW					Cloudy	
§ Marion, Port Stanley, Falkland I'ds	29.51	749.5	34	1.1	100	WSW			4		10					Smooth		Snowing	
§ Michigan, Erie, Pa	29.94	760.5	69	20.6	80	S			4		8		S					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.22	767.6	64	17.8	94	S			1		2		Calm					Clear	
§ Monocacy, Chefoo, China	29.88	758.9	67	19.4	74	Calm			0		0							Clear	
§ New Hampshire, Port Royal, S. C.	30.10	764.5	80	26.7	91	E	2	0.9			8		W	0	0			Fair	
Nipsic, Leghorn, Italy	30.10	764.5	69	20.6	80	SSW			4		2							D. clouds	
§ Onward, Chimbote, Peru †	29.97	761.2	66	18.9	84	Calm			0		10		NW			Long	W	Cloudy	
§ Palos, Shanghai, China	29.88	758.9	68	20.0	84	SSE			2		2							Clear	
§ Passaic, Washington, D. C.	30.20	767.1	69	20.6	85	NE			2		10		NE	0.1	3.			Light rain	
§ Pensacola, San Francisco, Cal.	29.87	758.7	54	12.2	80	SW			0–1		0					Smooth	S	Hazy	
§ Portsmouth, N. 36° 14′, W. 42° 55′	30.16	766.1	69	20.6	95	SSW			6		8		SSW			Rough	SSW	Cloudy	
§ Powhatan, New York, N. Y.	30.21	767.3	65	18.3	78	WSW			2		2		WSW					Hazy	
§ Quinnebaug, Antwerp, Belgium	29.86	758.4	59	15.0	82	E			2		10		Calm					Cloudy	
§ Richmond, Nagasaki, Japan	29.84	757.9	72	22.2	80	Calm			0		0			0	0			Fair	
Rio Bravo, Brownsville, Texas †	29.97	761.2	79	26.1	100	SE	2	0.9			2		Calm	0	0			Fair	
§ Saratoga Gibraltar, Mediterranean	30.04	763.0	72	22.2	50	WNW			4		2			0	0			Fair	
§ Shenandoah, Buenos Ayres, Uruguay.	29.93	760.2	57	13.9	81	NW			3		2		Calm			Smooth		Fair	
§ St. Louis, League Island, Pa	30.21	767.3	62	16.7	100	NNE	3	1.3			2		NW	0	0			Clear	
Swatara, N. 10° 20′ E. 107° 30′ †	29.78	756.4	83	28.3	79	SSW			4		2		SW			Smooth		Clear	
§ Tennessee, New York, N. Y.	30.23	767.8	72	22.2	62	SW			2		0			0	0			Hazy	
§ Ticonderoga, N. 33° 33′, E. 129° 32′	29.88	758.9	70	21.1	95	ESE			1		2		ESE			Smooth		Clear	
§ Trenton, Marseilles, France	29.95	760.7	77	25.0	38	SSE			4		0			0	0	None		Clear	
§ Vandalia, New Bedford, Mass.	30.22	767.6	56	13.3	94	NNE			1		5		SSE					Foggy	
§ Wabash, Boston, Mass.	30.21	767.3	59	15.0	76	W	4	1.8			5			0	0			Fair	
§ Wachusett, S. 48° 34′, W. 80° 33′	30.18	766.6	52	11.1	73	E			3–4		8		SE	Drizzle.		Long	S	Cloudy	
Wyoming, Villafranca, France	30.06	763.5	67	19.4	84	E			3–5		5		E			Smooth	E	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 46° 36′, W. 52° 58′	30.00	762.0	42	5.6		ENE			3		10					Smooth	ESE	Dense fog	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent. St. George's Channel	29.88	758.9	53	11.7	48	NW			1		5		NW	0	0			Fair	
S. S. Ohio, Henry Morrison. N. 39° 26′, W. 58° 39′ †	30.03	762.7	78	25.6	91	ENE			2		2		ENE	0	0	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 39° 10′, W. 72° 05′ *†	30.19	766.8	64	17.8	94	NE			1		5		ENE	0	0	Light	NE	Clear	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger, Mazatlan, Mexico †	29.72	754.9	80	26.7	95	SE			3		8		SE			Gentle	SSW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch.																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer. N. 35° 25′, E. 165° 49′ †	30.12	765.0	54	12.2	80	ENE			6		10		ENE			Heavy	ENE	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 35° 39′, E 145° 52′ †	29.94	760.5	71	21.7	87	S			4–5		n*		SW	Consi	d'ble	Smooth	SW	Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan,																			J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal †	29.94	760.5	50	10.0		SSW			2		0							Clear	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California, G. Debney. Portland, Oregon †	30.12	765.0	45	7.2		NW			2		5		SW					Showery	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.84	757.9	79	26.1	82	NNE			1		5		NE			Light	W	Fair	F. A. Johnston. Banneman.
§ S. S. Australia																			
§ S. S. China, W. B. Seabury.																			J. M. Lacklan.
§ S. S. City of Chester, J. M. Lacklan.																			
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.15	765.8	58	14.4	53	Calm			0		0					Smooth	SW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Panama, Panama. ....†	29.89	759.2	79	26.1	91	NNW			1		2		NW	0.25	6.3	Smooth	S	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 27° 20′, E. 124° 45′.....†	29.78	756.4	72	22.2	90	NNE			4		10		NE	0	0			Cloudy	
§ S. S. City of Sidney, H. C. Dearborn, N. 24° 40′, W. 152° 14′...*†	30.08	764.0	71	21.7		E			6		10		ENE	0	0	Heavy	ENE	Squally	E. LeSack. F. S. Doane.
§ S. S. City of Tokio, J. Maury																			
§ S. S. Colima, R. R. Searle, N. 22° 54′, W. 108° 41′.....†	29.85	758.2	76	24.4	95	WSW			4		0			0	0	Mod'ate	W	Clear	
§ S. S. Dakota, D. E. Griffiths, Esquimalt, Vancouver I'd.....†	30.12	765.0	51	10.6	79	SW			2		5		W					Hazy	D. E. Griffiths.
§ S. S. Granada, J. M. Cavarty N. 21° 51′, W 108° 35′.....†	29.89	759.2	72	22.2	85	W			3		0			0	0	Light	W	Hazy	
§ S. S. Idaho, E. Alexander, San Francisco, Cal..... †	29.93	760.2	52	11.1		SW			1		0							Clear	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, N. 32° 16′, W. 137° 19′.....	30.26	765.6	62	16.7		NE			4		8		N			Smooth	NW	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes.																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.....																			H. N. Goulden.
S. S. Britanic, H. Perry, N. 46° 09′, W. 38° 28′.....†	30.08	764.0	64	17.8		Calm			0		10		S			Smooth		Misty	J. Jones.
S. S. Celtic, B. Gleadell.....																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 32° 40′, W. 79° 03′.....†	30.17	766.3	83	28.3		ESE			1		5		SSE	0	0	Gentle	E	Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.....	30.21	767.3	62	16.7	51	W					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, Arroyo, Porto Rico, W. I.†	30.12	765.0	88	31.1		NE			1		5		E	Showers.		Smooth		Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury. S. 5° 48′, W. 17° 40′.....*†	30.10	764.5	80	26.7		SE			5		2		SE			Mod'ate	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Red Bay, Labrador.....†	30.01	762.2				S			1		2		E					Fair	S. S. Miner.
Brigantine George, W. H. Champlin..																			W. Randall.
Iron Cross, W. Randall.....																			
Ship Jumna, Jas. S. Garvin, N. 45° 15′, W. 60° 32′.....	30.09	764.3	48	8.9	100	W			1		Fog			0	0	Smooth		Dense fog	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 11, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.12	765.1	76.5	24.7	66	Calm			0		0			0	0	Clear	Metge.
Algiers			30.09	764 2	72.3	22.4	67	W			6		6			0	0	Cloudy	Nicolas.
La Calle			30.08	764.0	77.0	25.0	61	NNW			3		5			0	0	Cloudy	Fonfrède.
Tunis			30.07	763.7															Jacques.
Sfax			30.13	765.2															Gau.
Saida			30.10	764.4															Charon.
Tebessa			30.08	764.1	87.3	30.7	15	SE			3		3			0	0	Pretty fair	Watrin.
Geriville			30.10	764.6	78.3	25.7	21	NW			2		0			0	0	Clear	Lonchamp.
Laghouat			30.07	763.8	87.3	30.7	16	NW			3		0			0	0	Clear	Herlin.
Biskra			30.07	763.8	89.2	31.8	31	E			1		0			0	0	Clear.	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.37	746.1	29.89	759.3	79.7	26.5	39	W			5		1			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.15	740.3	29.87	758.8	79.5	26.4	42	E	3.4	1.5			5			0.047	1.2		Dr. Wierzbicki.
Eperies	29.02	737.2	29.85	758.3	81.3	27.4	48	S			2		5k;cs			0	0		Julius Mikolik.
Gratz	28.65	727.8	29.84	758.0	77.0	25.0	57	SSW			2		0			0	0		Andreas Rospini.
Hermannstadt	28.54	725.0	29.88	759.0	82.0	27.8	51	ESE			2		6			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.50	723.8	29.76	755.9	78.3	25.7	64	ENE			1		4			0	0		The Staff.
Lemberg	28.93	734.9	29.87	758.8	75.0	23.9	66	W			1		10			0.315	8.0		Dr. T. Stanecki.
Pola	29.89	759.2	30.00	761.9	75.9	24.4	65	SSE			1		3			0	0		I.R.Hydrographic Office.
Szathmar	29.48	748.8	29 92	759.9	84.9	29.4	45	SW			2		6			0	0		Pet. Pancsics, S. J.
Szegedin	29.63	752.5	29.89	759.2	81.0	27.2	42	S			3		0			0	0		Karl Stancel.
Trieste	29.91	759.7	30.01	762.3	76.5	24.7	73	W			1		1			0	0		P. Busin.
Vienna	29.17	740.8	29.89	759.2	78.1	25.6	53	ESE			2		0			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by he Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau
Brussels	29.57	751.1	29.76	756.0	68.9	20.5	67	ESE			1	4	4	SSE	S	0.018	0.45		Royal Observatory.
Furnes	29.83	757.6	29.85	758.2	57.9	14.4	90	NE			1		10			0.051	1.3	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 10, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.87	758.7	29.97	761.2	52.1	11.2		SSE	18	8.0			6			0	0	D. clouds	W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	62	16.7		WNW			1		3					Blue sky	G.Carrick.
Armagh, (Observatory)	29.67	753.6	29.90	759.4	62.0	16.7		S	9	4.0			1					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.92	760.0	58.0	14.4		WNW	11	4.9			8					Overcast	John Hartnup.
Bolton (Sharples)	29.39	746.5	29.90	759.4	51.9	11.1		NW	12	5.4			10					Thunder-storm	Thomas Mackereth.
Bradford, Yorkshire	29.53	750.0	29.93	760.2	57.6	14.2	69	SE			1		9			0	0	Overcast	J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.03	762.7	83.5	28.6		SE			2		3					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.80	756.9	29.90	759.4	63.0	17.2		NNE			1		7					D. clouds	H. Todd.
Cardington			29.90	759.4	62.6	16.7		NE			1		7					D. clouds	John McLaren.
Chatham (School M. E.)	29.76	755.9	29.89	759.2	56.1	13.4		E			1		9k					D. clouds	Lance Crp'l Hocker,R.E.
Donaghadee	29.89	759.2	29.93	760 2	56	13.3		S			2		0					Blue sky	J. Mac Gowan.
Dover	29.82	757.4	29.84	757.9	56	13.3		NE			5		9					Gloomy	J. Costello.
Falmouth (Observatory)	29.76	755.9	29.99	761.7	59.2	15.1		NW			2		2					D. clouds	The Staff.
Fort Napier, Natal	27.95	709.9	30.16	766.1	67.4	19.7		NE			2		2					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.70	754.4	29.93	760.2	86	30.0		W			1		10					Drizzling	
Galway (Queen's College)			29.83	757.7	60	15.6		SW			3		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.02	762.5	30.08	764.0	68.2	20.1		W			5		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.68	753.9	29.89	759.2	63.9	17.7		SW			2		5k					D. clouds	D. G. Maclean.
Great Yarmouth	29.88	758.9	29.89	759.2	54	12.2		NNE			3		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.72	754.9	29.89	759.2	58.3	14.6		NNE			1		10					Overcast	The Staff, for G.B.Airy.
Guernsey	29.69	754.1	29.91	759.7	60	15.6		NNE			3		0					Blue sky	Dr.S.E.Hoskins, F.R.S.
Helston	30.15	765.8	30.27	768.8	62	16.7		NW			2	c				0	0	Fine	M. P. Moyle.
Holyhead	29.91	759.7	29.95	760.7	56	13.3		NW			2		0					Blue sky	John Tilston.
Jersey	29.65	753.1	29.94	760.5	59.0	15.0		NNW			3		2					D. clouds	J. Fisher.
Kew (Observatory)	29.86	758.4	29.90	759.4	62.7	17.1		NNE	13	5.8			7					Misty	The Met'g'l Office.
Leicester (Museum)	29.67	753.6	29.92	760.0	60.0	15.6		NE			1		9					D. clouds	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.93	760.2	30.00	762 0	70	21.1		SE			2		0					Blue sky	A. King.
Nairn	29.78	756.4	29.87	758.7	62	16.7		E			1		0					Hazy	W. D. Penny.
Nassau, Bahamas			30.10	764.5	82.5	28.1		NE			1		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.74	755.4	29.93	760.2	63.2	17.3		NE			3	3c		E		0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.41	747.0	29.93	760.2	58.4	14.7		NE			2		7					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.68	753.9	29.94	760.5	61.2	16.2		N			1		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.85	758.2	29.93	760.2	67.5	19.7		NW			3		1					D. clouds	John Merrifield.
*Roche's Point	29.86	758.4	29.98	761.5	61	16.1		SSW			4		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.80	756.9	29.96	761.0	53	11.7		WNW			1		0					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.91	759.7	58	14.4		S	15	6.7			0					Blue sky	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.84	757.9	29.90	759.4	72.8	22.7		SW			1		6					D. clouds	Serg't W. H. Lyne.
Sheffield	29.68	753.9	29.66	753.4	59.8	15.4		ENE			1		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.91	759.7	29.94	760.5	63.4	17.4	59	W			2		3			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.93	760.2	59.3	15.2		S	5	2.2			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.70	754.4	29.81	757.2	62.6	17.0		NE			1		7					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	29.92	760.0	29.95	760.7	64	17.8		N			4		3					D. clouds	W. Newcombe.
Valencia (Observatory)	29.88	758.9	29.90	759.4	57.2	14.0		S	31	13.9			6					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony												0	1			0	0	Clear	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.29	769.4	30.33	770.4	64.0	17.8	72	SSW	17.3	7.7									
Hobart Town, Tasmania			30.02	762.5	55.0	12.8	82	W			1		5k			0	0		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.94	760 5	59.0	15.0		E			2		4k	SW		0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.94	760.5	30.13	765.2	72.6	22.6	63	E	16.5	7.4		0	4		SE	0.02	0.5	Squally	C. Meldrum.
Melbourne (Observatory)	30.22	767.6	30.31	769.9	49.0	9.4	85	WNW	4	1.8			2			0.01	0.3	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.83	757.7	52	11.1		S			4	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.94	760.5				SW			6	10	10	SW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert																			Capt.J.P.Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 48° 15′, W. 19° 40′			29.68	753.9	59	15.0		SW			6		10			6	SW	Drizzling	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, N. 37° 24′, W. 13° 57′			30.23	767.8	63	17.2		NNE			1		1					Blue sky	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.18	665.0	29.90	759.4	68.4	20.2	98	Calm			0	10n				Inap.	Inap.	Threatening	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.98	761.6	30.03	762.8	60.3	15.7	69	SE			2		5						
Fanöe	29.97	761.3	29.99	761.8	55.9	13.3	75	ENE			4		10					Raining	
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.69	754.2	29.74	755.3	47.3	8.5	76	NW			2		5						
Thorshavn (Faröe)	29.84	758.0	29.88	758.9	52.9	11.6	73	SE			2		6						
Vestervig	29.93	760.2	30.02	762.6	57.9	14.4	53	NNW			2		4						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.30	744.3	29.85	758.3	56.1	13.4	98	NW			2		8n		NW	0.04	1.	Raining	Collignon, Director.
Amiens, Normal School	29.73	755.1	29.84	757.8	67.6	19.8	68	N			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.58	751.3	29.84	757.9	54.0	12.2	98	N			2		10n	E		0.114	2.90	Covered	Klein, Commandant.
Avignon, Normal School	29.70	754.4	29.78	756.4	73.0	22.8	64	SSE			4		8		SSE	0.295	7.5	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.26	743.3	29.81	757.2	62.4	16.9	82	S			1		10		SW	0.724	18.4	Light rain	C. Saillard, Director.
Beauvais, Normal School	29.53	750.1	29.79	756.6	66.0	18.9	66	NW			1		8	S	N	0.394	1.00	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.93	734.8	29.79	756.7	68.0	20	72	ENE			1		10		SW	0	0	Covered	A. Carré, Director.
Bordeaux	29.68	753.8	29.87	758.8	56.3	13.5	88	W			2		10		WNW	0.480	12.2	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.91	734.3	29.83	757.6	74.8	23.8	47	N			1		8en	S	S	0.016	0.4	Very cloudy	Marlot, Director.
Bourges, Normal School	29.28	743.7	29.82	757.5	61.9	16.6	81	NNE			1		n		NNE	0.850	21.6		M. Gence, Director.
Brest, Naval Observatory	29.75	755.6	29.99	761.8	59.7	15.4	60	NNW			2		3k		NNW	0.118	3.00		Ch. de Rermaree, Dir
Caen, Normal School	29.73	755.2	29.80	757.0	55.9	13.3	95	NW			1		10		N	0.039	1.0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.52	749.7	29.93	760.2	59.0	15	72	W			3		5	E	W	0.106	2.7	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.58	751.2	29.88	759.0	64.6	18.1	80	S			1		10		S	0.256	6.5	Covered	Jadot, Director
Chartres, Normal School	29.34	745.2	29.89	759.2	66.2	19	73	N			1		8		S	0.188	3.5		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	29.59	726.2	29.94	760.4	55.4	13.0	73	W			4		10			0.783	19.9		Alluard, Director.
Commercy, Normal School	28.95	735.4	29.79	756.6	65.8	18.8	75	SSW			1		10kn	SSW	SSW	0.929	23.6	Raining	Dr. Coullet, Director.
Commune de Gréasque*	28.76	730.6	29.91	759.6	66.2	19.0	57	SE			4		10		SE	0.220	5.6		L. Kina, Director.
Grenoble, Normal School	29.05	737.8	29.79	756.7	66.9	19.4	83	ENE			1		ck		NE	0.390	9.90		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.08	753.8	29.89	759.2	55.6	13.1	90	NNW			1		10			0.457	11.6	Covered	Mouillot, Director.
Le Mans, Normal School	29.52	749.8	29.83	757.6	54.5	12.5	94	W			1		10			0.031	0.8	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.86	733.1	29.75	755.6	71.4	21.9	59	S			3		5n		S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.84	757.8	29.94	760.4	63.7	17.6	59	N			3		8		N	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.10	739.1	29.70	754.3	70.3	21.3	61	SE			1		10		SE	0.063	1.6	Raining	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.56	750.9	29.83	757.6	70.7	21.5	66	ESE			4		10		S	0.134	3.40	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.75	730.3	29.77	756.2	62.8	17.1	88	SE			1		k		SE	0.91	23.		Barbier, Director.
Mont-Louis	24.69	627.1	29.93	760 1	48.6	9.2	65	S	20.6	9.2			6		W	0.220	5.6		M. Cave, for Dr. Fines.
Nice	29.94	760.4	29.97	761.2	64.8	18.2	86	E			4		10	SW	SW	0.067	1.7	Light rain	Capt. Boissière, Director.
Nismes, Normal School	29.60	751.9	29.80	756.9	63.5	17.5	82	W			4		10		SW	0.177	4.5	Covered	M. Boyer, Director.
Perpignan	29 77	756.2	29.87	758.8	60.4	15.8	46	NW	29.8	13.3			8		NW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	23.08	568.2			27.1	− 2.7							10		NE	1.106	28.1	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.69	728.6	29.72	754.9	65.5	18.6	73	S			6		10	S	S	0.16	4.	Covered	M. Tallieu
Puy de Dome (Summit) Ob	24.90	632.4			40.8	4.9	100	W			6		10			0.783	19.9	Rain & fog	Alluard, Director.
Rochefort, Naval Obs'y	29.91	759.6	29.94	760.4	57.6	14.2	81	WSW			1		10	WSW	WSW	4.67	144.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.73	755.2	29.82	757.4	57.4	14.1	91	N			1		10		N	0.673	17.1	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.87	758.6	29.90	759.4	60.8	16.0	71	NNW			3		5	NW	NW	0	0	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.61	752.0	29.77	756.2	69.1	20.6	58	ENE			1		10	S	ESE	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	28.85	732.8	29.94	760.5	48.2	9	73	W			1								T. Huguet, Director
Toulouse, Observatory	29.28	743.8	30.01	762.2	53.4	11.9	82	W			4		10			0.457	11.6	Covered	B. Baillaud, Dir.
Tours	29.57	751.1	29.77	756.1	62.6	17.0	81	N			2		10		NNW	0.213	5.4	Covered	M. de Tastes.
Versailles, Observatory	29.28	743.6	29.77	756.1	69.8	21.0	51	N			2					1.493	38.66		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S	28.95	735.4	29.65	753.0	62.6	17	80	SE			1		10		W	0.307	7.8	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.22	767.5	30.24	768.2	78.8	26										0.47	12.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.50	749.3			66.6	19.2	52	N			1		10			0.008	0.2		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.93	760.2	29.95	760.8	66.2	19.0	81	E	4.9	2.2			2			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:58 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,556.40 m., or 5,1 34.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.95	735.3	29.81	757.1	78.3	25.7	56	SE			6		4k	E		0	0		Prof. Dr. Hoh.
Berlin	29.73	755.1	29.89	759.3	73.0	22.8	35	NE			2		8	E		0.016	0.4		Prof. Dr. Arndt
Breslau	29.41	746.9	29.93	760.3	78.1	25.6	53	ESE			2		2			0.126	3.20		Royal University Obs'y
Carlsruhe	29.33	744.9	29.73	755.1	77.4	25.2	57	NE			1		5	SW		0.295	7.5	Thunder-storm.	Albert Senz.
Cassel	29.20	741.6	29.81	757.2	79.0	26.1	54	SW			2		8	SW		0.011	0.27		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.49	749.0	29.85	758.2	76.1	24.5	40	S			1		2			0.236	6.0		Physical Society
Friedrichshafen	28.36	720.3	29.72	755.0	73.8	23.2	54	E			3		10	E		0.201	5.1		Chief Telegrapher Wilhelm.
Hamburg	29.82	757.4	29.89	759.2	65.8	18.8	87	ENE			4		9			0	0		Dr. Reinhold Kleeman
Kiel	29.95	760.6	29.96	761.0	58.3	14.6	77	NE			4		8			0.019	0.47		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.91	759.7	29.99	761.7	68.5	20.3	69	W			2		1	NE		0.024	0.6		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.46	748.2	29.86	758.4	77.2	25.1	57	E			2		2			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.66	753.4	29.89	759.1	73.8	23.2	58	E			4	2c		SSW		0.681	17.3		Dr. Assmann.
Memel	29.94	760.4	29.98	761.6	61.7	16.5	75	NNW			3		3k						Reinbrecht & Issermann.
Munich	28.04	712.2	29.89	759.3	76.1	24.5	45	NE			3		3			1.185	30.1		Dr. C. Lang.
Neufahrwasser	30.03	762.7	30.04	763.1	56.1	13.4	85	N			1		10					Foggy	A. Lothes.
Neustadt (Palatinate)	29.24	742.7	29.76	756.0	76.8	24.9	52						4			0.161	4.1		Reallehrer Dicknether.
Posen	29.65	753.2	29.93	760.2	76.6	24.8	42	E			2		1			0.004	0.1		Prof. Dr. Magener.
Strassburg (in Alsace)	29.24	742.6	29.76	755.8	75.2	24.0	50	NNE			2		10			1.358	34.49		Imp. University Observatory.
Stuttgart	28.83	732.2	29.67	753.5	79.7	26.5	39	NE					3	W		0.748	19.0		Prof. Dr. Schoder.
Thorn	29.74	755.5	29.93	760.3	75.6	24.2	54	NE			2		5	W		0.390	9.9		Dr. Cunerth.
Weissenburg (Bavaria)	28.34	719.9	29.91	759.8	76.5	24.7	53	E	1.3	0.6		3ck		W		0.291	7.4		Reallehrer J. Hopfner.
Wustrow	30.00	761.9	30.02	762.6	59.5	15.3	79	E			3		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.55	750.6	30.00	762.0	88.2	31.2		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.43	747.5	29.48	748.8	86.8	30.4	80	SW	33.1	14.8			0			0	0	Blue sky	
Deesa	29.04	737.5	29.49	749.1	94.7	34.8	42	SW	21.4	9.6			2	S		0.03	0.8	D. clouds	
Bombay	29.67	753.5	29.70	754.4	86.8	30.4	71	WSW	13.0	5.8			4		WSW	0	0	D. clouds	
Poona (Yarrowda)	27.84	707.2	29.68	753.8	81.8	27.7	57	WSW	27.0	12.1			1		W	0	0	D. clouds	
Belgaum	27.21	691.1	29.75	755.6	74.1	23.4	79	WSW	8.0	3.6			4	E	SW	0.02	0.5	D. clouds	
Lahore	28.58	726.0	29.27	743.4	112.3	44.6	15	SW	3.8	1.7			0			0	0	Blue sky	
Roorkee	28.54	725.0	29.38	746.3	106.3	41.3	23	SW	5.0	2.2						0	0	Very sultry.	
Agra	28.84	732.5	29.37	745.9	107.6	42.0	25	SW	8.4	3.8			2	S		0	0		
Nagpur	28.48	723.5	29.48	748.8	92.2	33.4	42	NE	6.9	3.1			9		NE	0	0	D. clouds	
Jubbulpore	28.15	714.9	29.46	748.2	95.7	35.4	38	NW	5.6	2.5			4			0	0	D. clouds	
Lucknow	29.06	738.0	29.42	747.2	95.0	35.0	60	ENE	4.8	2.2				ESE		0	0	Blue sky	
Allahabad	29.11	739.5	29.41	747.0	97.7	36.5	39	SW	4.2	1.9			3	NE		0	0	D. clouds	
Patna	29.31	744.5	29.49	749.0	88.0	31.1	66	E	3.6	1.6			8	E	E	0.02	0.5	D. clouds	
Hazaribagh	27.52	699.0	29.50	749.3	80.0	26.7	82	E	8.9	4.0			9		SE	0.22	5.6	Thunder-showers	
Cuttack	29.44	747.7	29.52	749.7	88.1	31.2	65	NE	1.8	0.8			6			0	0	D. clouds	
Calcutta (Alipore)	29.50	749.2	29.52	749.7	86.2	30.1	76	S	2.0	0.9			7	SE	SE	0	0	D. clouds	
Goalpara	29.15	740.4	29.55	750.6	80.4	26.9	91	Calm	1.5	0.7			9			0	0	D. clouds	
Chittagong	29.47	748.4	29.56	750.7	84.3	29.1	83	SSW	4.1	1.8			9			0	0	D. clouds	
Sibsagar	29.23	742.5	29.56	750.8	85.6	29.8	81	NE	2.5	1.1			10			1.69	42.9	Raining	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.60	751.7	29.99	761.8	79.0	26.1	52	SW	0.7	0.3			5			0	0		Prof. Giovanni Clodig.
Milan	29.44	747.8	29.95	760.6	70.3	21.3	78	ESE	6.9	3.1			10	SW		0	0		Prof. Schiaparelli.
Padua	29.89	759.2	30.00	762.0	77.5	25.3	53	E	3.1	1.4			6	S		0.008	0.2		Prof. Dott. Lorenzoni
Moncalieri	29.05	737.8	29.93	760.2	61.5	16.4	95	NNW	2.5	1.1			10			1.102	28.0		Prof. P. F. Denza.
Genoa	29.79	756.6	29.98	761.4	68.4	20.2	74	SE	9.8	4.4			10	S		0.059	1.5		Prof. G. M. Garibaldi.
Mondovi	28.08	713.1	29.94	760.4	58.8	14.9	91	NE			2		10			0.295	7.5		Prof. D. C. Bruno.
Pesaro	29.93	760.3	29.98	761.5	77.2	25.1	51	E	11.2	5.0			2			0	0		Prof. Luigi Guidi.
Florence	29.74	755.5	30.00	761.9	80.6	27.0	49	SW			2		3			0	0		Cav. F. Meucci.
Leghorn	29.95	760.8	30.04	762.9	74.1	23.4	53	SSE	9.8	4.4			10			0.031	0.8		Prof. P. Monte.
Rome	29.88	759.0	30.06	763.4	81.1	27.3	41	WSW					2			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.4	30.02	762.6	78.6	25.9	37	SSE	7.4	3.3			0			0	0		Prof. C. De Giorgi.
Cosenza	29.14	740.2	29.99	761.8	86.7	30.4	60	SE	3.1	1.4			0			0	0		Prof. D. Conti.
Cagliari	29.80	756.8	29.99	761.7	81.3	27.4	64	SE			4		2			0	0		Prof. A. Pacinotti.
Palermo	29.82	757.4	30.07	763.7	75.9	24.4	55	NE	4.9	2.2			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.97	761.3	30.02	762.4	83.1	28.4	46	S	3.8	1.7			1	WSW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.52	749.9	30.03	762.7	81.5	27.5	52	WNW	0	0			1			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					71.3	21.8	75	W	0.9	0.4			6cs;s			0	0	Dull	K. Sasaki.
Nagasaki, I. M. Obs'y	29.71	754.6	29.91	759.7	67.8	19.9	83	WNW	1.3	0.6			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.87	758.7	29.94	760.5	63.0	17.2	93	SW	2.0	0.9			9s			0.035	0.89	Cloudy	The Staff.
Wakayama	29.89	759.2	29.94	760.5	69.3	20.7	87	S	2.1	0.9		ck	10s			0.040	1.02	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.01	635.2	30.02	762.4	57.2	14.0	70	Calm			0		10ks			0.75	19.0	Covered	Prof. L. Perez.
Guanaxuato	23.63	600.2			61.7	16.5	87	Calm	0	0		10n	n		SE	0.24	6.0	Covered	Vicente Fernandez.
Leon	24.37	619.0	29.98	761.5	63.5	17.5	89	S			1		10n		SE	0.92	23.3	Covered	Prof. M. Leal.
Mazatlan	29.02	752.4	29.88	759.0	75.5	24.2	81	SE			1	1cs	0	SE		0	0	Clear	F. Quijano, C. E.
Mexico, Central Observatory	23.02	584.8	29.89	759.2	60.8	16.0	73	Calm	0	0			10pk			0.13	3.2	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascallentes)	23.87	606.4	29.77	756.1	64.9	18.3	80	Calm			0	6c	2k	NE		0.15	3.8	Cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.41	594.7	30.06	763.4	60.8	16.0	43	Calm	0	0		3k	0	SE		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.14	613.2	30.00	762.0	64.8	18.2	77	E			1		8		E	0.461	11.7	Cloudy	G. Barroeta, M. D.
Tlacotalpam	29.78	756.4	29.79	756.7	78.6	25.9	93	S			3	3	8	S		0.09	2.2	Covered	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.54	572.5	30.07	763.7	60.8	16.0	80	Calm			0		8ks		SW	0.08	2.0	Cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.81	757.2	29.81	757.2	66.9	19.4		NNE			2					0.276	7.0		
Groningen	29.81	757.1	29.86	758.5	60.1	15.6		ENE			4					0.087	2.2		
Helder	29.83	757.7	29.83	757.7	57.4	14.1		ENE			4					0	0		
Hellevoetsluis	29.80	756.9	29.80	756.9	66.7	19.3	77	Calm			0					0	0		
Utrecht	29.76	756.0	29.81	757.2	68.9	20.5	66	E			1		8			0.035	0.9	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.99	761.7	30.04	763.1	57.6	14.2	55	NW	4.9	2.2			1			0.051	1.3		
Brönö	29.99	761.7	30.03	762.7	50.7	10.4	68	W	9	4			2			0	0		
Christiania	29.83	757.6	29.97	761.2	66.0	18.9	35	WSW	9	4			2			0	0		
Tromsö	29.82	757.4	29.87	758.8	48 9	9.4	61	NW	4	2			8			0.031	0.8		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.97	761.3	30.18	766.6	65.8	18.9	98	WSW			5		10			0.197	5.0	Raining	Dr. J. A. Sampaio.
Campo Major	29.16	740.7	30.15	765.9	65.1	18.4	40	NW	7.4	3.3			4			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.19	766.7	30.27	768.9	67.8	19.9	54	SW	6.3	2.8			10			..	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.89	759.2	30.23	768.3	64.9	18.3	42	N	8.7	3.9			1			0	0		The Staff.
Ponta Delgada (Azores)	30.17	766.4	30.24	768.2	67.3	19.6	87	SW	21.7	9.7			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0–9	Direction form—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, St. Paul de Loando			29.97	761.3	73.8	23.2		WNW			2		0			1	WNW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.05	763.2	68.4	20.2		N			3		7		N	2	N		Gloomy	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.92	760.0	84.4	29.1		E			3		10		E	2	SE		Overcast	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.90	759.5	29.92	760.0	56.7	13.7	77	S	9	4			10					Raining	Capt. Sseliwerstow.
Astrakhan	30.10	764.6	30.02	762.5	88.5	31.4	23	SE	7	3			0						Capt. Wisganow.
Barnaul	29.53	745.0	29.81	757.1	71.1	21.7	62	SW	13	6			10						Meteorological Obs.
Dorpat	29.76	755.9	30.00	761.9	63.1	17.3	68	W	9	4			9ks						Prof. Dr. Weihrauch.
Ekaterinburg	28.99	736.4	29.93	760.2	64.0	17.8	43	NW	22	10			7k;ks						Meteorological Obs.
Irkutsk																			
Kasan	29.89	759.1	30.14	765.6	73.6	23.1	36	WSW	7	3		2c							Physical Cabinet.
Kertch	29.83	757.6	29.85	758.1	79.0	26.1	74	ENE	2	1			4						Lagorio.
Kieff	29.33	745.0	29.94	760.5	80.1	26.7	50	ESE	2	1			5cks						Physical Cabinet.
Krotkowo*	29.73	755.2	30.18	766.6	79.5	26.4	31	W	0.2	0.1			3						Cand. Fatjanow.
Lugan	29.72	755.0	29.92	759.9	89.6	32.0	27	ESE	34	15			6						Meteorological Obs.
Moscow	29.60	751.8	30.12	765.0	78.1	25.6	49	S	7.8	3.5			5ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.87	758.8	29.95	760.6	77.7	25.4	62	WSW	4	2			10n						Kurdakof.
Nikolaievsk, on the Amoor	29.70	754.3	29.78	756.5	55.9	13.3	89	SE	16	7			0						
Nukuss																			
Orenburg																			
Pekin (China)	29.64	752.9	29.78	756.5	82.2	27.9	42	SE	7	3			2k						Physical Observatory.
St. Petersburg	29.89	759.3	29.91	759.7	54.7	12.6	93	WNW	18	8			10kn						Central Physical Obs.
Tashkend	28.19	716.1	29.65	753.0	89.1	31.7	56	Calm	0	0			0						Teich, A. M.
Tiflis	28.54	724.9	29.87	758.8	83.7	28.7	34	Calm	0	0			7cs						Physical Observatory.
Vladivostock																			
Warsaw	29.51	749.6	29.91	759.8	76.8	24.9	47	W	4	2		4ck							Astronomical Obs.
Wilna	29.54	750.2	29.93	760.3	79.3	26.3	47	SSE	4	2			5					Heavy clouds	Astronomical Obs.
Yeniseisk	29.64	752.9	29.92	759.9	68.4	20.2	38	SE	4	2			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.82	757.4	29.92	760.0	69.8	21	35	W	12.2	5.47			k			0.060	1.53	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.02	762.5	30.08	764.0	59.7	15.4	78	NW	3.4	1.52			10			0.768	19.5	Rainy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.12	688.9			53.8	12.1	64	W	9.0	4.02			9			0.217	5.5	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.89	708.3	30.08	764.1	64.0	17.8	85	NW	34.0	14.66		0	1			0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	29.90	759.4	30.04	763.1	79.0	26.1	43	NE	10.1	3.78		0	0			0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.24	742.6	30.12	765.0	66.7	19.3	64	W	8.7	3.9			5			0.169	4.3	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.0	30.07	763.7	79.1	26.2	78	ENE	7.2	3.2		6ck;cs	1s	ENE		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.81	757.3	29.87	758.6	85.8	29.9	73	W	8.1	3.7		2c	6kn	E	W	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.10	764.5	30.20	767.0	67.8	19.9	55	WNW	13.4	6.0		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.6	30.11	764.9	83.1	28.4	78	E	9.3	4.16		0	2k		E	0	0	Clear.	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.4	29.94	760.4	53.2	11.8	.....	SW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Umea	29.89	759.3	29.95	760.6	59.7	15.4	59	SW	.....	.....	2	.....	6	.....	.....	0.008	0.2	.....	
Hernosand	29.97	761.2	30.02	762.5	63.3	17.4	54	S	.....	.....	4	.....	5	.....	.....	0	0	.....	
Stockholm	29.85	758.3	30.03	762.8	63.0	17.2	27	ESE	.....	.....	2	.....	1	.....	.....	0	0	.....	
Wisby	29.97	761.1	30.02	762.6	53.6	12.0	74	N	.....	.....	2	.....	3	.....	.....	0.051	1.3	.....	
Sub-Series.																			
Upsala	29.90	759.5	29.99	761.7	63.7	17.6	45	WSW	4.3	1.9	.....	.....	5	.....	W	0	0	.....	Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr.
Saga	.....	.....	.....	.....	M. von Krusenstierna.
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.42	721.9	29.84	757.8	59.0	15.0	91	NNW	.....	.....	3	.....	9	.....	.....	0.142	3.6	Covered	The Observatory.
Zurich	28.16	715.2	29.72	754.8	78.3	25.7	57	SE	.....	.....	2	.....	7	.....	.....	0.252	6.4	Cloudy.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —4.4 mm.; Thermometer, —5.3 Cent. Relative Humidity, +35 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1.339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.95	760.8	79.0	26.1	52	NE	11	5.0	.....	.....	5	.....	N	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.10	764.5	77.4	25.2	.....	W	.....	.....	1	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.72	755.0	89.1	31.7	55	SW	.....	.....	2	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	62.0	16.7	.....	Calm	0	0	.....	.....	10n	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.91	759.7	29.97	761.2	65.8	18.8	76	W	2	0.9	.....	2k	8ks	W	.....	0	0	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.95	760.7	29.99	761.7	60.3	15.7	82	S	3	1.3	.....	1cs	2s	.....	.....	0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.76	755.9	29.94	760.5	67.6	19.8	87	SW	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.80	756.9	29.96	761.0	59.8	15.4	86	NW	.....	.....	1	.....	10s	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.94	760.5	29.97	761.2	60.6	15.9	91	Calm	0	0	.....	.....	10n	.....	.....	0	0	Threatening	J. McWilliams.
Fredericton, N. B.	29.96	761.0	30.02	762.5	63.8	17.7	79	Calm	0	0	.....	10ck	0	NW	.....	0	0	Fair	Prof. Harrison.
Fort Garry, Manitoba	29.18	741.1	29.99	761.7	58.7	14.8	88	NE	6	2.7	.....	0	5ks	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	28.95	735.3	30.00	762.0	71.0	21.7	100	S	.....	.....	1	6cs	0	S	.....	1.85	47.8	Fair	James Grant.
Halifax, N. S.	29.90	759.4	30.03	762.7	66.3	19.1	68	S	4	1.8	.....	3c	0	.....	.....	0	0	Fair	A. Allison.
Hamilton, Ontario	29.64	752.8	30.01	762.2	67.5	19.7	89	S	.....	.....	2	0	0	.....	.....	0.20	5.1	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.64	752.8	29.96	761.0	66.3	19.1	83	SE	3	1.3	.....	10ck	0	SE	.....	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	.....	.....	.....	.....	.....	.....	.....	S	8	3.6	.....	4k	0	S	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.79	756.7	29.98	761.5	70.0	21.1	77	SW	6	2.7	.....	Haze	.....	.....	.....	0	0	Hazy	C. H. McLeod, C. E.
Moose Factory, Ontario	30.23	767.8	30.27	768.8	42.5	5.8	94	N	.....	.....	3	.....	10n	.....	.....	0.09	2.3	Raining	J. R. Nason.
Norwood, Ontario	29.26	743.2	29.93	760.2	73.9	23.3	78	NW	2	0.9	.....	0	4s	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.33	745.0	30.00	762.0	60.5	15.8	97	W	2	0.9	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.26	743.2	29.97	761.2	74.7	23.7	73	W	.....	.....	1	0	6ks?	.....	.....	0	0	Clear?	J. F. Jeffers, M. A.
Port Dover, Ontario	29.34	745.2	30.01	762.2	64.1	17.8	100	Calm	0	0	.....	.....	10n	.....	.....	0.66	16.8	Threatening	H. Morgan.
Port Stanley, Ontario	29.42	747.3	30.04	763.0	68.8	20.4	96	SE	4	1.8	.....	5ck	5n	W	.....	1.20	30.5	Cloudy	M. Payne.
Quebec, Quebec	29.69	754.1	30.00	762.0	63.0	17.2	83	W	.....	.....	3	.....	Haze	.....	.....	0	0	Hazy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.50	749.3	29.94	760.5	60.5	15.8	94	Calm	0	0	.....	4c	0	W	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.88	758.9	30.04	763.0	54.0	12.2	87	S	5	2.2	.....	.....	10ks	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.31	744.5	30.00	762.0	61.3	16.3	98	SW	2	0.9	.....	.....	9ks	.....	.....	0.74	18.8	Clearing	K. Stewart.
Stratford, Ontario	28.76	730.5	29.98	761.5	71.2	21.8	97	SW	6	2.7	.....	1cs	3s	SW	.....	0.942	23.93	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.98	761.5	30.02	762.5	63.8	17.7	77	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.63	752.6	30.00	762.0	68.3	20.2	89	W	5	2.2	.....	6cs	0	W	.....	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.94	735.1	29.96	761.0	71.4	21.9	87	SW	12	5.4	.....	5cs	0	W	.....	0.56	14.2	Cloudy	Professor Wolverton.
Yarmouth, N. S.	30.00	762.0	30.06	763.5	55.6	13.1	87	W	6	2.7	.....	8ck	0	NW	.....	0	0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.87	758.7	30.12	765.0	51	10.6	83	NE	.....	.....	.....	.....	Fog	.....	.....	0.04	1.0	Foggy	John Delany.
St. Pierre, N. F., Hôpital Maritime.	.....	.....	29.96	761.0	56.5	13.6	.....	S	.....	.....	1	.....	.....	.....	.....	0	0	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**
Furnished by the co-operation of R. C. Drum, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.99	761.7	30.07	763.8	72	22.2	71	S	4	1.8		0	0			0	0	Clear	
Alpena, Michigan	29.35	745.5	29.98	761.5	58	14.4	94	SE	2	0.9			10s		Calm	0.20	5.1	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.01	736.8	30.11	764.8	74	23.3	76	SW	4	1.8		8c	0	Calm		0.97	24.6	Fair	
Atlantic City, New Jersey	30.12	765.0	30.13	765.3	65	18.3	89	S	7	3.1			10s		Calm	0	0	Cloudy	
Augusta, Georgia	30.00	762.0	30.20	767.1	77	25.0	82	Calm			0	0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	30.09	764.3	30.14	765.5	67	19.4	100	NE	3	1.3			10n		Calm	1.36	34.5	Heavy rain.	
Barnegat, New Jersey	30.10	764.5	30.12	765.0	65	18.3	89	SW	9	4.0			10s		SW	0	0	Cloudy	
Bismarck, Dakota	28.02	711.7	29.88	759.9	57	13.9	100	NE	20	8.9			10n		Calm	0.10	2.5	Light rain	
Boerne, Texas	28.42	721.9	29.67	753.6	75	23.9	95	SE	4	1.8		5k	8ks	SE	SE	0.02	0.5	Cloudy	
Boise City, Idaho	27.10	688.3	30.06	763.5	44	6.7	68	NW	3	1.3		5cs;k	0	W		0	0	Fair	
Boston, Massachusetts	29.91	759.7	30.06	763.5	71	21.7	66	SW	7	3.1		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.67	728.2	29.67	753.6	78	25.6	82	E	12	5.4			10ks		E	0	0	Cloudy	
Breckenridge, Minnesota	28.80	731.5	29.74	755.4	67	19.4	95	E	2	0.9			10n		NE	0.06	1.5	Light rain	
Brownsville, Texas	29.76	755.9	29.80	756.9	83	28.3	87	E	2	0.9		0	0			0.15	3.8	Clear	
Buffalo, New York	29.32	744.7	29.99	761 7	68	20.0	84	SW	6	2.7			10s		SW	0.36	9.1	Cloudy	
Burkes, Arizona					64	17.8	90	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.74	755.4	30.02	762.5	70	21.1	75	SW	7	3.1		8ck	0	W		0	0	Fair	
Cairo, Illinois	29.74	755.4	30.11	764.8	83	28.3	71	S	5	2.2		0	0			0	0	Clear	
Campo, California	27.27	692.6	29.84	757.9	47	8.3	77	W	4	1.8			10s		W	0	0	Cloudy	
Cape Hatteras, N. Carolina	30.14	765.5	30.14	765.5	75	23.9	90	SW	7	3.1		5cs	5s	E	W	0.01	0.3	Cloudy	
Cape Henry, Virginia	30.10	764.5	30.12	765.0	71	21.7	95	W	8	3.6			10s		Calm	0	0	Cloudy	
Cape Lookout, N. Carolina	30.15	765.8	30.16	766.1	77	25.0	86	SW	7	3.1		5k	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	30.08	764.0	30.11	764.8	66	18.9	84	S	13	5.8			10n		Calm	0.01	0.3	Light rain	
Castroville, Texas																			
Cedar Keys, Florida	30.13	765.3	30.15	765.8	81	27.2	78	E	8	3.6		0	2ks		E	Inap.	Inap.	Fair	
Charleston, South Carolina	30.10	764.5	30.15	765.8	82	27.8	79	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.31	744.5	30.09	764.3	78	25.6	73	S	2	0.9		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.36	745.7	30.12	765.0	78	25.6	82	NE	1	0.4		5cs	Sm'e	SE	Calm	0	0	Fair	
Cheyenne, Wyoming	23.86	606.0	29.80	756.9	51	10.6	65	N	10	4.5		0	0			Inap.	Inap.	Clear	
Chicago, Illinois	29.32	744.7	29.97	761.2	80	26.7	78	S	7	3.1		1k	0	SW		0	0	Clear	
Chincoteague, Virginia	30.09	764.3	30.11	764.8	67	19.4	100	SE	3	1.3			10n		SE	0.04	1.0	Light rain	
Cincinnati, Ohio	29.51	749.5	30.13	765.3	77	25.0	82	SW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.36	745.7	30.05	763.3	79	26.1	74	W	11	4.9		3cs;k	0	W;Calm		0	0	Clear	
Coleman City, Texas	28.07	713.0	29.65	753.1	74	23.3	81	SE	10	4.5		0	0			0	0	Clear	
Columbus, Ohio	29.29	744.0	30.08	764.0	79	26.1	78	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Concho, Texas																			
Corsicana, Texas	29.49	749.0	29.94	760.5	77	25.0	86	S	8	3.6		0	8ks		Calm	0.16	4.1	Cloudy	
Davenport, Iowa	29.35	745.5	29.95	760.7	78	25.6	78	SW	6	2.7		0	0			0	0	Clear	
Dayton, Washington T'y					48	8.9	92	SW			1	5c	5s	N	NE	0.22	5.6	Cloudy	
Deadwood, Dakota	25.20	640.1			54	12.2	87	NE	12	5.4			10n		Calm	0.50	12.7	Light rain	
Decatur, Texas	28.76	730.5	29.86	758.4	76	24.4	91	SE	13	5.8			10n		S	Inap.	Inap.	Light rain	
Delaware Breakwater, Del.	30.09	764.3	30.11	764.8	65	18.3	94	S	6	2.7			10s		SW	0.08	2.0	Cloudy	
Denison, Texas	29.17	740.9	29.92	760.0	76	24.4	86	SE	7	3.1		10k	0	S		0.02	0.5	Cloudy	
Denver, Colorado	24.59	624.6	29.81	757.2	53	11.7	73	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.03	737.3	29.86	758.4	75	23.9	81	S	8	3.6		2k	0	SW		0	0	Clear	
Detroit, Michigan	29.37	746.0	30.01	762.2	72	22.2	90	SW	5	2.2		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.18	690.4	29.32	744.7	72	22.2	76	S	22	9.8		0	0			0	0	Clear	
Dubuque, Iowa	29.27	743.4	29.93	760.2	78	25.6	82	S	9	4.0		8c	Haze	Calm	Calm	0	0	Fair	
Duluth, Minnesota	29.28	743.7	29.95	760.7	55	12.8	100	NE	3	1.3			10n		Calm	0.80	20.3	Light rain	
Eagle Pass, Texas	29.01	736.8	29.69	754.1	83	28.3	75	SE	12	5.4			10s		SE	0	0	Cloudy	
Eastport, Maine	29.95	760.7	30.02	762.5	57	13.9	81	S	3	1.3			10s		Calm	0	0	Cloudy	
Edinburg, Texas					80	26.7	91	S			1	5k	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.34	745.2	30.02	762.5	73	22.8	81	SW	4	1.8			10s		W	0.43	10.9	Cloudy	
Escanaba, Michigan	29.21	741.9	29.84	757.9	64	17.8	94	S	5	2.2		8c	0	W		1.97	50.0	Fair	
Florence, Arizona					61	16.1	55	NE	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	24.91	632.7	30.36	771.1	42	5.6	34	SE	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.93	709.4	29.72	754.9	55	12.8	93	NE	18	8.0			10s		NE	0	0	Threatening	
Fort Custer, Montana	26.72	678.7			51	10.6	100	NW	6	2.7			10n		NW	0.65	16.5	Light rain	
Fort Davis, Texas	25.13	638.3	30.09	764 3	70	21.1	75	W	1	0.4		0	0			0	0	Clear	
Fort Elliot, Texas	26.70	678.2	28.79	731.3	71	21.7	75	SE	16	7.2		10cs	0	SE		0	0	Cloudy	
Fort Gibson, Indian Ter	29.43	747.5	29.94	760.5	76	24.4	82	SE	10	4.5		10cs	0	S		Inap.	Inap.	Cloudy	
Fort Grant, Arizona	25.10	637.5	29.90	759.4	57	13.9	24	S	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.65	727.7	29.86	758.4	75	23.9	77	Calm	0	0		0	5s		Calm	0	0	Fair	
Fort Keogh, Montana	27.14	689.3			55	12.8	100	NE	14	6.3			10n		NE	0.85	21.6	Heavy rain.	
Fort McKavett, Texas	27.61	701.3	29.42	747.3	76	24.4	77	S	10	4.5		0	4s		S	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.67	728.2	29.72	754.9	77	25.0	82	SE	17	7.6		5ck	0	S		0	0	Fair	
Fort Stevenson, Dakota	28.08	713.2			56	13.3	87	NE	18	8.0			10ks		NE	0	0	Cloudy	
Fort Verde, Arizona					46	7.8	54	N			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.88	758.9	29.92	760.0	77	25.0	91	E	14	6.3			10n		E	0.46	11.7	Heavy rain.	
Grand Haven, Michigan	29.33	745.0	29.95	760.7	72	22.2	85	S	18	8.0		5k	0	Calm		0.40	10.2	Fair	
Helena, Montana					47	8.3	62	NW	2	0.9		5ck	0	Calm		Inap.	Inap.	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	29.33	745.0	30.07	763.8	81	27.2	78	S	3	1.3		0	0			0	0	Clear	
Indianola, Texas	29.86	758.4	29.89	759.2	82	27.8	79	S	6	2.7		5k	0	Calm		0.03	0.8	Fair	
Jacksboro, Texas	28.72	729.5	29.76	755.9	75	23.9	77	SE	16	7.2		0	0			0	0	Clear	
Jacksonville, Florida	30.16	766.1	30.18	766.6	80	26.7	78	SE	1	0.4		5k	0	SE		0	0	Fair	
Keokuk, Iowa	29.33	745.0	29.90	759.4	80	26.7	74	S	12	5.4		8cs	0	SW		0	0	Fair	
Key West, Florida	30.07	763.8	30.10	764.5	81	27.2	83	SE	8	3.6			10ks		SE	0	0	Cloudy	
Kittyhawk, North Carolina	30.14	765.5	30.17	766.3	75	23.9	90	W	16	7.2		8k	0	W		0	0	Cloudy	
Knoxville, Tennessee	29.19	741.4	30.15	765.8	77.5	25.3	76	W	2	0.9		2cs	Sm'e	Calm		0	0	Fair	
La Crosse, Wisconsin	29.20	741.7	29.89	759.2	75	23.9	77	SE	4	1.8		0	5s		SE	1.00	25.4	Fair	
La Mesilla, New Mexico	25.98	659.9	30.13	765.3	57	13.9	41	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.34	745.2	29.66	753.4	82	27.8	75	SE	5	2.2		0	0			0	0	Clear	
Leavenworth, Kansas	29.07	738.4	29.87	758.7	74	23.3	76	S	8	3.6			10s		S	0	0	Cloudy	
Lewiston, Idaho	29.23	742.4	29.88	758.9	52	11.1	86	E	1	0.4			10s		Calm	0.47	11.9	Cloudy	
Little Rock, Arkansas	29.74	755.4	30.05	763.3	77	25.0	86	S	4	1.8		0	0			0.11	2.8	Clear	
Los Angeles, California	29.52	749.8	29.85	758.2	58	11.7	80	NE	3	1.3		0	1s		NE	0	0	Clear	
Louisville, Kentucky	29.56	750.8	30.09	764.3	85	29.4	57	SW	4	1.8		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.44	747.8	30.09	764.3	78	25.6	69	SW	4	1.8		0	0			0	0	Clear	
Madison, Wisconsin	28.96	735.6	29.89	759.2	74	23.3	86	S	9	4.0		2c	2ks	W	SW	0	0	Fair	
Marquette, Michigan	29.25	742.9	29.92	760.0	68	20.0	84	S	8	3.6			10s		NW	0.61	15.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.22	716.8	29.88	758.9	78	25.6	78	SE	8	3.6	.....	2k	5ks	SE	SE	0	0.	Fair	
Memphis, Tennessee	29.72	754.9	30.04	763.0	83	28.3	67	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Milwaukee, Wisconsin	29.23	742.4	29.92	760.0	75	23.9	86	SW	7	3.1	.....	8c;ck	0	W	.....	Inap.	Inap.	Fair	
Mobile, Alabama	30.08	764.0	30.12	765.0	79	26.1	87	SE	8	3.6	.....	0	2s	.....	SE	0	0	Clear	
Montgomery, Alabama	29.93	760.2	30.15	765.8	81	27.2	70	SE	3	1.3	.....	5c	0	Calm	.....	0	0	Fair	
Morgantown, West Virginia	29.14	740.1	30.09	764.3	75	23.9	81	Calm	0	0	.....	5cs	5ks	SW	SW	0	0	Cloudy	
Mt Washington, N. H.	23.98	609.1	30.34	770.6	49	9.4	93	NW	11	4.9	.....	8c	2s;sm	NW	NW	0	0	Cloudy	
Nashville, Tennessee	29.63	752.6	30.14	765.5	84	28.9	64	S	1	0.4	.....	1cs	0	Calm	.....	0	0	Clear	
New Haven, Connecticut	29.99	761.7	30.10	764.5	66	18.9	79	SW	3	1.3	.....	.....	10s	.....	SW	0	0	Cloudy	
New London, Connecticut	30.06	763.5	30.11	764.8	65	18.3	78	W	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	81	27.2	78	SE	12	5.4	.....	2c	0	SW	.....	1.08	27.4	Fair	
Newport, Rhode Island	30.06	763.5	30.11	764.8	64.5	18.1	83	SW	7	3.1	.....	2c	0	Calm	.....	0	0	Clear	
New River, North Carolina	.....	.....	.....	.....	79	26.1	82	SW	.....	.....	1	5k	0	SW	.....	.....	.....	Fair	
New York, New York	29.94	760.5	30.12	765.0	63	17.2	83	SW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Norfolk, Virginia	30.09	764.3	30.15	765.8	70	21.1	90	SW	4	1.8	.....	.....	10n	.....	Calm	0.78	19.8	Heavy rain	
North Platte, Nebraska	26.74	679.3	29.10	739.1	74	23.3	65	S	36	16.1	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.14	765.5	30.18	766.6	50.0	10.0	86	N	1	0.4	.....	.....	10s	.....	Calm	0	0	Cloudy	
Omaha, Nebraska	28.69	728.7	29.72	754.9	74	23.3	76	S	20	8.9	.....	.....	10s	.....	S	0	0	Cloudy	
Oswego, New York	29.71	754.6	30.02	762.5	74	23.3	72	SW	3	1.3	.....	2k	0	W	.....	0	0	Fair	
Pembina, Dakota	29.06	738.1	29.87	758.7	59	15.0	94	NE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Pensacola, Florida	30.10	764.5	30.13	765.3	82	27.8	79	E	9	4.0	.....	1k	0	E	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.05	763.3	30.10	764.5	66	18.9	89	SW	10	4.5	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Phœnix, Arizona	28.70	729.0	30.41	772.4	78	25.6	50	E	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.65	448.3	29.86	758.4	25	— 3.9	38	SW	56	25.0	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.17	740.9	29.98	761.5	75	23.9	91	S	13	5.8	.....	.....	10ks	.....	SE	Inap.	Inap.	Cloudy	
Pioche, Nevada	23.96	608.6	29.72	754.9	39	3.9	46	NW	7	3.1	.....	0	0	.....	.....	0.02	0.5	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.05	763.3	76	24.4	69	NW	4	1.8	.....	5k	0	W	.....	0	0	Fair	
Port Huron, Michigan	29.34	745.2	29.98	761.5	70	21.1	90	S	8	3.6	.....	8c	0	W	.....	1.61	40.9	Fair	
Portland, Maine	29.98	761.5	30.03	762.7	62	16.7	77	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Portland, Oregon	30.13	765.3	30.20	767.1	51	10.6	86	Calm	0	0	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Portsmouth, North Carolina	.....	.....	.....	.....	76	24.4	86	SW	12	5.4	.....	5c	0	Calm	.....	0.02	0.5	Fair	
Prescott, Arizona	24.64	625.4	30.00	762.0	37	2.8	45	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.09	764.3	30.11	764.8	78	25.6	86	NE	7	3.1	.....	5c	0	Calm	.....	0.18	4.6	Fair	
Red Bluff, California	29.53	750.0	29.88	758.9	62.0	16.7	46	NW	20	8.9	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Rochester, New York	29.39	746.5	29.97	761.2	73	22.8	81	W	11	4.9	.....	5cs	0	N	.....	0.32	8.1	Fair	
Roseburg, Oregon	29.62	752.3	30.19	766.8	49.5	9.7	93	N	5	2.2	.....	.....	10ks	.....	NE	0.15	3.8	Cloudy	
Sacramento, California	29.74	755.4	29.82	757.4	56.5	13.6	73	N	5	2.2	.....	2c	0	Calm	.....	0	0	Clear	
St. Louis, Missouri	29.49	749.0	30.03	762.7	79	26.1	78	S	7	3.1	.....	1cs	0	Calm	.....	0	0	Clear	
St. Paul, Minnesota	29.03	737.3	29.81	757.2	70	21.1	80	SE	14	6.3	.....	5k	2ks	W	SE	0.37	9.4	Fair	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	46	7.8	40	E	8	3.6	.....	0	1s	.....	Calm	0.01	0.3	Clear	
San Antonio, Texas	29.14	740.1	29.80	756.9	78	25.6	86	SE	6	2.7	.....	.....	8s	.....	Calm	0.14	3.6	Cloudy	
San Diego, California	29.82	757.4	29.89	759.2	62	16.7	72	SE	3	1.3	.....	.....	10s	.....	S	0	0	Cloudy	
Sandusky, Ohio	29.41	747.0	30.04	763.0	79	26.1	74	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.08	764.0	30.11	764.8	65	18.3	84	SW	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
San Francisco, California	29.81	757.2	29.88	758.9	54	12.2	80	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.20	589.3	29.74	755.4	52	11.1	18	SE	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Savannah, Georgia	30.09	764.3	30.18	766.6	84	28.9	71	NW	1	0.4	.....	2k	Sm'e	S	Calm	0	0	Fair	
Shreveport, Louisiana	29.78	756.4	30.00	762.0	76	24.4	86	SE	5	2.2	.....	0	8s	.....	Calm	0.23	5.8	Fair	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.15	765.8	30.18	766.6	79	26.1	82	SW	2	0.9	.....	2k	0	W	.....	0	0	Fair	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.41	747.0	30.04	763.0	80	26.7	74	S	10	4.5	.....	1c	0	W	.....	0	0	Clear	
Springfield, Massachusetts	29.97	761.2	30.10	764.5	68	20.0	79	S	3	1.3	.....	0	2s	.....	SW	0	0	Fair	
Stockton, Texas	26.81	681.0	29.81	757.2	76	24.4	82	SE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.94	760.5	29.99	761.7	65	18.3	84	SW	19	8.5	.....	0	5s	.....	SW	0	0	Fair	
Toledo, Ohio	29.39	746.5	30.03	762.7	82	27.8	71	SW	8	3.6	.....	5c	0	SW	.....	0	0	Fair	
Tucson, Arizona	27.37	695.2	29.92	760.0	72	22.2	26	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.73	755.1	30.22	767.6	52	11.1	86	SE	3	1.3	.....	1c	1s	Calm	NE	0.14	3.6	Fair	
Uvalde, Texas	28.94	735.1	29.72	754.9	79	26.1	82	E	5	2.2	.....	5k	2s	SE	E	0	0	Fair	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	78	25.6	82	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.18	614.2	29.66	753.4	40	4.4	82	NE	20	8.9	.....	.....	10ks	.....	E	0.24	6.1	Threatening	
Visalia, California	29.38	746.2	29.75	755.6	50	10.0	68	Calm	0	0	.....	5ck	0	Calm	.....	0	0	Fair	
Washington, D. C.	30.02	762.5	30.18	766.3	69	20.6	90	N	1	0.4	.....	.....	10s;fg	.....	Calm	0.16	4.1	Cloudy	
Wickenburg, Arizona	.....	.....	.....	.....	49	9.4	44	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.09	764.3	30.16	766.1	79	26.1	82	SW	3	1.3	.....	5c	0	Calm	.....	Inap.	Inap.	Fair	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	45	7.2	61	NE	6	2.7	.....	5ck	0	N	.....	0	0	Fair	
Wood's Holl, Massachusetts	30.06	763.5	30.09	764.3	63	17.2	83	SW	13	5.8	.....	5cs	0	Calm	.....	0	0	Fair	
Yankton, Dakota	28.46	722.9	29.66	753.4	73	22.8	85	SW	12	5.4	.....	.....	10ks	.....	SW	0.06	1.5	Cloudy	
Yuma, Arizona	29.59	751.6	29.73	755.1	64	17.8	58	SW	3	1.3	.....	.....	Haze	.....	Calm	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0	.....	.....	54.8	12.7	72	W	2	0.9	.....	.....	10ks	.....	.....	0.06	1.5	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.04	763.0	30.09	764.3	78	25.6	82	Calm	0	0	.....	8cs	0	Calm	.....	0	0	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	81	27.2	73	Calm	0	0	.....	2c	2s	.....	Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.95	760.7	30.03	762.7	81	27.2	85	E	7	3.1	.....	5k	Haze	SE	NE	0	0	Hazy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.01	763.0	30.04	763.0	81	27.2	83	SE	.....	.....	2	.....	10n	.....	E	0.650	16.51	Raining	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.39	746.5	29.95	760.7	78	25.6	89	S	.....	.....	1	.....	10ks;s	.....	.....	0.15	3.8	.....	Francesco J. Cisneros.
§ Rivas, Nicaragua	.....	.....	.....	.....	77	25	.....	SE	.....	.....	.....	8k	.....	SE	.....	0.08	2.	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.04	763.0	30.07	763.8	79	26.1	82	Calm	0	0	.....	4c	0	.....	.....	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2ck;cs	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	30.34	770.6	30.39	771.9	31.5	— 0.3	95	N	7	3.1	.....	4k	4s	N	N	0	0	Foggy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Bracketville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,898 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.14	765.5	81	27.2	87	SSE	8	3.6			2d		SE					Fair	
§ Navy Yard, Portsmouth, N. H.	30.04	763.0	67	19.4	74	WNW	3	1.3			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.93	760.2	64.5	18.1	94	Calm			0		10s		NE	0.23	5.8			Gloomy	
§ Adams, S 4° 08′, W. 81° 27′	30.00	762.0	66	18.9	94	SSE			2		8		S					Cloudy	
§ Alaska, Chimbote, Peru *	29.94	760.5	65	18.3	84	Calm			0		10					Long	W	Cloudy	
§ Alert, Yokohama, Japan	29.93	760.2	68	20.0	90	Calm			0		10		Calm			Smooth		Cloudy	
§ Alliance, Off St Pierre I'd., Newfoundland	30.03	762.7	44	6.7	??	WSW			1		8		Calm	0	0	Smooth	E	Foggy	
§ Ashuelot, Blakeney Beach, Yangtzekiang, China	29.84	757.9	82	27.8	52	SE			1		2							Fair	
§ Colorado, New York, N. Y.	30.10	764.5	65	18.3	78	SW	3	1.3			10			0	0			Overcast	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	30.08	764.0	64	17.8	83	W	1	0.4			10		Calm					Overcast	
§ Franklin, Off Navy Yard, Norfolk, Va	30.10	764.5	72	22.2	95	WNW	2.4	1.1			0?			0	0			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	29.92	760.0	54	12.2	100	SW	1.2	0.5			1		SW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.87	758.7	46	7.8	92	SSW			6		10					Mod'ate	S	Rainy	
§ Kearsarge, Boston, Mass	30.08	764.0	62	16.7	88	WNW			1		0					Smooth		Clear	
§ Lackawana, Amapata, Honduras †	30.00	762.0	80	26.7	82	NW			1-2		5		NW					Fair	
§ Marion, Port Stanley, Falkland I'ds	29.74	755.4	37	2.8	100	WSW			3		8?		WSW	Blank	Blank	Smooth		Clear?	
§ Michigan, Erie, Pa	29.98	761.5	70	21.1	90	SSW			4		10		NW					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.12	765.0	65	18.3	94	S			0-1		10		Calm					Cloudy	
§ Monocacy, Chefoo, China	29.92	760.0	69	20.6	80	SE			0-1		0							Hazy	
§ New Hampshire, Port Royal, S. C.	30.16	766.1	79	26.1	91	SE	2	0.9			8		NE	0.06	1.5			Fair	
Nipsic. Leghorn, Italy	30.02	762.5	73	22.8	76	SSW			3		2							D. clouds	
§ Onward. Chimbote, Peru †	29.97	761.2	68	20.0	84	WSW			2		5?					Long	W	Cloudy?	
§ Palos, Shanghai, China	29.95	760.7	67	19.4	95	ESE			1		2		E					Clear	
§ Passaic, Washington, D. C.	30.18	766.6	72	22.2	90	NE			1		10		NE	1.8	46.			Raining	
§ Pensacola, San Francisco, Cal.	29.84	757.9	55	12.8	80	SE			1		2					Smooth	S	Hazy	
§ Portsmouth, N. 37° 00′, W. 39° 02′	30.20	767.1	67	19.4	95	WSW			3		2		W			Smooth		Clear	
§ Powhatan, New York, N. Y.	30.12	765.0	66	18.9	94	S			2		10							Overcast	
§ Quinnebaug, Antwerp, Belgium	29.76	755.9	66	18.9	74	SE			1		10		Calm					Cloudy	
§ Richmond, Nagasaki, Japan	29.88	758.9	73	22.8	76	NE			1		0			0	0			Fair	
Rio Bravo, Brownsville, Texas †	29.95	760.7	79	26.1	100	SE	2	0.9			8		S	0.15	3.8			Fair	
§ Saratoga. Gibraltar, Mediterranean	30.17	766.3	71	21.7	58	W			1		0			0	0			Clear	
§ Shenandoah, Buenos Ayres, Argentine Republic	30.19	766.8	53	11.7	73	E			6		2		Calm			Mod'ate	SE	Fair	
§ St. Louis, League Island, Pa	30.11	764.8	66	18.9	94	SW	5	2.2			10			0	0			Cloudy	
Swatara, N. 11° 40′, E. 109° 40′ †	29.78	756.4	84	28.9	83	SSW			4		2		SW			Smooth		Clear	
§ Tennessee, New York, N. Y.	30.13	765.3	67	19.4	53	SW			1		10		Calm	0	0			Hazy	
§ Ticonderoga, Nagasaki, Japan	29.69	759.2	72	22.2	95	ENE			1		2		SW			Smooth		Clear	
§ Trenton, Marseilles, France	29.82	757.4	71	21.7	62	SSW			4		10			9 hours		None		Cloudy	
§ Vandalia. New Bedford, Mass.	30.11	764.8	63	17.2	94	SW			2		2		N					Fair	
§ Wabash, Boston, Mass.	30.06	763.5	63	17.2	94	WSW	5	2.2			5			0	0			Fair	
§ Wachusett, S. 45° 31′, W. 80° 34′	29.86	758.4	46	7.8	84	ENE			5		8		N	0	0	Long; Mod'ate	NE	Cloudy	
Wyoming, Villafranca, France	29.94	760.5	65	18.3	84	ENE			1-3		8		E			Smooth	E	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 48° 14', W. 49° 56'	30.00	762.0	44	6.7		Calm			0		10					Smooth	ESE	Dense fog	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent Liverpool, Eng	29.92	760.0	55	12.8	63	W			2		2		W	0	0			Fair	
S. S. Ohio, Henry Morrison, N. 39° 12', W. 66° 03'.....†	30.10	766.8	76	24.4	91	NNE			1		2		NNE	1 h'r	1 h'r	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 39° 12', W. 66° 16'....*†	30.14	765.5	67	19.4	95	N			2		2		N	0	0	Light	NE	Clear	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger, Mazatlan, Mexico.....†	29.71	754.6	76	24.4	93	ENE			2		2		E			Small	SW	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 40° 21', E. 171° 10'.....†	30.22	767.6	51	10.6	65	ENE			4		10		ENE			Mod'ate	ENE	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 34° 52', E. 141° 24'.....†	29.93	760.2	69	20.6	80	NE			2		ks		NE	Consi	d'ble	Smooth	NE	Overcast	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan, N. 38° 53', W. 123° 46'.....†	29.77	756.1	47	8.3	85	WNW			7		Haze		Calm			Very Heavy	WNW	Clear	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal.....†	29.90	759.4	50	10.0		SE			4		0							Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba, N. 33° 40', W. 118° 06'....†	29.84	757.9	55	12.8		SE			3		5		SE	0	0	Mod'ate	SW	Cloudy	
§ S. S. State of California, G. Debney, Portland, Oregon.....†	30.13	765.8	46	7.8		NW			2		8		SW					Foggy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.82	757.4	74	23.3	90	NNE			1		5		Calm			Light	WSW	Fair	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.23	767.8	55	12.8	68	W			2		0					Smooth	SW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Panama, Panama.....†	29.95	760.7	80	26.7	82	ENE			2		10		E	0	0	Smooth	S	Cloudy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 29° 03′, E. 129° 54′.....†	29.84	757.9	74	23.3	95	SE			4		5		SE	Light	Light	Light	E	Showery	
§ S. S. City of Sidney, H. C. Dearborn, N. 24° 57′, W. 148° 21′...*†	30.17	766.3	70	21.1		E			6		8		NE	0	0	Heavy	ENE	Squally	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 22° 13′, W. 105° 49′.....†	29.87	758.7	80	26.7	100	S			2		5		S	0	0	Smooth	WNW	Fair	
§ S. S. Dakota, D. E. Griffiths, N. 46° 54′, W. 124° 45′...†	30.19	766.8	55	12.8	87	NW			2		5		W			Heavy	NW	Hazy	D. E. Griffiths.
§ S. S. Granada, J. M Cavarly N. 24° 21′, W 111° 52′.....†	29.57	758.7	61	16.1	94	WNW			4		0			0	0	Mod'ate	W	Light fog	
§ S. S. Idaho, E. Alexander, N. 35° 42′, W. 123° 37′...†	30.04	763.0	58	14.4		NW			6		0					Heavy	NW	Clear	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, N. 29° 40′, W. 142° 15′.....	30.37	771.4	67	19.4		E			4		10		E			Long Swell	E	Overcast	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson																			
S. S. Nederland, S. Stokes																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 40° 16′, W. 69° 02′.....†	30.06	763.5	57	13.9	81	S			2		1		S	0	0	Smooth	S	Blue sky	H. N. Goulden.
S. S. Britanic, H. Perry, N. 48° 18′, W. 29° 02′.....†	29.80	756.9	58	14.4		N			4		8		NE			Slight	N	Raining	J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 32° 32′, W. 79° 11′.....†	30.13	765.3	83	28.3		Calm			0		2			0	0	Smooth	E	Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass	30.18	766.6	68	20.0	60	W					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, 6 miles off Cape Rojo, Porto Rico, W. I.†	30.10	764.5	88	31.1		E			3		5		E	0	0	Mod'ate	SE	Fair	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 8° 56′, W. 19° 50′.....*†	30.08	764.0	80	26.7		SE			4		2		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Della Hodgkins, Red Bay, Labrador.....†	29.96	761.0				S			6		10		S					Foggy	S. S. Miner.
Brigantine George, W. H Champlin																			
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, Off Scatari, near Cape Breton	30.02	762.5	46	7.8	100	W			1		Fog			0	0	Smooth		Dense fog	James S. Garvin.

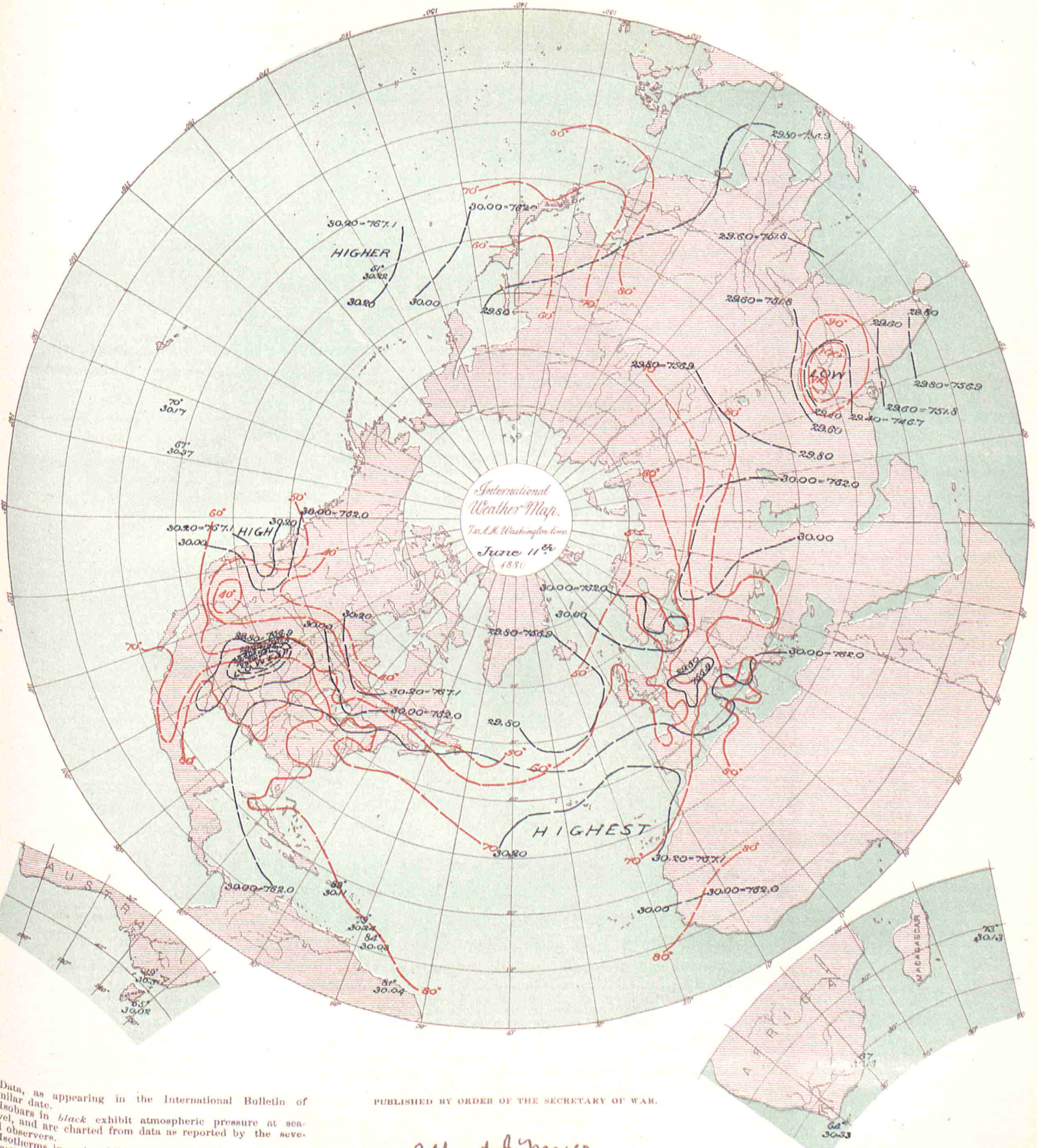
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 12, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.10	764.5	73.4	23.0	68	N			4		4			0	0	Cloudy	Metge.
Algiers			30.10	764.4	72.7	22.6	44	NE			3		0			0	0	Clear	Nicolas.
La Calle			30.12	765.1	77.9	25.5	46	NE			5		3			0	0	Prettycoludy	Fonfrède.
Tunis			30.11	764.9															Jacques.
Sfax			30.17	766.2															Gau.
Saida			30.08	764.0															Charon.
Tebessa			30.14	765.6	81.0	27.2	27	E			2		0			0	0	Clear	Watrin.
Geriville			30.09	764.2	81.0	27.2	39	SE			5		3			0	0	Pretty fair	Lonchamp.
Laghouat			30.10	764.5	88.5	31.4	26	SE			4		0			0	0	Clear.	Herlin.
Biskra			30.11	764.8	95.4	35.2	32	NE			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.33	745.0	29.87	758.6	67.3	19.6	60	NW			7		7			0.008	0.2		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.04	737.7	29.77	756.1	81.7	27.6	54	E	6.5	2.9			1			0.260	6.6		Dr. Wierzbicki.
Eperies	28.95	735.4	29.78	756.3	82.0	27.8	48	S			2		6s		N	0	0		Julius Mikolik.
Gratz	28.69	728.8	29.90	759.5	68.9	20.5	56	SW			5		2			0	0		Andreas Rospini.
Hermannstadt	28.52	724.3	29.85	758.2	84.6	29.2	41	NE			2		1			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.53	724.6	29.85	758.2	56.8	13.8	91	SW			3		10			0	0		The Staff.
Lemberg	28.93	734.7	29.86	758.4	78.8	26.0	60	S			3		8			0.689	17.5		Dr. T. Stanecki.
Pola	29.85	758.2	29.96	761.0	69.1	20.6	63	WNW			1		2			0.165	4.2		I.R. Hydrographic Office.
Szathmar	29.46	748.2	29.89	759.2	89.6	32.0	45	SW			2		5			0.252	6.4		Pet. Pancsics, S. J.
Szegedin	29.50	750.9	29.82	757.5	95.0	35.0	34	S			2		3			0.152	3.85		Karl Stancel.
Trieste	29.85	758.2	29.95	760.8	70.5	21.4	81	SW			1		1			0.232	5.9		P. Busin.
Vienna	29.02	737.0	29.72	755.0	83.5	28.6	40	SSE			3		5			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.74	755.4	29.94	760.4	56.8	13.8	75	NW			4		10		NNW	0	0		Royal Observatory.
Furnes	30.02	762.5	30.04	763.1	57.9	14.4	86	NNE			1		10			0	0		M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 10, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.86	758.4	29.96	761.0	54.9	12.7		SSE	23	10.3			3			0	0	Blue sky	W. Boswell.
Ardrossan	29.84	757.9	29.86	758.4	58	14.4		S			3		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.54	750.3	29.77	756.1	58.0	14.4		SSE	19	8.5			10					Squally	S. Call.
Bidston (Liverpool Obs)			29.93	760.2	68.3	20.2		S	14	6.3			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.41	747.0	29.92	760.0	65.0	18.3		S	19	8.5			4					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.56	750.8	29.96	761.0	60.8	16.0	61	SE			1		3			0	0	Blue sky	J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.03	762.7	80	26.7		NE			1		6					Showery	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.92	760.0	30.01	762.2	62.9	17.2		NNW			1		5ks					D. clouds	H. Todd.
Cardington			30.00	762.0	62.2	16.8		E			0-2		3					D. clouds	John McLaren.
Chatham (School M. E.)	29.89	759.2	30.02	762.5	63.0	17.2		Calm			0		7k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.80	756.9	29.84	757.9	54	12.2		SSW			6		10					Overcast	J. Mac Gowan.
Dover	29.93	760.2	29.96	761.0	58	14.4		NNW			2		10					Misty	J. Costello.
Falmouth (Observatory)	29.79	756.7	30.02	762.5	56.6	13.7		S			3		10					Overcast	The Staff.
Fort Napier, Natal	28.08	713.2	30.29	769.4	63.4	17.4		SE			1		8					Overcast	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.95	760.7	85	29.4		SW			1		8					D. clouds	
Galway (Queen's College)			29.64	752.8	58	14.4		SSW			3		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean	30.04	763.0	30.09	764.3	69.0	20.6		E			3		4					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.66	753.4	29.87	758.7	63.1	17.3		S			4		10					Overcast	D. G. Maclean.
Great Yarmouth	29.98	761.5	29.99	761.7	58	14.4		NNE			2		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.84	757.9	30.01	762.2	64.8	18.2		N			1		8					Misty	The Staff, for G.B.Airy.
Guernsey	29.84	757.9	30.06	763.5	62	16.7		SW			1		3					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.18	766.6	30.30	769.6	62	16.7		S			6	4ck				0	0	Fine	M. P. Moyle.
Holyhead	29.89	759.2	29.92	760.0	60	15.6		SSW			5		10					Misty	John Tilston.
Jersey	29.83	757.7	30.12	765.0	58.8	14.9		WSW			2		2					D. clouds	J. Fisher.
Kew (Observatory)	29.98	761.5	30.02	762.5	62.9	17.2		NW	4	1.8			0						The Met'g'l Office.
Leicester (Museum)	29.73	755.1	29.98	761.5	62.0	16.7		Calm			0		0					Blue sky	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.94	760.5	30.02	762.5	73.6	23.1		N			2		0					Blue sky	A. King.
Nairn	29.73	755.1	29.82	757.4	66	18.9		ESE			3		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.11	764.8	81.5	27.5		NE			1		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.80	756.9	29.99	761.7	67.1	19.5		SSE			3		0			0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.45	748.0	29.96	761.0	67.9	19.9		SSW			2		3					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.77	756.1	30.03	762.7	64.8	18.2		Calm			0		3					Blue sky	The Staff, for E. J. Stone, Esq
Plymouth	29.96	761.0	30.03	762.7	60.7	15.9		S			3		10					Overcast	John Merrifield.
*Roche's Point	29.69	754.1	29.80	756.9	59	15.0		SSW			7		10					Raining	Wm. Kennedy.
St. Ann's Head	29.78	756.4	29.94	760.5	54	12.2		SSE			5		10					Foggy	John C. Walker.
Sandwick Manse, Orkneys			29.85	758.2	57.2	14.0		SSE	40	17.9			2					D. clouds	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.81	757.2	29.88	758.9	76.6	24.8		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.77	756.1	30.05	763.3	64.4	18.0		SSE			1		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.90	759.4	29.93	760.2	67.9	19.9	48	W			3		4			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.95	760.7	64.4	18.0		SW	15	6.7								Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.79	756.7	30.00	762.0	68.7	20.4		SW			1		1					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.99	761.7	30.01	762.2	60	15.6		S			6		10					Gloomy	W. Newcombe.
Valencia (Observatory)	29.67	753.6	29.69	754.1	57.1	13.9		S	44	19.7			10					Raining	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.10	764.5	30.14	765.5	75.2	24.0	44	SSE	3.7	1.7		0	0			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			29.67	753.6	57.0	13.9	81	W			1		10kn			0	0	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			29.92	760.0	68.0	20.0		SW			3		7k			0.04	1.0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.96	761.0	30.15	765.8	73.2	22.9	68	SSE	13.5	6.0		0	3		ESE	0.06	1.5	Fine	C. Meldrum.
Melbourne (Observatory)	30.12	765.0	30.21	767.3	52.6	11.4	81	NE	4	1.8			7			0	0	Dull	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.64	752.8	53	11.7		S			6		10			0	0		J. Youngclause.
North Unst, Shetland ‖s			29.95	760.7				S			6	2	3	SW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert				Capt.J.P.Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore, N. 49° 10′, W. 15° 50′	6	NW	Blue sky	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German, N. 41° 51′, W. 10° 48′			Raining	Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	68.4	20.2	89	NE			2		8c;ks			0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Copenhagen	29.91	759.8	29.96	761.0	58.8	14.9	75	SE			4		10						
Fanöe	29.86	758.4	29.88	758.9	67.1	19.5	80	E			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.47	748.4	29.51	749.5	51.4	10.8	72	NW			2		0						
Thorshavn (Faröe)	29.72	754.9	29.76	755.8	52.5	11.4	87	SE			5		10						
Vestervig	29.85	758.2	29.95	760.6	62.4	16.9	76	ENE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Alençon, Normal School	29.54	750.4	30.10	764.4	62.6	17	61	NW			2		5kn		NW	0 165	4.2	Cloudy	Collignon, Director.
Amiens, Normal School	29.95	760.7	30.06	763.5	58.6	14.8	87	NNW			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.79	756.7	30.05	763.3	54.3	12.4	97	NW			2		9n	E		0.067	1.70		Klein, Commandant.
Avignon, Normal School	30.09	761.9	30.08	763.9	65.1	18.4	55	W			3		8		NW	0.28	7.	Raining	Giraud, Director.
Bar-sur-Seine	29.42	747.3	29.97	761.3	58.5	14.7	84	SW			1		10		SW	0.059	1.5	Light rain	C. Saillard, Director.
Beauvais, Normal School	29.75	755.7	30.02	762.4	59.9	15.5	75	N			2		10		N	0.418	10.50	Covered	Frère Eugene Marie.
Besançon, Normal School	29.12	739.6	30.00	762.0	59.9	15.5	74	S			1		10		S	1.38	35.	Covered	A. Carré, Director.
Bordeaux	29.91	759.8	30.11	764.8	67.8	19.9	46	W			1		8	N	W	0.295	7.5	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.17	741.0	30.10	764.4	57.2	14	86	S			1		10n	S	S	0.925	23.5	Raining	Marlot, Director.
Bourges, Normal School	29.54	750.3	30.09	764.3	55.8	13.2	95	NW			1		n		NW	0	0		M. Gence, Director.
Brest, Naval Observatory	29.83	757.7	30.07	763.8	63.7	17.6	72	SW.			2		6		SW	0	0		Ch. de Rermarec, Dir
Caen, Normal School	29.97	761.1	30.04	763.0	61.9	16.6	77	NW								0.008	0.2	Very clear	M. Bietrix, Director.
Carcassonne, N. School	29.70	754.3	30.10	764.5	69.4	20.8	43	W			1		2		W	0.020	0.5	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.65	753.0	29.96	761.0	59.5	15.3	91	SW			1		10			0	0	Covered	Jadot, Director
Chartres, Normal School	29.58	751.2	30.13	765.3	64.4	18	49	N			2		3		S	0.79	20.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.71	729.1	30.07	763.6	54.1	12.3	71	NW			1		10		NW	0.654	16.6		Alluard, Director.
Commercy, Normal School	29.09	738.9	29.95	760.6	57.6	14.2	84	W			3		n		W	0.256	6.5		Dr. Coullet, Director.
Commune de Gréasque*	28.97	735.8	30.11	764.8	61.3	16.3	56	SW			3		8		W	0.177	4.5		L. Kina, Director.
Grenoble, Normal School	29.26	743.2	30.02	762.5	59.7	15.4	87	WNW			1		kn			0.705	17.90		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.93	760.3	30.15	765.7	66.2	19.0	56	WSW			1		2		W	0.106	2.7	Slightly cld'y	Mouillot, Director.
Le Mans, Normal School	29.76	756.0	30.07	763.8	65.5	18.6	59	WNW			3		8		W	0.673	17.1	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.10	739.1	30.00	762.0	61.3	16.3	79	S			2		5n		S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	30.02	762.6	30.13	765.2	63.3	17.4	63	SSW			4		5	NW	SW	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.43	747.5	30.05	763.2	59.4	15.2	73	NW			1		5n		NW	1.280	32.5	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.83	757.7	30.10	764.5	65.7	18.7	58	NW			2-3		5		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.92	734.5	29.96	760.9	55.6	13.1	84	S			1		k		S	0.618	15.7		Barbier, Director.
Mont-Louis	24.91	632.8	30.15	765.8	51.8	11.0	63	E	15.0	6.7			0			0	0		M. Cave, for Dr. Fines.
Nice	29.88	758.9	29.91	759.8	69.8	21.0	50	W			8		5	W	W	0.500	12.7	Cloudy	Capt. Boissiere, Director.
Nismes, Normal School	29.87	758.6	30.07	763.7	66.0	18.9	54	SW			4		2		W	0.16	4.	Slightly cld'y	M. Boyer, Director.
Perpignan	30.01	762.3	30.11	764.9	68.5	20.3	29	N	5.6	2.5			2	W	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.61	574.3			43.3	6.3							1		N	0	0	Clear.	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.06	738.0	30.11	764.8	60.4	15.8	50	N			1		5	N	N	0.55	14.	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	25.12	638.0			38.3	3.5	100	W			8		10			1.260	32.0	Foggy	Alluard, Director.
Rochefort, Naval Obs'y	30.15	765.9	30.19	766.7	65.1	18.4	60	SW			1		5	SW	SW	0	0	½ covered	Lt E. Devante, Director
Rouen, Normal School	29.95	760.6	30.03	762.8	67.3	19.6	44	WNW			1		0			0.138	3.5	Clear.	Platrier, Director.
Saint Malo (Port) Obs'y	30.05	763.3	30.08	764.1	61.3	16.3	50	NE			3		0			0	0	Clear.	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.85	758.3	30.02	762.5	57.9	14.4	82	NW			2		10		NNW	0 138	3.5	Covered	E. Renou, Director.
Tarbes, Normal School	29.04	737.7	30.12	765.0	59.0	15	78	E			1								T. Huguet, Director
Toulouse, Observatory	29.47	748.6	30.20	767.1	62.8	17.1	57	NW			2		2			0 114	2.9	Slightly cl'dy	B. Baillard, Dir.
Tours	29.86	758.4	30.06	763.4	68.0	20.0	57	NW			2		8		NNW	0.272	6.9	¾ covered	M. de Tastes.
Versailles, Observatory	29.54	750.3	30.03	762.8	59.0	15.0	80	N			1					0.283	7.20		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S	29.25	743.0	29.96	761.0	58.6	14.8	72	NW			3		10		W	0.808	20.4	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.23	767.7	30.25	768.4	80.6	27										0.12	3.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.74	755.3			57.0	13.9	85	NW			1		10			0.445	11.3	Sprinkling	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.88	759.0	29.91	759.6	67.6	19.8	89	ESE	8.5	3.8		4c;hz				0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.02	737.1	29.88	758.9	60.4	15.8	88	W			4		7n	W		0.209	5.3	Raining	Prof. Dr. Hoh.
Berlin	29.56	750.9	29.72	755.0	86.4	30.2	35	SE			1		3			0	0		Prof. Dr. Arndt.
Breslau	29.28	743.6	29.80	757.0	82.8	28.2	46	E			3		2			0	0		Royal University Obs'y
Carlsruhe	29.48	748.9	29.91	759.7	55.0	12.8	95	SW			2		10	SW		0.358	9.10	Raining	Albert Senz.
Cassel	29.14	740.2	29.74	755.5	73.9	23.3	75	N			4		8	SE		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.52	749.8	29.88	759.0	61.3	16.3	80	WSW			2		10			1.165	29.6	Raining	Physical Society
Friedrichshafen	28.52	724.3	29.93	760.2	60.1	15.6	67	WSW			4		4	ESE		1.673	42.5		Chief Telegrapher Wilhelm.
Hamburg	29.75	755.6	29.82	757.4	69.1	20.6	76	NE			3		8			0.618	15.7		Dr. Reinhold Kleeman.
Kiel	29.83	757.7	29.85	758.1	64.8	18.2	82	ESE			1		10			0.052	1.32		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.86	758.5	29.94	760.5	77.9	25.5	61	NE			4		5	NE		0.004	0.1		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.28	743.8	29.68	753.8	80.1	26.7	54	ESE			1		8	SE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.50	749.2	29.72	754.9	81.5	26.7	53	SSW			4		7ks	E		0.508	12.9		Dr. Assmann.
Memel	29.93	760.2	29.98	761.4	77.9	25.5	55	NE			3–4		5s						Reinbrecht & Issermann.
Munich	28.09	713.4	29.94	760.5	55.8	13.2	81	W			4		10	SW		0.134	3.4		Dr. C. Lang.
Neufahrwasser	29.95	760.8	29.97	761.2	59.0	15.0	81	NNW			2		5			0	0		A. Lothes.
Neustadt (Palatinate)	29.35	745.6	29.88	758.9	60.6	15.9	83	SW			1		10					Raining	Reallehrer Dicknether.
Posen	29.57	751.1	29.84	758.0	80.8	27.1	40	E			4		1			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.42	747.3	29.97	761.1	56.7	13.7	91	S			3–4		10					Raining	Imp. University Observatory.
Stuttgart	28.95	735.2	29.83	757.6	59.9	15.5	79	W					10			2.028	51.5	Raining	Prof. Dr. Schoder.
Thorn	29.69	753.9	29.87	758.6	79.5	26.4	53	E			3		2			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.43	722.0	30.00	762.0	57.0	14.4	85	W	4.5	2.0			10		W	0.035	0.9	Light rain	Reallehrer J. Hopfner.
Wustrow	29.85	758.2	29.88	758.9	63.5	17.5	78	NE			4		10s			0.075	1.9		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.56	750.8	29.93	760.2	88.3	31.3		SW			2.0		k					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.44	747.9	29.49	749.1	85.5	29.7	83	SW	41.3	18.5			0			0	0	Blue sky	
Deesa	29.04	737.6	29.49	749.1	95.0	35.0	42	SSW	21.5	9.6			4	SW		0	0	Misty	
Bombay	29.67	753.6	29.71	754.6	86.9	30.5	72	WSW	17.0	7.6			3		SW	0	0	D. clouds	
Poona (Yarrowda)	27.86	707.6	29.69	754.0	83.5	28.6	51	WSW	25.0	11.2			9	E	WNW	0	0	D. clouds	
Belgaum	27.23	691.6	29.77	756.1	73.8	23.2	76	WSW	9.0	4.0			9	E	SW	0	0	D. clouds	
Lahore	28.60	726.3	29.28	743.7	112.3	44.6	15	WSW	3.9	1.7			0			0	0	Blue sky	
Roorkee	28.51	724.0	29.35	745.6	101.7	38.7	34	E	7.0	3.1						0	0	Very sultry.	
Agra	28.86	733.0	29.38	746.4	106.6	41.4	28	N	7.4	3.3			5		N	0	0		
Nagpur	28.52	724.3	29.53	750.0	90.0	32.7	44	NNE	6.2	2.8			9		N	0.12	3.0	D. clouds	
Jubbulpore	28.17	715.5	29.49	749.1	91.7	33.2	46	N	7.7	3.4			8			0	0	D. clouds	
Lucknow	29.09	738.9	29.45	748.1	94.0	34.4	63	ENE	5.2	2.3			2		Calm	0	0	D. clouds	
Allahabad	29.12	739.7	29.42	747.3	97.3	36.3	52	ENE	2.8	1.2			6	NW	W	0.02	0.5	D. clouds	
Patna	29.35	745.4	29.53	750.0	80.1	26.7	91	E	2.8	1.2			10	E	E	0.39	9.9	Overcast	
Hazaribagh	27.51	695.7	29.50	749.3	76.8	24.9	91	Calm	8.1	3.6			10			1.60	40.6	Thunder-storm.	
Cuttack	29.46	748.2	29.54	750.3	82.7	28.2	83	NE	1.0	0.4			10			0.68	17.3	Drizzling	
Calcutta (Alipore)	29.48	748.7	29.50	749.3	83.6	28.7	91	Calm	0	0			8		SE	0.42	10.7	D. clouds	
Goalpara	29.14	740.1	29.54	750.2	84.3	29.1	83	Calm	1.2	0.5			0			1.39	35.3	Blue sky	
Chittagong	29.51	749.6	29.60	751.9	82.9	28.3	79	E	5.9	2.6			5			0.02	0.5		
Sibsagar	29.26	743.2	29.59	751.6	79.5	26.4	94	E	3.0	1.3			10	W	W	0.31	7.9		

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.56	750.7	29.95	760.8	69.8	21.0	61	SW	1.8	0.8			6			0.189	4.8		Prof. Giovanni Clodig
Milan	29.38	746.2	29.88	759.0	70.3	21.3	41	S	6.3	2.8			7	SW		0.224	5.7		Prof. Schiaparelli.
Padua	29.83	757.7	29.94	760.5	70.9	21.6	44	S	4.3	1.9			5	SW		0.122	3.1		Prof. Dott. Lorenzoni.
Moncalieri	29.00	736.5	29.88	758.9	83.8	28.8	59	N	3.1	1.4			8	WSW		0	0		Prof. P. F. Denza.
Genoa	29.79	756.7	29.98	761.5	65.1	18.4	62	SW	9.8	4.4			6	S		0.059	1.5		Prof. G. M. Garibaldi.
Mondovi	28.01	711.4	29.87	758.7	64.4	18.0	47	N			4		1	W		0.307	7.8		Prof. D. C. Bruno.
Pesaro	29.91	759.8	29.96	761.0	70.5	21.4	45	NNE	8.1	3.6			4	SW		0	0		Prof. Luigi Guidi.
Florence	29.79	756.6	30.04	763.0	67.6	19.8	53	SW			6		8	WSW		0.067	1.7		Cav. F. Meucci.
Leghorn	30.00	762.1	30.09	764.3	67.1	19.5	56	WSW	22.4	10.0			6	WSW		0.358	9.1		Prof. P. Monte.
Rome	29.85	758.2	30.02	762.6	77.2	25.1	48	WSW					1			0.035	0.9		Prof. P. S. Ferrari.
Lecce	29.72	755.0	29.97	761.2	86.0	30.0	23	WNW	0.7	0.3			0			0	0		Prof. C. De Giorgi.
Cosenza	29.14	740.1	29.98	761.6	86.4	30.2	61	NW	3.8	1.7			0			0	0		Prof. D. Conti.
Cagliari	29.89	759.1	30.08	764.0	73.8	23.2	24	NW			6		0			0	0		Prof. A. Pacinotti.
Palermo	29.87	758.7	30.12	765.0	72.9	22.7	61	N	15.0	6.7			1			0	0		Prof. G. Ciacciatore
Syracuse	29.81	757.2	29.85	758.3	84.6	29.2	59	E	6.3	2.8			0			0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.52	749.9	30.03	762.8	75.0	23.9	52	ESE	7.4	3.3			1			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.9	20.5	87	NNE	5.8	2.6			3cs			0	0	Fair	K. Sasaki.
Nagasaki, I. M. Obs'y	29.69	754.1	29.88	758.9	68.2	20.1	84	N	3.5	1.6			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.82	757.4	29.89	759.2	62.2	16.8	96	E	1.8	0.8		0	0			0	0	Clear	The Staff.
Wakayama	29.81	757.2	29.87	758.7	69.1	20.6	66	S	5.7	2.5			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	635.9	30.04	762.9	58.1	14.5	72	SW			1		10n			1.34	34.0	Covered	Prof. L. Perez.
Guanaxuato	23.68	601.5			58.1	14.5	90	SSW	Inap.	Inap.		10n	9n	Calm	SW	0.97	24.6	Covered	Vicente Fernandez.
Leon	24.42	620.3	30.06	763.6	62.2	16.8	89	E			2		10n			1.72	43.6	Raining	Prof. M. Leal.
Mazatlan	29.68	753.8	29.93	760.3	79.2	26.2	74	SW			1	1cs	8k		NE	0	0	Very cloudy	F. Quijano, C. E.
Mexico, Central Observatory	28.06	585.8	29.97	761.3	59.2	15.1	76	SW	2.2	1.0			10pk		NE	0	0	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.90	607.1	29.80	756.9	66.0	18.9	84	SW			1		10n		SE	0	0	Covered	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	595.0	30.12	765.1	57.6	14.2	56	Calm	0	0		3k	0	W		0.20	5.0	Clear	Prof. P. Spina.
San Luis Potosi	24.17	614.0	30.06	763.5	63.1	17.3	60	E			1		10		E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpam	29.84	757.8	29.85	758.1	80.4	26.9	86	S			2	5	0	S		0	0	Fair	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.57	573.2	30.10	764.5	60.8	16.0	83	Calm			0	6c	1ks	E	SE	0.67	17.0	Almost cld'y	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.99	761.8	29.99	761.8	59.7	15.4		NNW			4					0	0		
Groningen	29.82	757.3	29.87	758.7	58.1	14.5		N			2					0	0		
Helder	29.92	759.9	29.92	759.9	55.0	12.8		NNW			4					0	0		
Hellevoetsluis	29.94	760.5	29.94	760.5	61.0	16.1	73	NNW			1					0	0		
Utrecht	29.89	759.1	29.93	760.3	58.5	14.7	83	NW			3		10			0	0	Dull	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.04	762.9	30.09	764.3	62.6	17.0	38	NW	7.8	3.5			0			0	0		
Brönø	30.14	765.5	30.18	766.5	54.7	12.6	59	N	9	4			2			0	0		
Christiania	29.94	760.4	30.08	764.0	69.6	20.9	31	ESE	7	3			9			0	0		
Tromsö	30.10	764.6	30.16	766.0	48.2	9.0	57	S	9	4			3			0.110	2.8		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	29.99	761.7	30.20	767.0	67.6	19.8	94	W			4		6			0.472	12.0		Dr. J. A. Sampaio.
Campo Major	29.08	738.7	30.06	763.4	73.8	23.2	26	S	4.9	2.2			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.15	765.9	30.24	768.1	66.2	19.0	68	SW	4.9	2.2			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.79	756.7	30.15	765.8	63.0	17.3	49	SW	15.4	6.9			8	SW		0	0		The Staff.
Ponta Delgada (Azores)	30.12	765.1	30.19	766.9	71.6	22.0	74	WNW	9.8	4.4			4			0.031	0.8		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.94	760.4	75.2	24.0		WSW			2		0			1	WNW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.05	763.3	66.2	19.0		W			3		2		W	2	W		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			30.02	762.5	80.6	27.0		E			3		10		ESE	2	SE	0	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	30.04	763.0	30.06	763.5	54.3	12.4	63	W	13	6			8k						Capt. Sseliwerstow.
Astrakhan	30.12	765.0	30.04	762.9	86.4	30.2	32	SE	7	3			0						Capt. Wisganow.
Barnaul	29.19	741.5	29.67	753.5	72.0	22.2	41	SW	0	0			2						Meteorological Obs.
Dorpat	29.93	760.2	30.17	766.2	64.2	17.9	66	E	7	3		8ck							Prof. Dr. Weihrauch.
Ekaterinburg	29.08	738.7	30.02	762.4	68.7	20.4	37	SW	13	6		9c;ck						Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.78	756.5	30.04	763.0	79.0	26.1	51	SW	7	3			6k						Physical Cabinet.
Kertch	29.87	758.6	29.89	759.1	74.8	23.8	85	E	2	1			0						Lagorio.
Kieff	29.29	743.9	29.88	758.9	83.7	28.7	39	SE	7	3		c;ck	4ks						Physical Cabinet.
Krotkowo*	29.72	755.0	30.17	766.3	82.6	28.1	51	NW	0.2	0.1			3						Cand. Fatjanow.
Lugan	29.78	756.5	29.97	761.3	91.9	33.3	22	ESE	22	10			3						Meteorological Obs.
Moscow	29.59	751.5	30.11	764.7	76.6	24.8	52	E	7.6	3.5			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.82	757.3	29.89	759.1	91.0	32.8	39	S	4	2			4k;ks						Kurdakof.
Nikolaievsk, on the Amoor	29.88	758.9	29.97	761.1	45.9	7.7	91	Calm	0	0			10n						
Nukuss																			
Orenburg																			
Pekin (China)	29.57	751.0	29.71	754.6	83.7	28.7	44	SE	11	5			5cs						Physical Observatory.
St. Petersburg	30.19	766.7	30.20	767.1	65.5	18.6	46	WNW	9	4			3k;ks						Central Physical Obs.
Tashkend	28.19	715.9	29.63	752.7	89.4	31.9	34	Calm	0	0			0						Teich, A. M.
Tiflis	28.55	725.1	29.89	759.1	81.9	27.7	43	SE	5	2			2ks						Physical Observatory.
Vladivostock																			
Warsaw	29.45	747.9	29.84	757.9	82.4	28.0	48	ESE	7	3			5k					Heavy clouds	Astronomical Obs.
Wilna	29.58	751.3	29.98	761.4	80.4	26.9	46	E	5	2			4						Astronomical Obs.
Yeniseisk	29.60	751.9	29.88	758.9	70.0	21.1	47	S	5	2			2						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	30.02	762.5	30.12	765.1	70.5	21.4	51	SSE	2.6	1.17			0			0	0	Clear.	Antonio Rave, Director
Bilbao, Met. Obs'y	30.07	763.6	30.12	765.0	74.1	23.4	41	SE	3.1	1.37		0	0			0.232	5.9	Clear.	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.17	690.1			65.8	18.8	54	N	10.7	4.78			1			0.059	1.5	Almost clear	Domingo Martin y Perez.
Madrid, Royal Observatory	27.90	708.7	30.05	763.2	75.4	24.1	33	SE	6.0	2.67		1	0	NW		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.97	761.3	30.12	765.0	80.2	26.8	46	SSE	3.7	1.64		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.17	740.8	30.06	763.4	60.4	15.8	65	SW	11.2	5.0			10			0	0	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.03	762.7	30.09	764.4	79.4	26.3	84	E	1.3	0.6		4c	0	ENE		1.083	27.5	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.84	757.8	29.89	759.1	85.5	29.7	76	SSE	5.1	2.3			8kn		W	0	0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.01	762.2	30.10	764.6	74.7	23.7	51	SE	3.3	1.5		0	0			0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.4	30.11	764.7	82.4	28.0	77	SE	5.7	2.53		1s	2k		SE	0	0	Clear.	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.16	766.1	30.20	767.1	55.4	13.0		SW			4		7			0	0		
Umea	30.21	767.4	30.26	768.7	59.4	15.2	62	S			4		1			0	0		
Hernosand	30.20	767.0	30.25	768.3	68.7	17.6	72	ENE			4		1			0	0		
Stockholm	30.02	762.4	30.19	766.9	62.6	17.0	38	E			4		7			0	0		
Wisby	30.00	762.1	30.07	763.6	62.6	17.0	55	E			6		5			0	0		
Sub-Series.																			
Upsala	30.07	763.8	30.16	766.0	67.5	19.7	37	SE	9.2	4.1			0			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	
Barque Australia				J. P. Pählson.
H. M. Corvette Balder				Capt. A. C. Schonmeyr.
Saga				M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.62	726.9	30.04	762.9	57.2	14.0	67	WSW			3		10			0.563	14.3	Covered	The Observatory.
Zurich	28.36	720.4	29.99	761.8	56.8	13.8	73	W			4		7			0.787	20.0	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.5 mm.; Thermometer, —0.4 Cent. Relative Humidity, +11 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.97	761.1	80.2	26.8	55	N	7	3.0			0			6	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.04	763.1	79.7	26.5		S			3		0			0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.80	757.0	84.0	28.9	59	WSW			2		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					65.0	18.3		NW	10	4.5		7cs	0			Inap.	Inap.	Fair	Hon. J. Ferguson.
Chatham, N. B.	29.52	749.8	29.57	751.1	64.5	18.1	67	NW	15	6.7		8ck	1ks	NW		0.78	19.8	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.48	748.8	29.52	749.8	83.3	14.6	90	W	3	1.3			10n			0.430	10.92	Light rain	H. J. Cundall, C. E
Toronto, Ontario	29.58	751.3	29.76	755.9	64.6	18.1	89	NW			1		10s			0.013	0.33	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.44	747.8	29.59	751.6	60.0	15.6	65	NW			3	5k	0			0.12	3.0	Fair	H. A. Johnson.
Father Point, Quebec	29.67	753.6	29.69	754.1	53.6	12.0	90	N	10	4.5			5ks			0.44	11.2	Fair	J. McWilliams.
Fredericton, N. B.	29.55	750.6	29.61	752.1	68.1	20.1	69	NW	8	3.6		1ck	9s	NW		0.130	3.30	Clearing	Prof. Harrison.
Fort Garry, Manitoba	28.82	732.0	29.62	752.3	58.0	11.7	96	NE	4	1.8			10n			0.860	21.84	Light rain	James Stewart.
Granton, Ontario	28.86	733.0	29.90	759.4	73.0	22.8	100	Calm			0		10n			0.30	7.6	Cloudy	James Grant.
Halifax, N. S.	29.51	749.5	29.67	753.6	58.3	14.6	86	SW	8	3.6			10n			0.210	5.33	Cloudy	A. Allison.
Hamilton, Ontario	29.52	749.8	29.90	759.4	70.5	21.4	93	NW			1	10cs	0	NE		0.50	12.7	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.51	749.5	29.83	757.7	72.1	22.3	76	NW	2	0.9		7k	0	NW		0.08	2.0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.55	750.6	29.59	751.6	48.6	9.2	96	S	12	5.4			10n			0.17	4.3	Raining	C. H. Rigby.
Montreal, Quebec	29.62	752.3	29.81	757.2	63.6	17.6	84	N	5	2.2			10s			0.44	11.2	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	30.21	767.3	30.25	768.3	37.0	2.8	81	N			4		10n			Inap.	Inap.	Cloudy	J. R. Nason.
Norwood, Ontario	29.16	740.7	29.83	757.7	66.3	19.1	93	W	2	0.9			Fog			0	0	Foggy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.17	740.9	29.85	758.2	61.2	16.2	100	E	5	2.2			10n			0.03	0.8	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.16	740.7	29.88	758.9	68.2	20.1	72	Calm			0	0	0			0	0	Hazy	J. F. Jeffers, M. A.
Port Dover, Ontario	29.24	742.7	29.91	759.7	69.1	20.6	100	Calm	0	0			10n			0.21	5.3	Threatening	H. Morgan.
Port Stanley, Ontario	29.29	744.0	29.91	759.7	69.0	20.6	95	W	4	1.8			10ks			0.29	7.4	Cloudy	M. Payne.
Quebec, Quebec	29.48	748.8	29.77	756.1	62.0	16.7	72	N			1		7s			0.64	16.3	Cloudy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.45	748.0	29.90	759.4	57.5	14.2	81	NW	4	1.8			9s			0.07	1.8	Cloudy	W. H. McIntyre.
St. John, N. B.	29.44	747.8	29.60	751.8	53.0	11.7	100	SW	2	0.9			Fog			0	0	Light fog	G. Murdock, C. E.
Saugeen, Ontario	29.15	740.4	29.84	757.9	64.7	18.2	95	SE	5	2.2			9ks			0.36	9.1	Cloudy	K. Stewart.
Stratford, Ontario	28.65	727.7	29.88	758.9	66.8	19.3	98	Calm	0	0			10s			0.764	19.40	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	29.56	750.8	29.60	751.8	49.3	9.6	98	S	12	5.4			10n			0.08	2.0	Raining	T. C. Hill, C. E.
Toronto, Ontario	29.57	751.1	29.94	760.5	66.1	18.9	95	NW	7	3.1			10n			0.16	4.1	Heavy rain	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.87	733.3	29.89	759.2	70.0	21.1	91	NW	9	4.0			10ks			0.53	13.5	Cloudy	Professor Wolverton.
Yarmouth, N. S.	29.58	751.3	29.65	753.1	52.0	11.1	96	SW	10	4.5			Fog			0	0	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.64	752.8	29.89	759.2	52	11.1	93	E				10ks	10sn			0	0	Cloudy	John Delany.
St. Pierre, N. F., Hôpital Maritime			29.69	754.1	53.6	12.0		W			1					0.32	8.1		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**
Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.72	754.9	29.80	756.9	77	25.0	65	NW	9	4.0		5c	Haze	Calm	Calm	Inap.	Inap.	Fair	
Alpena, Michigan	29.21	741.9	29.83	757.7	61	16.1	100	SE	2	0.9			Fog		Calm	0.60	15.2	Foggy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.00	736.6	30.09	764.3	79	26.1	69	NW	6	2.7		10c	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	29.84	757.9	29.86	758.4	80	26.7	82	NW	8	3.6		5c	Fog	Calm	Calm	Inap.	Inap.	Fair	
Augusta, Georgia	29.95	760.7	30.15	765.8	79	26.1	70	Calm			0	0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	29.87	758.7	29.92	760.0	83	28.3	67	W	8	3.6		2c	Haze	Calm	Calm	1.30	33.0	Clear	
Barnegat, New Jersey	29.81	757.2	29.83	757.7	81	27.2	70	NW	12	5.4		8ck	Haze	Calm	Calm	0.02	0.5	Fair	
Bismarck, Dakota	28.02	711.7	29.87	758.7	53	11.7	93	W	26	11.6			10s		W	0.78	19.8	Cloudy	
Boerne, Texas	28.38	720.8	29.63	752.6	74	23.3	95	SE	5	2.2			10ks		S	0.23	5.8	Cloudy	
Boise City, Idaho	27.22	691.4	30.18	766.6	49	9.4	57	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.57	751.1	29.71	754.6	76	24.4	73	W	18	8.0			10s		Calm	0.02	0.5	Cloudy	
Brackettville, Texas	28.74	730.0	29.73	755.1	79	26.1	82	E	9	4.0			10s		E	0	0	Cloudy	
Breckenridge, Minnesota	28.71	729.2	29.65	753.1	63	17.2	72	W	20	8.9		0	0			0.54	13.7	Clear	
Brownsville, Texas	29.81	757.2	29.86	758.4	85	29.4	96	SE	3	1.3			10s		SE	0.12	3.0	Cloudy	
Buffalo, New York	29.21	741.9	29.88	758.9	65	18.3	94	SW	7	3.1			10s		W	0.60	15.2	Threatening	
Burkes, Arizona					60	15.6	34	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.51	749.5	29.79	756.7	67	19.4	84	N	9	4.0			10n		N	0.03	0.8	Light rain	
Cairo, Illinois	29.74	755.4	30.12	765.0	83	28.3	71	SW	6	2.7		0	0			0	0	Clear	
Campo, California	27.31	693.7	29.88	758.9	43	6.1	75	SW	4	1.8			10s		SW	0	0	Cloudy	
Cape Hatteras, N. Carolina	29.99	761.7	29.99	761.7	80	26.7	82	NW	12	5.4		Haze	0	Calm		0.01	0.3	Clear	
Cape Henry, Virginia	29.94	760.5	29.95	760.7	80	26.7	74	W	13	5.8		2c	0	W		0.52	13.2	Clear	
Cape Lookout, N. Carolina	30.01	762.2	30.03	762.7	77	25.0	86	W	16	7.2		5c	Haze	W	Calm	0.02	0.5	Fair	
Cape May, New Jersey	29.84	757.9	29.87	758.7	73	22.8	85	W	16	7.2		1c	0	NW		0.03	0.8	Clear	
Castroville, Texas	29.12	739.6	29.79	756.7	81	27.2	74	SE	4	1.8			10s		SE	0	0	Cloudy	
Cedar Keys, Florida	30.13	765.3	30.15	765.8	82	27.8	83	SW	3	1.3		0	5ks		W	0	0	Fair	
Charleston, South Carolina	30.05	763.3	30.11	764.8	81	27.2	78	W	12	5.4		0	0			0	0	Clear	
Charlotte, North Carolina	29.25	742.9	30.02	762.5	82	27.8	62	NW	3	1.3		2c	Haze	Calm	Calm	0	0	Fair	
Chattanooga, Tennessee	29.38	746.2	30.15	765.8	73	22.8	85	W	2	0.9		1ck	Fog	Calm	Calm	0.18	4.6	Clear	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	42	5.6	58	N	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.24	742.7	29.88	758.9	81	27.2	74	SW	11	4.9		0	0			0	0	Clear	
Chincoteague, Virginia	30.00	762.0	30.01	762.2	80	26.7	84	NW	13	5.8		5cs	0	SE		0.09	2.3	Fair	
Cincinnati, Ohio	29.46	748.3	30.08	764.0	80	26.7	70	S	3	1.3		1k	0	SW		0	0	Clear	
Cleveland, Ohio	29.25	742.9	29.93	760.2	81.5	27.5	65	W	15	6.7		2c;cs	0	W		0	0	Clear	
Coleman City, Texas	28.15	715.0	29.73	755.1	76	24.4	77	SE	4	1.8			10s		S	0	0	Cloudy	
Columbus, Ohio	29.20	741.7	29.98	761.5	82	27.8	64	SW	3	1.3		0	Haze		Calm	0	0	Clear	
Concho, Texas																			
Corsicana, Texas	29.55	750.6	30.00	762.0	73	22.8	90	SE	8	3.6			10n		Calm	0.22	5.6	Heavy rain	
Davenport, Iowa	29.31	744.5	29.90	759.4	79	26.1	82	SW	14	6.3		0	0			0	0	Clear	
Dayton, Washington T'y					53	11.7	66	N			1	0	0			0	0	Clear	
Deadwood, Dakota	25.44	646.2			48	8.9	73	Calm	0	0			10s		Calm	0.75	19.1	Cloudy	
Decatur, Texas	28.82	732.0	29.94	760.5	75	23.9	90	SE	11	4.9			10s		S	0.08	2.0	Cloudy	
Delaware Breakwater, Del.	29.86	758.4	29.88	758.9	76	24.4	82	W	14	6.3		1c	0	W		0.06	1.5	Clear	
Denison, Texas	29.24	742.7	30.00	762.0	74	23.3	86	SE	5	2.2			10ks		SE	0.05	1.3	Cloudy	
Denver, Colorado	24.88	631.9	30.10	764.5	55	12.8	45	N	1	0.4		0	0			0	0	Clear	
Des Moines, Iowa	29.03	737.3	29.85	758.2	75	23.9	68	SW	8	3.6		0	8s		SW	0	0	Cloudy	
Detroit, Michigan	29.26	743.2	29.88	758.9	75	23.9	86	W	5	2.2		5cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.32	693.9	29.47	748.5	72	22.2	80	S	16	7.2		0	0			Inap.	Inap.	Clear	
Dubuque, Iowa	29.21	741.9	29.87	758.7	78	25.6	73	SW	6	2.7		8ck	2s	SW	Calm	0	0	Cloudy	
Duluth, Minnesota	29.14	740.1	29.81	757.2	46	7.8	92	NE	12	5.4			10n		Calm	2.62	66.5	Light rain	
Eagle Pass, Texas	29.09	738.9	29.78	756.4	81	27.2	78	SE	6	2.7			10s		SE	0	0	Cloudy	
Eastport, Maine	29.54	750.3	29.60	751.8	63	17.2	89	NW	2	0.9			10ks		W	0.01	0.3	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.21	741.9	29.88	758.9	77	25.0	82	SW	6	2.7		0	5s		W	0	0	Fair	
Escanaba, Michigan	29.17	740.9	29.80	756.9	63	17.2	94	S	5	2.2			Fog			0.91	23.1	Foggy	
Florence, Arizona					60	15.6	60	SW	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	24.97	634.2	30.42	772.7	43	6.1	51	SE	1	0.4		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.95	709.9	29.66	753.4	49	9.4	100	NW	13	5.8			10n		NW	1.76	44.7	Light rain	
Fort Custer, Montana	26.92	683.8			48	8.9	92	NW	4	1.8			10s		NW	1.80	45.7	Cloudy	
Fort Davis, Texas	25.17	639.3	30.13	765.3	71	21.7	66	W	3	1.3		0	0			Inap	Inap	Clear	
Fort Elliot, Texas	26.91	683.5	29.03	737.3	72	22.2	85	SE	16	7.2			10n		SE	Inap.	Inap.	Light rain	
Fort Gibson, Indian Ter	29.49	749.0	30.01	762.2	74	23.3	81	SE	8	3.6			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.16	639.0	29.96	761.0	67	19.4	9	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.68	728.5	29.89	759.2	74	23.3	86	SE	5	2.2		0	5s		Calm	0	0	Fair	
Fort Keogh, Montana	27.33	694.2			50	10.0	93	Calm	0	0			10ks		Calm	2.26	57.4	Cloudy	
Fort McKavett, Texas	27.69	703.3	29.50	749.3	76	24.4	77	SE	2	0.9		1c	1s	Calm	SE	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.77	730.7	29.84	757.9	72	22.2	90	SE	10	4.5			10s		S	0	0	Cloudy	
Fort Stevenson, Dakota	28.00	711.2			50	10.0	93	NW	22	9.8			10s		NW	0.34	8.6	Cloudy	
Fort Verde, Arizona					50	10.0	32	N			2	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.95	760.7	29.99	761.7	80	26.7	87	SE	17	7.6			10ks		SE	0.84	21.3	Cloudy	
Grand Haven, Michigan	29.27	743.4	29.88	758.9	73	22.8	85	S	16	7.2		2k	0	S		0	0	Clear	
Helena, Montana					45	7.2	61	NW	5	2.2		0	5s		Calm	0.01	0.3	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.28	743.7	30.01	762.2	78	25.6	78	SW	3	1.3		0	0			0	0	Clear	
Indianola, Texas	29.93	760.2	29.96	761.0	77	25.0	91	SE	9	4.0			10n		S	0.21	5.3	Light rain	
Jacksboro, Texas	28.92	734.6	30.00	762.0	70	21.1	70	SE	12	5.4			10s		SE	0	0	Cloudy	
Jacksonville, Florida	30.14	765.5	30.17	766.3	83	28.3	71	SW	8	3.6		0	0			Inap.	Inap.	Clear	
Keokuk, Iowa	29.34	745.2	29.91	759.7	83	28.3	71	SW	7	3.1		2cs	0	W		0	0	Clear	
Key West, Florida	30.08	764.0	30.11	764.8	82	27.8	79	SE	9	4.0		0	0			0	0	Clear	
Kittyhawk, North Carolina	29.98	761.5	30.00	762.0	77	25.0	82	W	16	7.2		2c	0	Calm		0.22	5.6	Clear	
Knoxville, Tennessee	29.17	740.9	30.14	765.5	74.5	23.6	72	SW	1	0.4		2ck	0	Calm		0	0	Fair	
La Crosse, Wisconsin	29.10	739.1	29.78	756.4	77	25.0	77	SW	4	1.8		5cs	0	Calm		0	0	Fair	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	62	16.7	27	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.42	747.3	29.74	755.4	83	28.3	75	SE	4	1.8		0	5s		SE	0	0	Fair	
Leavenworth, Kansas	29.12	739.6	29.92	760.0	75	23.9	69	S	11	4.9		4cs	0	SW		0	0	Fair	
Lewiston, Idaho	29.19	741.4	29.82	757.4	53	11.7	53	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.77	756.1	30.08	764.0	77	25.0	86	SW	2	0.9		0	0			0	0	Clear	
Los Angeles, California	29.56	750.8	29.89	759.2	58	14.4	88	SE	4	1.8			9s		S	0	0	Cloudy	
Louisville, Kentucky	29.52	749.8	30.05	763.3	81	27.2	59	SW	8	3.6		0	0			0	0	Clear	
Lynchburg, Virginia	29.35	745.5	29.99	761.7	86	30.0	55	S	1	0.4		0	0			0	0	Clear	
Madison, Wisconsin	28.89	733.8	29.81	757.2	76	24.4	86	SW	12	5.4		5cs	2ks	W	W	0	0	Fair	
Marquette, Michigan	29.09	738.9	29.74	755.4	68	20.0	95	N	5	2.2			10s		NW	0.40	10.2	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper 0—10.	Clouds. Amount. Lower 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.30	718.8	29.97	761.2	78	25.6	78	SE	4	1.8		0	8ks		SE	0	0	Fair	
Memphis, Tennessee	29.76	755.9	30.08	764.0	83	28.3	67	S	5	2.2		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.16	740.7	29.84	757.9	79	26.1	74	W	14	6.3		8c;k	0	W		0	0	Fair	
Mobile, Alabama	30.11	764.8	30.15	765.8	80	26.7	82	SE	3	1.3		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.94	760.5	30.17	766.3	79	26.1	82	S	1	0.4		2c	0	Calm		0.02	0.5	Clear	
Morgantown, West Virginia	29.94	737.0	29.97	761.2	85	29.4	64	SW	3	1.3		0	0			0	0	Clear	
Mt Washington, N. H.	23.67	601.2	30.03	762.7	47	8.3	100	NW	40	17.9			Fog		NW	0.73	18.5	Dense fog	
Nashville, Tennessee	29.61	752 1	30.12	765.0	81	27.2	70	W	1	0.4		1ck	0	Calm		Inap.	Inap.	Clear	
New Haven, Connecticut	29.69	754.1	29.80	756.9	78	25.6	69	NW	11	4.9		5c	0	W		0.09	2.3	Fair	
New London, Connecticut	29.80	756.9	29.85	758.2	77	25.0	69	NW	7	3.1		2cs	Haze	NW	Calm	0.04	1.0	Clear	
New Orleans, Louisiana	30.05	763.3	30.11	764.8	81	27.2	78	S	7	3.1		8c	0	W		0.03	0.8	Fair	
Newport, Rhode Island	29.68	753.9	29.73	755.1	69	20.6	95	SW	6	2.7		8cs	0	Calm		0.46	11.7	Fair	
New River, North Carolina					79	26.1	78	W			1	5c	0	N				Fair	
New York, New York	29.65	753.1	29.81	757.2	81	27.2	58	NW	14	6.3		2cs	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	29.91	759.7	29.97	761.2	84	28.9	68	W	1	0.4		0	Haze		Calm	1.78	45.2	Clear	
North Platte, Nebraska	27.09	688.1	29.59	750.8	64	17.8	78	NE	3	1.3		5k	0	W		0	0	Fair	
Olympia, Washington Ter.	29.99	761.7	30.03	762.7	50.0	10.0	93	SE	1	0.4			10s		W	0	0	Cloudy	
Omaha, Nebraska	28.79	731.3	29.84	757.9	69	20.6	80	NW	4	1.8			10s		SW	0.01	0.3	Cloudy	
Oswego, New York	29.56	750.8	29.87	758.7	65	18.3	89	W	2	0.9			10s		Calm	0.01	0.3	Cloudy	
Pembina, Dakota	28.67	728.2	29.47	748.5	56	13.3	100	N	10	4.5			10n		Calm	0.30	7.6	Light rain	
Pensacola, Florida	30.12	765.0	30.15	765.8	83	28.3	71	SE	3	1.3		5k	0	S		0	0	Fair	
Philadelphia, Pennsylvania	29.79	756.7	29.84	757.9	83	28.3	64	W	14	6.3		5c	0	Calm		0.05	1.3	Fair	
Phœnix, Arizona	28.67	728.2	30.39	771.9	73	22.8	39	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	31	— 0.6	38	SW	20	8.9		0	0			0	0	Clear	
Pilot Point, Texas	29.23	742.4	30.05	763.3	74	23.3	90	SE	10	4.5			10n		Calm	0.01	0.3	Light rain	
Pioche, Nevada	23.95	608.3	29.72	754.9	48	8.9	29	NW	10	4.5		1ck	0	SW		0	0	Clear	
Pittsburg, Pennsylvania	29.18	741.1	29.93	760.2	82	27.8	67	SW	8	3.6		0	0			0	0	Clear	
Port Huron, Michigan	29.27	743.4	29.90	759.4	67	19.4	84	NE	10	4.5			10ks		W	0	0	Cloudy	
Portland, Maine	29.64	752.8	29.69	754.1	73	22.8	72	NW	12	5.4		2cs	0	NW		0.16	4.1	Clear	
Portland, Oregon	30.03	762.7	30.10	764.5	48	8.9	96	S	2	0.9			Fog		Calm	0	0	Dense fog	
Portsmouth, North Carolina					78	25.6	86	W	16	7.2		5k	0	W		0	0	Fair	
Prescott, Arizona	24.67	626.6	30.03	762.7	42	5.6	34	S	1	0.4		0	0			0	0	Clear	
Punta Rassa, Florida	30.11	764.8	30.12	765.0	81	27.2	74	E	9	4.0		2c;k	0	Calm		Inap.	Inap.	Clear	
Red Bluff, California	29.51	749.5	29.86	758.4	66.0	18.9	50	N	13	5.8		0	0			0	0	Clear	
Rio Grande City, Texas																			
Rochester, New York	29 27	743.4	29.86	758.4	71	21.7	80	W	8	3.6		5cs	0	W		Inap	Inap.	Fair	
Roseburg, Oregon	29.54	750.3	30.12	765.0	46.5	8.1	92	Calm	0	0		1c	0	Calm		0	0	Clear	
Sacramento, California	29.72	754 9	29.80	756.9	64	17.8	68	NW	8	3.6		2c	0	Calm		0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.03	762.7	78	25.6	73	SW	11	4.9		1ck	0	Calm		0	0	Clear	
St. Paul, Minnesota	28.96	735.6	29.74	755.4	71	21.7	80	SW	7	3.1		5c	0	W		0	0	Fair	
Salt Lake City, Utah	25.59	650.0	29.92	760.0	58	11.7	36	N	4	1.8		7k	0	S		0	0	Fair	
San Antonio, Texas	29.22	742.2	29.89	759.2	79	26.1	87	SE	2	0.9			10s		S	0	0	Cloudy	
San Diego, California	29.88	758.9	29.96	761.0	58	14.4	64	E	7	3.1			10s		S	0	0	Cloudy	
Sandusky, Ohio	29.30	744.2	29.92	760.0	80	26.7	74	SW	16	7.2		0	0			0	0	Clear	
Sandy Hook, New Jersey	29.79	756.7	29.82	757.4	82	27.8	71	W	10	4.5		5c	Haze	W	Calm	0	0	Fair	
San Francisco, California	29.80	756.9	29.87	758.7	52	11.1	89	W	11	4.9		0	0			0	0	Clear	
Santa Fé, New Mexico	28.26	590.8	29.80	756.9	58	14.4	12	E	4	1.8		1cs	Haze	Calm	Calm	0	0	Clear	
Savannah, Georgia	30.07	763.8	30.16	766.1	85	29.4	64	SW	8	3.6		2k	Sm'e	E	Calm	0	0	Fair	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	75	23.9	86	S	4	1.8		0	8s		Calm	0.02	0.5	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.06	763.5	30.09	764.3	81	27.2	74	SW	11	4.9		0	0			0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.38	746.2	30.01	762.2	81.5	27.5	74	SW	7	3.1		0	2s		SW	Inap.	Inap.	Fair	
Springfield, Massachusetts	29.66	753.4	29.78	756.4	77	25.0	65	S	1	0.4		5cs	0	SW		0.02	0.5	Fair	
Stockton, Texas	26.88	682.7	29.88	758.9	76	24.4	77	SE	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass	29.67	753.6	29.72	754.9	74	23.3	81	NW	8	3.6		Haze	Haze			0	0	Light haze	
Toledo, Ohio	29.29	744.0	29.93	760.2	84	28.9	68	SW	12	5.4		1c	0	W		0	0	Clear	
Tucson, Arizona	27.41	696.2	29.96	761.0	71	21.7	25	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.65	753.1	30.14	765.5	53.5	11.9	77	E	8	3.6		0	0			0	0	Clear	
Uvalde, Texas	28.92	734.6	29.81	757.2	79	26.1	83	E	3	1.3			10s		E	0	0	Cloudy	
Vicksburg, Mississippi	29.88	758.9	30.14	765.5	76	24.4	91	SE	6	2.7		2c	0	Calm		0.82	20.8	Clear	
Virginia City, Montana	24.34	618.2	29.82	757.4	37	2.8	90	N	4	1.8			10s		NE	0	0	Cloudy	
Visalia, California	29.40	746.7	29.76	755.9	58	14.4	64	NW	1	0.4		2ck	5s	Calm	Calm	0	0	Fair	
Washington, D. C.	29.84	757.9	29.95	760.7	84	28.9	68	NW	6	2.7		5cs	0	W		0.01	0.3	Fair	
Wickenburg, Arizona					60	15.6	44	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.98	761.5	30.05	763.3	83	28.3	74	W	9	4.0		0	0			Inap.	Inap.	Clear	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	42	5.6	66	NE	10	4.5		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.68	753.9	29.72	754.9	64	17.8	100	W	10	4.5			Fog		W	0.23	5.8	Dense fog	
Yankton, Dakota	28.53	724.6	29.86	758.4	69	20.6	90	W	6	2.7			10ks		W	0.03	0.8	Cloudy	
Yuma, Arizona	29.61	752.1	29.75	755.6	66	18.9	28	SW	6	2.7		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.05	560.1			54.0	12.2	74	Calm	0	0			10n			0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.07	763.8	30.12	765.0	79	26.1	82	Calm	0	0		8c;cs	0	Calm		1.17	29.7	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.04	763.0	30.05	763.3	80	26.7	72	SE	4	1.8		2c	2cs	Calm	SE	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.90	759.4	29.98	761.5	81.5	27.5	78	E	6	2.7		0				0	0	Clear	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	80	26.7	87	E			2	5ck	6k	E		2.070	52.58	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.46	748.3	30.02	762.5	78	25.6	80	E			2		10ks			0.12	3.0		Francesco J. Cisneros
§ Rivas, Nicaragua					73	23		NW					8k		NW	0.31	8.	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.05	763.3	30.07	763.8	82	27.8	74	N	3.6	1.6		0	2ks		N	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.23	767.8	30.28	769.1	30.5	— 0.8	95	E	11	4.9			Fog			0	0	Foggy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?)m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yanktou, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.556 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.20	767.1	83	28.3	83	S	4	1.8	.....	.....	5d	.....	S	.....	.....	.....	.....	Fair	
§ Navy Yard, Portsmouth, N. H.	29.78	756.4	72	22.2	80	NW	2	0.9	.....	.....	5	.....	.....	0.4	10.	.....	.....	Fair	
Naval Hospital, Yokohama, Japan	29.90	759.4	67.5	19.7	92	Calm	.....	.....	0	.....	10s	.....	W	0	0	.....	.....	Gloomy	
§ Adams, Payta, Peru	30.04	763.0	68	20.0	90	SE	.....	.....	1	.....	10	.....	SE	.....	.....	.....	.....	Cloudy	
§ Alaska, S 9° 12′. W. 78° 37′	29.95	760.7	63	17.2	94	Calm	.....	.....	0	.....	0	.....	.....	.....	.....	Long	W	Clear	
§ Alert, Yokohama, Japan	29.78	756.4	70	21.1	85	SSE	.....	.....	2	.....	10	.....	Calm	0	0	Smooth	.....	Cloudy	
§ Alliance, St Pierre, Newfoundland	29.81	757.2	45	7.2	100	SW	.....	.....	1	.....	10	.....	Calm	Heavy	Heavy	Smooth	E	Foggy	
§ Ashuelot, Kin Kiang, Yangtze-kiang, China	29.81	757.2	76	24.4	60	WSW	.....	.....	2	.....	10	.....	.....	.....	.....	.....	.....	Raining	
§ Colorado, New York, N. Y.	29.80	756.9	78	25.6	78	NW	5	2.2	.....	.....	2	.....	NW	0	0	.....	.....	Clear	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	30.12	765.0	77	25.0	77	NW	12	5.4	.....	.....	2	.....	WNW	.....	.....	.....	.....	Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	29.96	761.0	78	25.6	91	WSW	6	2.7	.....	.....	2	.....	SW	2.15	54.6	.....	.....	Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.08	764.0	55	12.8	100	SW	6.0	2.7	.....	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Jamestown, Sitka, Alaska*	29.87	758.7	39	3.9	91	ENE	.....	.....	.....	.....	5	.....	SE	.....	.....	Mod'ate	S	Fair	
§ Kearsarge, Boston, Mass	29.71	754.6	73	22.8	55	SW	.....	.....	2	.....	10	.....	SW	.....	.....	Smooth	.....	Cloudy	
§ Lackawana, Amapata, Honduras†	30.04	763.0	79	26.1	78	Calm	.....	.....	0	.....	8	.....	SSW	.....	.....	.....	.....	Fair	
§ Marion, Port Stanley, Falkland I'ds	29.91	759.7	39	3.9	100	W	.....	.....	3	.....	2	.....	W	Blank	Blank	Smooth	.....	Clear	
§ Michigan, Erie, Pa	29.86	758.4	74	23.3	95	SW	.....	.....	5	.....	8	.....	W	.....	.....	.....	.....	Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	29.83	757.7	80	26.7	91	N	.....	.....	1	.....	6	.....	N	.....	.....	.....	.....	Misty	
§ Monocacy, Chefoo, China	29.88	758.9	74	23.3	59	S	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§ New Hampshire, Port Royal, S. C.	30.12	765.0	79	26.1	78	SW	14	6.3	.....	.....	2	.....	S	0	0	.....	.....	Clear	
§ Onward, Chimbote, Peru†	29.98	761.5	67	19.4	84	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	W	Fair	
§ Palos, Shanghai, China	29.91	759.7	71	21.7	??	ESE	.....	.....	1	.....	8	.....	S;E	.....	.....	.....	.....	Cloudy	
§ Passaic, Washington, D. C.	29.95	760.7	84	28.9	75	SW	.....	.....	1	.....	2	.....	.....	2.0	51.	.....	.....	Clear	
§ Pensacola, San Francisco, Cal.	29.82	757.4	56	13.3	87	SW	.....	.....	1	.....	8	.....	.....	.....	.....	Smooth	S	Hazy	
§ Portsmouth, N. 37° 34′, W. 35° 49′	30.20	767.1	70	21.1	95	WSW	.....	.....	5	.....	10	.....	SW	.....	.....	Mod'ate	SW	Cloudy	
§ Powhatan, New York, N. Y.	29.84	757.9	79	26.1	78	W	.....	.....	3	.....	5	.....	W	.....	.....	.....	.....	Fair	
§ Quinnebaug, Antwerp, Belgium	29.91	759.7	66	18.9	50	NW	.....	.....	2	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
§ Richmond, Nagasaki, Japan	29.91	759.7	71	21.7	90	N	.....	.....	2	.....	2	.....	.....	0	0	.....	.....	Fair	
Rio Bravo, Brownsville, Texas†	30.03	762.7	76	24.4	100	SE	2	0.9	.....	.....	8	.....	S	0.15	3.8	.....	.....	Rainy	
§ Saratoga Gibraltar, Mediterranean	30.11	764.8	69	20.6	70	E	.....	.....	4	.....	2	.....	E	0	0	.....	.....	Fair	
§ Shenandoah, Buenos Ayres, Argentine Republic	29.81	757.2	58	14.4	88	NE	.....	.....	3	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy	
§ St. Louis, League Island, Pa	29.87	758.7	79	26.1	86	WNW	14	6.3	.....	.....	5	.....	SW	0.03	0.8	.....	.....	Fair	
Swatara, N. 13° 15′. E. 112° 03′†	29.80	756.9	83	28.3	83	SSW	.....	.....	4	.....	2	.....	SW	.....	.....	Smooth	.....	Clear	
§ Tennessee, New York, N. Y.	29.81	757.2	81	27.2	87	NNW	.....	.....	0-1	.....	2	.....	Calm	0	0	Smooth	.....	Hazy	
§ Ticonderoga, Nagasaki, Japan	29.84	757.9	73	22.8	95	NNE	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair	
§ Trenton, Marseilles, France	30.05	763.3	67	19.4	55	NW	.....	.....	3	.....	5	.....	.....	4 h'rs	4 h'rs	None	.....	Cloudy	
§ Vandalia, New Bedford, Mass.	29.71	754.6	67	19.4	100	WSW	.....	.....	1	.....	10	.....	Calm	.....	.....	.....	.....	Cloudy	
§ Wabash, Boston, Mass	29.72	754.9	74	23.3	81	NW	11	4.9	.....	.....	8	.....	.....	0	0	.....	.....	Cloudy	
§ Wachusett, S. 42° 48′. W. 80° 36′	29.64	752.8	51	10.6	93	SW	.....	.....	3	.....	10	.....	S	Lt. Drizzle.		Long	S	Cloudy	
Wyoming, Villafranca, France	29.90	759.4	69	20.6	75	SSW	.....	.....	2-4	.....	2	.....	SW	.....	.....	Mod'ate	SW	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 49° 40', W. 43° 26'	29.92	760.0	56	13.3		E			4		10		ENE			Smooth	N	Cloudy	
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent Liverpool, Eng	29.93	760.2	54	12.2	73	SW			3		1		SW	0	0			Clear	
S. S. Ohio, Henry Morrison. N. 38° 53', W. 72° 36' †	29.88	758.9	77	25.0	91	WSW			1		1		W	Mist	Mist	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 39° 37', W. 59° 56' *†	29.92	760.0	72	22.2	76	SW			1		1		SW	0	0	Light	NE	Clear	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger. N. 23° 50', W. 108° 58' †	29.70	754.4	76	24.4	91	SSE			2		2		SSE			Gentle	SSE	Clear	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer. N. 40° 36', E. 176° 40' †	29.66	758.4	49	9.4	85	NNW			6		10		NNW			Heavy	NNW	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 35° 37', E 139° 39' †	29.90	759.4	68	20.0	90	NE			3		k		NE	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder. J. M. Lachlan. N. 40° 20', W. 124° 43' †	29.90	759.4	49	9.4	100	NW			8		Fog		NW			Very Heavy	NW	Foggy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal †	29.88	758.9	50	10.0		SSW			2		2		SW					Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba, N. 34° 24', W. 119° 40' †	29.94	760.5	51	10.6		WNW			3		2		WNW	0	0	Mod'ate	W	Clear	
§ S. S. State of California, G. Dobney. Portland, Oregon †	30.05	763.3	46	7.8		Calm			0		10							Foggy	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.87	758.7	74	23.3	90	NNE			2		5		Calm			Light	SW	Fair	F. A. Johnston.
§S. S. Australia																			Banneman.
§S. S. China, W. B. Seabury																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.23	767.8	55	12.8	68	W			2		0					Smooth	SW	Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 7° 00′ W. 80° 25′.....†	29.96	761.0	78	25.6	86	W			1		5		W	0	0	Large	SW	Fair	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 32° 11′, E. 133° 45′.....†	29.84	757.9	71	21.7	95	SE			3		2		E	0	0			Fair	
§S. S. City of Sidney, H.C. Dearborn, N. 29° 03′, W. 144° 20′...*†	30.31	769.9	68	20.0		ENE			5		5		NE	0	0	Heavy	ENE	Squally	E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, N. 20° 12′, W. 105° 55′.....†	29.85	758.2	79	26.1	100	SW			5		10		SW	0.06	1.5	Rough	SW	Cloudy	
§S.S. Dakota, D. E. Griffiths, N. 42° 43′, W. 124° 40′...†	30.11	764.8	56	13.3	87	N			4		5		W			Mod'ate	NW	Hazy	D. E. Griffiths.
§S.S. Granada, J. M Cavarly N. 27° 24′, W. 114° 54′.....†	29.96	761.0	60	15.6	82	NW			4	5c		NW		0	0	Long	WNW	Hazy	
§S. S. Idaho, E. Alexander, N. 40° 57′, W. 124° 37′...†	29.87	758.7	58	14.4		NNW			6		0					Heavy	NW	Clear	E. Alexander.
§S.S. Zealandia, R.C. Ghest, N. 27° 13′, W. 147° 05′.....	30.25	765.3	69	20.6		NE			4		8		NE			Mod'ate	NE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 40° 36′, W. 61° 27′.....†	29.59	751.6	70	21.1	??	SW			4				SW	0	0	Mod'ate	SW	D. clouds	H. N. Goulden.
S. S. Britanic, H. Perry, N. 50° 05′, W. 21° 47′.....†	29.83	757.7	54	12.2		NW			5		8		N			Mod'ate	NW	Raining	J. Jones.
S. S. Celtic. B. Glendell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 31° 55′, W. 80° 07′.....†	30.17	766.3	82	27.8		SW			5		2		SW	0	0	Mod'ate	SW	Fine	A. R. Mehaffey.
Schr. Adolo Fuller, J. Jorgensen, Boston, Mass	29.73	755.1	73	22.8	59	NW					0							Clear.	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 20° 16′, W. 68° 11′.....†	30.12	765.0	89	31.7		E			1		2		SE	0	0	Mod'ate	E	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 2° 31′, W. 21° 45′.....*†	30.08	764.0	79	26.1		SE			4		2		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Della Hodgkins, Red Bay, Labrador.....†	29.81	757.2				E			1		10		E					Foggy	S. S. Miner.
Brigantine George, W. H Champlin.																			
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.59	751.6	50	10.0	100	SW			6		10		SW	3 h'rs	3 h'rs	Smooth		Heavy rain	James S. Garvin.

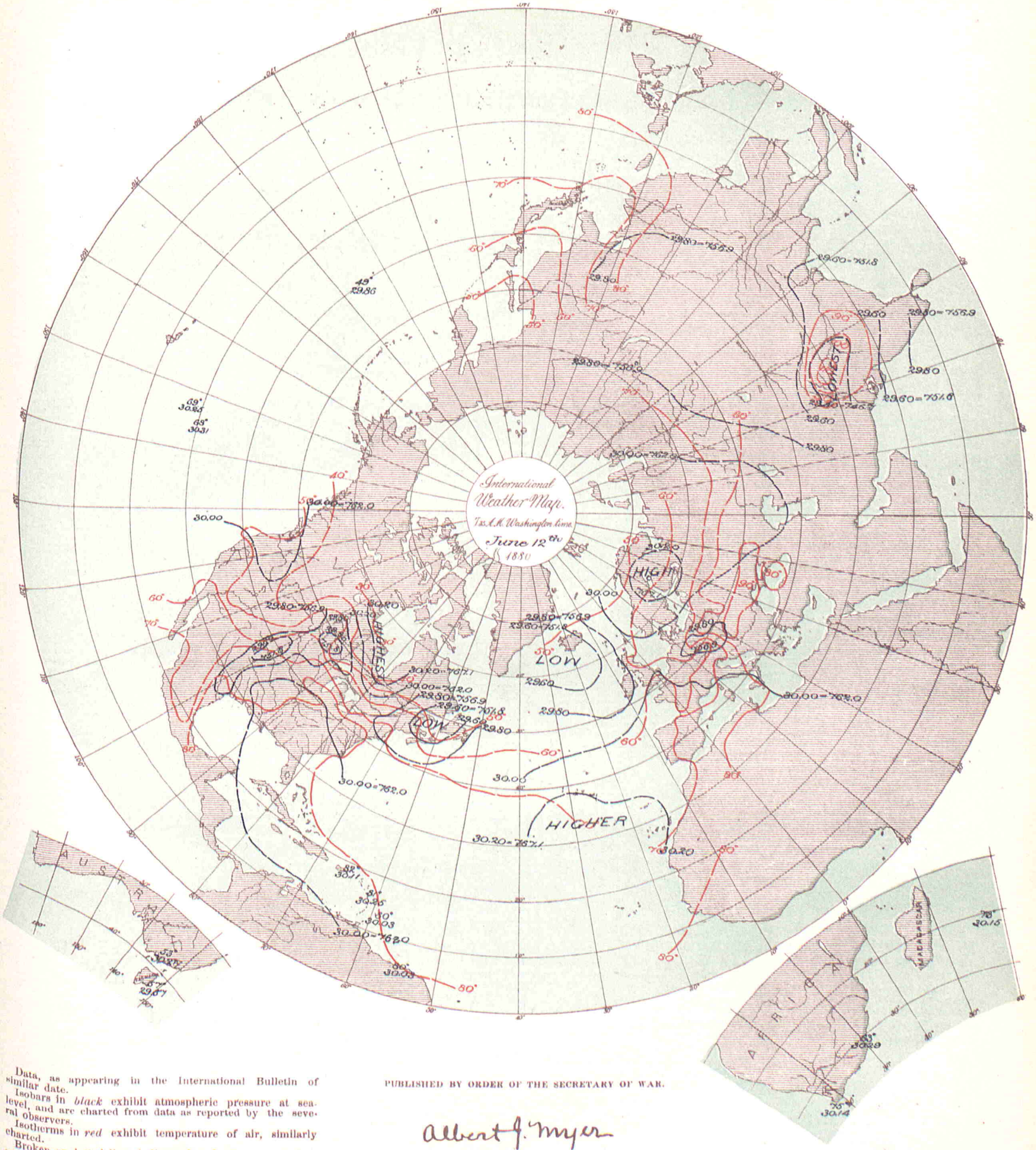
Note.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 13, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Upper. 0—10.	Clouds. Amount. Lower. 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.08	764.0	75.7	24.3	61	Calm			0		0			0	0	Clear	Metge.
Algiers			30.04	763.0	72.0	22.2	74	NE			3		2			0.016	0.4	Fair	Nicolas.
La Calle			30.04	762.9	72.1	22.3	70	E			5		6			0	0	Cloudy	Fonfrède.
Tunis			30.02	762.5															Jacques.
Sfax			30.08	763.9															Gau.
Saida			30.07	763.6															Charon.
Tebessa			30.06	763.5	89.2	31.8	6	SW			3		4			0	0	Cloudy	Watrin.
Geriville			30.07	763.8	80.8	27.1	40	SW			5		0			0	0	Clear	Lonchamp.
Laghouat			30.03	762.7	89.2	31.8	17	SE			4		0			0	0	Clear	Herlin.
Biskra			30.00	762.0	91.0	32.8	38	E			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.37	746.0	29.90	759.5	67.3	19.6	61	W			4		8			0.016	0.4		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.10	739.1	29.83	757.7	77.4	25.2	63	E	3.8	1.7			8			0.028	0.7		Dr. Wierzbicki.
Eperies	29.00	736.5	29.84	757.8	74.5	23.6	61	S			3		10ks			0	0		Julius Mikolik.
Gratz	28.67	728.3	29.90	759.5	62.6	17.0	58	SSW			2		7			0	0		Andreas Rospini.
Hermannstadt	28.44	722.4	29.77	756.2	82.4	28.0	60	NW			3		6			0.315	8.00	Thunder-storm	Prof. A. Gottschling.
Kremsmünster, Observatory	28.57	725.6	29.87	758.7	64.4	18.0	59	WSW			1		4			0.567	14.4		The Staff.
Lemberg	28.85	732.9	29.79	756.6	77.7	25.4	62	S			2		4			0	0		Dr. T. Stanecki.
Pola	29.88	758.9	29.98	761.6	72.1	22.3	60	WSW			1		9			0	0		I.R. Hydrographic Office.
Szathmar	29.42	747.2	29.85	758.2	83.3	28.5	55	NW			2		5			0.098	2.5		Pet. Pancsics, S. J.
Szegedin	29.61	752.0	29.87	758.8	73.0	22.8	48	Calm			0		6			0	0		Karl Stancel.
Trieste	29.88	759.0	29.98	761.6	72.7	22.6	65	W			1		7			0	0		P. Busin.
Vienna	29.17	741.0	29.92	760.0	70.3	21.3	52	W			1		5			0.322	8.2		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by he Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.79	756.7	29.98	761.6	65.8	18.8	54	WNW			3	3	4	ESE	NW	0	0		Royal Observatory.
Furnes																			M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 11, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.94	760.5	62.3	16.8		SSE	11	4.9			4			0.030	0.76	Blue sky	W. Boswell.
Ardrossan																			G.Carrick.
Armagh, (Observatory)	29.70	754.4	29.93	760.2	60.7	15.9		WNW	5	2.2									S. Call.
Bidston (Liverpool Obs)			29.96	761.0	58.6	14.8		SSE	11	4.9			10					Overcast	John Hartnup.
Bolton (Sharples)	29.42	747.3	29.93	760.2	62.3	16.8		SW	6	2.7			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire																			J McLandsborough.
Bridgetown, Barbadoes	30.00	762.0	30.03	762.7	83	28.3		NE			2		3			0	0	D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.88	758.9	29.98	761.5	74.6	23.3		SW			1		1					D. clouds	H. Todd.
Cardington			29.99	761.7	70.4	21.3		W			0.4		4					D. clouds	John McLaren.
Chatham (School M. E.)	29.88	758.9	30.01	762.2	69.9	21.1		Calm			0	5ck						D. clouds	Lance Crp'l Hocker,R.E
Donaghadee	29.89	759.2	29.93	760.2	55	12.8		NE			4		10					Overcast	J. Mac Gowan.
Dover	29.98	761.5	30.01	762.2	63	17.2		WSW			4		0					Clear.	J. Costello.
Falmouth (Observatory)	29.75	755.6	29.98	761.5	54.1	12.3		S			2		10					Rain & fog	The Staff.
Fort Napier, Natal	27.96	710.2	30.17	766.3	66.4	19.1		NE			1		0					Blue sky	Corp'l H.Coombs,A.H.C.
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	83	28.3		NE			1		10					Raining	
Galway (Queen's College)			29.95	760.7	61	16.1		WSW			2		6					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.04	763.0	30.09	764.3	77.3	25.2		SE			1		2					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.72	754.9	29.92	760.0	56.3	13.5		S			3		10					Overcast	D. G. Maclean.
Great Yarmouth	29.99	761.7	30.00	762.0	60	15.6		SSE			1		0					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.84	757.9	30.01	762.2	67.6	19.8		SW			1		7					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.80	756.9	30.02	762.5	60	15.6		SSW			2		7					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.14	765.5	30.26	768.6	58	14.4		S			4		10n					Raining	M. P. Moyle.
Holyhead	29.89	759.2	29.93	760.2	56	13.3		SSW			2		10					Raining	John Tilston.
Jersey	29.79	756.7	30.08	764.0	57.9	14.4		S			2		10					Threatening	J. Fisher.
Kew (Observatory)	29.96	761.0	30.00	762.0	62.5	16.9		SSW	12	5.4			7					Threatening	The Met'g'l Office.
Leicester (Museum)	29.73	755.1	29.98	761.5	65.6	18.7		SW			1		5					D. clouds	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.96	761.0	30.04	763.0	76	24.4		NW			2		0					Blue sky	A. King.
Nairn	29.79	756.7	29.88	758.9	60	15.6		Calm			0		10					Drizzling	W. D. Penny.
Nassau, Bahamas			30.08	764.0	81.2	27.3		NE			1		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.79	756.7	29.98	761.5	72.3	22.4		SSW			2		6k		SW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.46	748.3	29.96	761.0	66.2	19.0		SSW			3		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.77	756.1	30.03	762.7	66.4	19.1		S			2		6					D. clouds	The Staff, for E. J. Stone, Esqs
Plymouth	29.92	760.0	30.00	762.0	56.5	13.6		SSW			2		10					Drizzling	John Merrifield.
*Roche's Point	29.92	760.0	30.04	763.0	62	16.7		NNW			4		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.78	756.4	29.94	760.5	53	11.7		S			4		10					Raining	John C. Walker.
Sandwick Manse, Orkneys			29.91	759.7	56.2	13.4		S	17	7.6			10					Drizzling	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.76	755.9	29.83	757.7	80.6	26.7		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.71	754.6	29.98	761.5	70.0	21.1		S			2		5			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.90	759.4	29.94	760.5	61.7	16.5	78	W			3		10			0	0	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.98	761.5	63.3	17.4		NE	13	5.8			8					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.79	756.7	30.00	762.0	69.1	20.6		S			1		7					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	29.96	761.0	29.98	761.5	56	13.3		S			4		10					Raining	W. Newcombe.
Valencia (Observatory)	29.99	761.7	30.01	762.2	57.2	14.0		WNW	14	6.3			7					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.02	762.5	30.06	763.5	75.0	23.9	40	WNW	4.8	2.1		2	6			0	0	Clear.	The Staff, for D. Gill.
Hobart Town, Tasmania			29.53	750.0	56.0	13.3	66	SW			2		10kn			0.30	7.6	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.94	760.5	60.0	15.6		SE			2		10ks			0.08	2.0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.94	760.5	30.14	765.5	71.0	21.7	82	E	8.5	3.8			9			0.03	0.8	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.79	756.6	29.88	758.9	52.1	11.2	63	NNE	24	10.7			2			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.90	759.4	54	12.2		S			8	5	5	S		0.6	15.		J. Youngclause.
North Unst, Shetland I's			29.95	760.7				S			6	8	2	S		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 9 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert																			Capt.J.P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Dommewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 50° 05', W. 12° 35'			30.07	763.8	56	13.3		WNW			4		5			5	WNW	D. clouds	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German, N. 46° 25', W. 7° 34'			29.98	761.5	57	13.9		NNW			6		8					D. clouds	Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	69.8	21.0	83	NE			1	8cs				0.47	12.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.88	758.9	29.93	760.1	63.0	17.2	83	NNE			2		0						
Fanöe	29.87	758.8	29.89	759.3	69.6	20.9	84	E			4		5						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.48	747.4	29.47	748.5	55.8	13.2	75	SE			2		8					Raining	
Thorshavn (Faröe)	29.74	755.3	29.77	756.2	54.1	12.3	93	S			6		10.						
Vestervig	29.87	758.6	29.96	761.0	68.7	20.4	75	NE			6		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.56	750.9	30.11	764.9	66.4	18	57	SW			1		10kn			0	0	Covered	Collignon, Director.
Amiens, Normal School	29.95	760.6	30.05	763.3	74.5	23.6	96	NNW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.77	756.2	30.03	762.7	55.8	13.2	77	NW			1		2s	E		0	0		Klein, Commandant.
Avignon, Normal School	29.95	760.8	30.03	762.8	73.4	23	44	N			1		10			0	0	Covered	Giraud, Director.
Bar-sur-Seine																0.213	5.4		C. Saillard, Director.
Beauvais, Normal School	29.80	756.8	30.06	763.4	67.3	19.6	45	WNW			2		5		NW	0.010	0.25	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.15	740.4	30.08	763.9	60.4	15.8	79	SSE			1		8		SW	1.122	28.5	Very cloudy	A. Carré, Director.
Bordeaux	29.79	756.7	29.99	761.7	75.0	23.9	93	SE			1		8	SW	NW	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.24	742.7	30.17	766.2	68.4	20.2	54	N			2		10n	N	N	0.559	14.2	Covered	Marlot, Director.
Bourges, Normal School	29.60	751.8	30.14	765.6	65.3	18.5	70	N			1		ck	N		0	0		M. Gence, Director.
Brest, Naval Observatory	29.77	756.2	30.02	762.4	61.5	16.4	66	SW			4		10		SW	0.020	0.50	Raining	Ch. de Rermaree, Dir.
Caen, Normal School	29.97	761.2	30.04	763.1	63.7	17.6	94	SW			1		8		SW	0	0	Very cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.58	751.2	29.97	761.2	79.5	26.4	49	SE			1		2		SE	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.73	755.2	30.04	763.1	72.3	22.4	34	W			1		0			0	0	Clear	Judot, Director
Chartres, Normal School	29.50	749.3	30.05	763.3	69.8	21	83	SE			1		6			0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.69	728.8	30.00	762.1	69.6	20.9	50	N			1		2			0.114	2.9		Allnard, Director.
Commercy, Normal School	29.17	740.8	30.01	762.2	65.5	18.6	59	WNW			3		k		WNW	0.295	7.5		Dr. Coullet, Director.
Commune de Gréasque*	28.91	734.4	30.06	763.4	72.0	22.2	41	NW			3		2		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.25	743.0	30.00	762.0	67.6	19.8	68	NW			2		kn		SW	0.335	8.50		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.88	759.0	30.10	764.4	69.8	21.0	57	SE			1		5		E	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.77	756.1	30.08	763.9	68.4	20.2	65	SW			3		8		W	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.17	740.9	30.08	764.0	65.3	18.5	81	NE			2		2k		N			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	30.00	762.0	30.10	764.5	65.8	18.8	50	SE			3		8		SE	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.46	748.2	30.07	763.6	68.9	20.5	52	NNE			1		5		N	0.173	4.4	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.83	757.7	30.02	762.5	69.8	21.0	59	W			2		3		W	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.00	736.5	30.03	762.8	59.7	15.4	93	NW			3		kn		NW	0.362	9.2		Barbier, Director.
Mont-Louis	24.90	632.4	30.13	765.4	60.4	15.8	50	SW	9.4	4.2			3		W	0	0		M. Cave, for Dr. Fines.
Nice	29.94	760.5	29.98	761.4	70.2	21.2	61	E			2		1	SE	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.82	757.5	30.02	762.6	78.3	25.7	49	Calm			0		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.93	760.1	30.03	762.7	68.5	20.3	53	SE	7.4	3.3			6	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.62	574.5			50.0	10.0							10		W	0.047	1.2	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.00	736.7	30.03	762.8	74.8	23.8	35	N			1		5	N	N	0	0	Cloudy	M. Tallien
Puy de Dome (Summit) Obs	25.24	641.0			51.8	11.0	77	E			2		2			0.205	5.2	Misty	Allnard, Director.
Rochefort, Naval Obs'y	30.03	762.8	30.07	763.6	73.2	22.9	40	E			1		5	E	E	0	0	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.95	760.7	30.04	762.9	73.0	22.8	11	SSW			1		0			0	0	Clear	Platrier, Director.
Saint Malo (Port) Obs'y	30.02	762.6	30.06	763.4	59.9	15.5	76	SSW			2		8	SSW	SSW	0	0	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.89	759.2	30.06	763.4	68.4	20.2	45	WNW			1		5	SSW	W	0	0		E. Renou, Director.
Tarbes, Normal School	29.02	737.2	30.08	764.1	66.2	19	63	E			1								T. Huguet, Director
Toulouse, Observatory	29.35	745.4	30.11	764.8	72.3	22.4	41	N			1		2			0	0	Slightly cld'y	B. Baillaud, Dir.
Tours	29.87	758.6	30.07	763.6	70.3	21.3	41	WNW			1		6		W	0	0	¾ covered	M. de Tastes.
Versailles, Observatory	29.57	751.1	30.07	763.6	68.0	20.0	45	WNW			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.26	743.2	29.95	760.7	69.8	21	54	NNW			1		8			0.465	11.8	Very cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.18	766.5	30.21	767.2	81.0	27.2										0.71	18.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.78	756.4			69.4	20.8	47	SW			1		5		W	0.004	0.1		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.80	756.8	29.82	757.4	68.2	20.1	82	ESE	11.9	5.3			10			0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 368 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,680.40 m., or 5,5[illegible]4.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,768 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.04	737.6	29.90	759.4	63.9	17.7	77	W			4		8k	W		0.386	9.8		Prof. Dr. Hoh.
Berlin	29.67	753.7	29.84	757.9	77.7	25.4	43	S			2		5			0.055	1.4		Prof. Dr. Arndt
Breslau	29.38	746.2	29.91	759.6	72.7	22.6	48	WNW			2		2			0	0		Royal University Obs'y
Carlsruhe	29.56	750.7	29.98	761.6	55.0	12.8	95	SW			4		10	SW		1.417	36.0	Raining	Albert Senz.
Cassel	29.27	743.4	29.87	758.6	59.4	15.2	92	NW			4		10	W		0.786	19.98		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.63	752.6	29.99	761.8	60.8	16.0	65	W			0		10			0.669	17.0		Physical Society
Friedrichshafen	28.59	726.3	30.03	762.8	53.6	12.9	86	W			6		10	W		0.406	10.3	Raining	Chief Telegrapher Wilhelm.
Hamburg	29.79	756.7	29.86	758.5	63.5	17.5	87	NE			3		8			0.740	18.8		Dr. Reinhold Kleeman.
Kiel	29.86	758.5	29.88	758.9	61.0	16.1	86	NE			2		10			0.087	2.20		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.85	758.1	29.93	760.1	78.4	25.8	58	E			5		1	E		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.47	748.4	29.87	758.7	73.2	22.9	56	S			3		5	SSW		0.240	6.1		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.62	752.4	29.85	758.1	70.7	21.5	71	SSE			2		7ks	SSE		1.705	43.3		Dr. Assmann.
Memel	29.94	760.4	29.98	761.6	77.0	25.0	67	ESE			4		3ks						Reinbrecht & Issermann.
Munich	28.15	715.0	30.01	761.3	56.7	13.7	72	SW			5		10	SW		0.043	1.1		Dr. C. Lang.
Neufahrwasser	29.88	758.9	29.89	759.3	63.7	17.6	80	NE			3		10			0.220	5.6	Thunder-storm.	A. Lothes.
Neustadt (Palatinate)	29.43	747.4	29.95	760.7	56.7	13.7	85	W			3		10	W		1.378	35.0		Reallehrer Dicknether.
Posen	29.58	751.3	29.85	758.3	76.8	24.9	4[illegible]	W			2		3			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.48	748.9	30.03	762.8	55.9	13.3	100	S			2–3		10					Raining	Imp. University Observatory.
Stuttgart	29.00	736.7	29.89	759.3	56.1	13.4	78	W					10			0.228	5.8	Raining	Prof. Dr. Schoder.
Thorn	29.66	753.4	29.85	758.1	79.9	26.6	52	SW			4		4			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.50	723.8	30.08	763.9	55.0	12.8	93	WNW	5.1	2.3			10			0.236	6.0	Rain & fog	Reallehrer J. Hopfner.
Wustrow	29.84	758.0	29.87	758.7	63.0	17.2	70	ENE			4		4s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.51	749.6	29.89	759.1	87.1	30.6		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.43	747.5	29.48	748.8	86.0	30.0	84	SSW	40.6	18.2			0			0	0	Blue sky	
Deesa	29.01	736.8	29.46	748.4	98.0	36.7	37	SW	22.8	10.2			0			0	0	Misty	
Bombay	29.66	753.2	29.69	754.2	86.4	30.2	72	WSW	16.0	7.2			4		SW	0	0	D. clouds	
Poona (Yarrowda)	27.84	707.1	29.67	753.7	81.8	27.7	51	WSW	25.0	11.2			6	Calm	WNW	0	0	D. clouds	
Belgaum	27.21	691.1	29.76	755.8	72.6	22.6	84	SW	9.0	4.0			8	E	SW	0	0	D. clouds	
Lahore	28.59	726.1	29.28	743.6	111.8	44.3	15	SW	3.2	1.4			0			0	0	Blue sky	
Roorkee	28.50	724.0	29.38	746.2	87.4	30.8	74	SW	8.0	3.6			5			0.51	13.0		
Agra	28.82	731.9	29.34	745.3	107.1	41.7	27	W	6.1	2.7						0	0		
Nagpur	28.54	725.0	29.58	751.4	77.7	25.4	89	S	6.0	2.7			10			0.23	5.8	Overcast	
Jubbulpore	28.18	715.8	29.51	749.6	88.0	31.1	63	SW	5.8	2.6			10			0.44	11.2	Raining	
Lucknow	29.06	738.1	29.42	747.2	98.0	36.7	53	ENE	5.7	2.6			2		NNW	0	0	D. clouds	
Allahabad	29.09	738.9	29.39	746.4	97.2	36.2	48	ESE	3.6	1.6			8	NW	SE	0	0	D. clouds	
Patna	29.26	743.2	29.44	747.7	89.9	33.2	70	ENE	2.3	1.0			4	ENE	ENE	0	0	D. clouds	
Hazaribagh	27.49	698.2	29.46	748.4	81.8	27.7	81	WSW	5.4	2.4			10			0.35	8.9	Thunder-storm.	
Cuttack	29.43	747.6	29.51	749.6	87.1	30.6	67	Calm	2.4	1.1			10			0	0	Overcast	
Calcutta (Alipore)	29.45	748.0	29.47	748.5	84.7	29.3	80	S	4.0	1.8			10	SE	SE	0	0	Overcast	
Goalpara	29.11	739.3	29.51	749.5	82.0	27.8	89	Calm	3.3	1.5			6			0.08	2.0	D. clouds	
Chittagong	29.50	749.2	29.58	751.4	79.1	26.2	94	ESE	8.2	3.7			4			0.16	4.1		
Sibsagar	29.24	742.6	29.57	751.0	82.2	27.9	86	ESE	2.4	1.1			10	W	W	0.31	7.9	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.56	750.9	29.96	761.0	69.3	20.7	53	W	1.8	0.8			6			0.028	0.7		Prof. Giovanni Clodig
Milan	29.44	747.7	29.93	760 1	73.0	22.8	37	S	4.9	2.2			6	WSW		0.016	0.4		Prof. Schiaparelli.
Padua	29.36	758.5	29.97	761.3	69.8	21.0	53	W	2.5	1.1			9	W		0.083	2.1		Prof. Dott. Lorenzoni
Moncalieri	29.04	737.7	29.93	760.2	68.9	20.5	57	S	2.5	1.1			6	SW		0	0		Prof. P. F. Denza.
Genoa	29.83	757.7	30.02	762.5	66.2	19.0	61	SE	13.0	5.8			6	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.06	712.7	29.93	760.1	66.6	19.2	63	NW			4		3	S		0.016	0.4		Prof. D. C. Bruno.
Pesaro	29.94	760.5	29.99	761.7	70.5	21.4	50	NE	4.3	1.9			7	W		0	0		Prof. Luigi Guidi.
Florence	29.78	756.3	30.03	762.7	71.8	22.1	54	SW			2		9	WSW		0	0		Cav. F. Meucci.
Leghorn	30.00	761.9	30.08	764.0	68.7	20.4	63	W	11.9	5.3			7			0	0		Prof. P. Monte.
Rome	29.89	759.2	30.07	763.6	72.0	22.2	51	S					7			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.3	30.02	762.5	74.3	23.5	86	SSE	9.8	4.4			0			0	0		Prof. C. De Giorgi.
Cosenza	29.16	740.6	30.01	762.2	84.6	29.2	59	NW	3.1	1.4			0			0	0		Prof. D. Conti.
Cagliari	29.84	757.9	30.03	762.8	72.9	22.7	49	SE			4		1			0	0		Prof. A. Pacinotti.
Palermo	29.84	757.9	30.09	764.2	71.6	22.0	61	ENE	8.1	3.6			0			0	0		Prof. G. Ciacciatore
Syracuse	29.98	761.5	30.02	762.6	80.8	27.1	70	S	3.8	1.7			0			0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.54	750.3	30.05	763.3	71.6	22.0	58	NW	2.5	1.1			4			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					70.1	21.2	77	NE	5.2	2.3		ck	3ks			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.69	754.1	29.88	758.9	68.4	20.2	98	N	3.1	1.4			10n			0.960	24.38	Raining	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.85	758.2	29.91	759.7	60.9	16.1	80	SE	4.0	1.8		0	0			0	0	Clear	The Staff.
Wakayama	29.86	754.4	29.91	759.7	67.5	19.7	79	NW	2.1	0.9		0	0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.6	30.01	762.3	59.0	15.0	76	E			1		10n			0.14	3.6	Covered	Prof. L. Perez.
Guanaxuato	23.66	601.1			61.3	16.3	84	Calm	0	0		10n	9n			0.29	7.3	Covered	Vicente Fernandez.
Leon	24 40	619.7	30.01	762.2	63.9	17.7	90	E			1		10kn			0.06	1.4	Covered	Prof. M. Leal.
Mazatlan	29.66	753 4	29.92	759.9	78.2	25.7	82	Calm			0	10cs	0	NE		Inap.	Inap.	Covered	F. Quijano, C. E.
Mexico, Central Observatory	23.08	586.3	30.04	763.0	56.7	13.7	76	Calm	0	0		9ck	0			0	0	Very cloudy	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.5	29.82	757.4	64.0	18.3	84	SE			1	2c	7k	SE	SE	0	0	Very cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.42	594.9	30.13	765.4	56.8	13.8	68	Calm	0	0		2ck	0	E		0	0	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.2	30.06	763.5	63.9	17.7	68	SE			1		10		E	0.520	13.2	Covered	G. Barroeta, M. D.
Tlacotalpam	29.88	759.0	29.89	759.3	76.1	24.5	91	SE			1	4	4	N	NE	0	0	Cloudy	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.58	573.4	30.12	765.0	59.7	15.4	80	SW			1		10n		SW	0.51	13.0	Covered	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.03	762.8	30.03	762.8	62.4	16.9		W			3					0.008	0.2		
Groningen	29.91	759.6	29.96	761.0	55.0	12.8		N			4					0.230	6.0		
Helder	29.97	761.3	29.97	761.3	52.7	11.5		NW			4					0.051	1.3		
Hellevoetsluis	30.01	762.2	30.01	762.2	62.8	17.1	70	W			2					0	0		
Utrecht	29.95	760 7	30.00	761.9	61.0	16.1	73	WNW			2		8			0.134	3.4	Very cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.01	762.2	30.07	763.6	68.0	20.0	44	WNW	5.4	2.4			8			0	0		
Brönø	30.12	765.1	30.16	766.1	63.3	17.4	44	N	9	4			0			0	0		
Christiania	29.98	761.4	30.12	765.0	72.7	22.6	35	ENE	9	4			8			0.004	0.1		
Tromsö	30.24	768.1	30.30	769.5	52.5	11.4	54	E	7	3			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.15	765.8	30.36	771.1	71.2	21.8	91	W			4		4			0.079	2.0		Dr. J. A. Sampaio.
Campo Major	29.09	738.9	30.03	763.9	68.0	20.0	57	WNW	3.1	1.4			9			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.17	766.4	30.26	768.6	69.4	20.8	73	SW	4.9	2.2			9			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.82	757.4	30.18	766.5	63.7	17.6	88	SW	12.5	5.6			9			0.004	0.1		The Staff.
Ponta Delgada (Azores)	30.28	769.1	30.35	770.9	71.2	21.8	81	W	9.4	4.2			3			0.039	1.0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.87	758.8	73.0	22.8		N			2		8			1	N		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, s. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			30.00	762.0	65.3	18.5		WNW			3		4		WNW	2	NNW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.94	760.5	82.4	28.0		E			3		10		E	2	SE	5	Raining	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation: no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.83	757.6	29.85	758.1	54.9	12.7	67	NNE	4	2			10						Capt. Sseliwerstow.
Astrakhan	30.02	762.4	29.93	760.3	90.3	32.4	23	SSE	7	3			3s						Capt. Wisganow.
Barnaul	29.30	746.6	29.89	759.1	54.5	12.5	54	W	4	2			10					Light clouds	Meteorological Obs.
Dorpat	29.97	761.3	30.21	767.3	70.5	21.4	39	ENE	11	5			0						Prof. Dr. Weihrauch.
Ekaterinburg	28.89	733.7	29.82	757.4	66.9	19.4	28	NNW	13	6			10					Solar corona	Meteorological Obs.
Irkutsk																		[& halo	
Kasan	29.77	756.1	30.04	762.9	56.5	13.6	95	NNE	2	1			10						Physical Cabinet.
Kertch	29.87	758.6	29.89	759.1	74.5	23.6	93	SSE	4	2			3						Lagorio.
Kieff	29.21	741.8	29.79	756.7	85.3	29.6	52	SE	11	5		ck	6ks						Physical Cabinet.
Krotkowo*	29.58	751.4	30.03	762.7	82.4	28.0	46	NW	0.2	0.1			9						Cand. Fatjanow.
Lugan	29.72	755.0	29.91	759.8	93.0	33.9	25	ESE	22	10			0						Meteorological Obs.
Moscow	29.62	752.4	30.15	765.9	66.7	19.3	63	ENE	10.1	4.5			6ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.80	756.8	29.87	758.6	84.9	29.4	51	NE	45	20			8ks;n						Kurdakof.
Nikolaievsk, on the Amoor	29.91	759.7	30.00	761.9	48 4	9.1	83	Calm	0	0			10n						
Nukuss																			
Orenburg																			
Pekin (China)	29.65	753.0	29.79	756.6	70.3	21.3	81	SE	7	3			6ks					Thunder storm.	Physical Observatory.
St. Petersburg	30.26	768.7	30.28	769.1	66.6	19.2	42	E	9	4			0						Central Physical Obs.
Tashkend	28.18	715.8	29.63	752.7	88.5	31.4	57	Calm	0	0			0						Teich, A. M.
Tiflis	28.52	724.4	29.85	758.3	84.2	29.0	45	SE	4	2			5ks						Physical Observatory.
Vladivostock																			
Warsaw	29.41	748.1	29.85	758.3	77.4	25.2	35	NW	4	2		1c							Astronomical Obs.
Wilna	29.57	751.1	29.97	761.2	76.8	24.9	56	NE	7	3			8					Heavy clouds	Astronomical Obs.
Yeniseisk	29.47	748.5	29.74	755.5	66.0	18.9	80	SSE	4	2			10					Raining	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.93	760.2	30.03	762.8	71.6	22	56	SW	4.5	2.00			0			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	30.01	762.2	30.07	763.6	71.6	22.0	59	NW	1.9	0.83		2	6	SE		0	0	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.13	689.0			62.2	16.8	63	SW	4.3	1.94			9			0	0	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.87	707.8	29.99	761.8	76.3	24.6	30	SW	17.2	7.67		0	9			0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.94	760.5	30.09	764.2	82.2	27.9	45	SE	1.8	0.81		3	5	E		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.18	741.2	30.08	763.9	59.7	15.4	85	NW	6.9	3.1			10			0.087	2.2	Misty	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.03	762.7	30.09	764.4	81.9	27.7	79	E	4.5	2.0		1cs	0	W		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.77	756.3	29.83	757.6	81.0	27.2	86	E	2 2	1.0		0	9kn		W	0.20	3.2	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.05	763.2	30.14	765.7	70.9	21.6	58	WNW	11.9	5.3		5	2	W	W	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.5	30.11	764.8	83.1	28.4	70	SE	2.5	2.01		1k	3kn	SE	SE	0	0	Cloudy	Enriquetiades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.27	768.8	30.31	769.8	59.0	15.0	.....	N	.....	.....	2	.....	1	.....	.....	0	0	.....	
Umea	30.25	768.4	30.30	769.7	65.8	18.8	45	SW	.....	.....	6	.....	2	.....	.....	0	0	.....	
Hernosand	30.26	768.7	30.32	770.0	61.5	16.4	56	SSW	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	30.05	763.2	30.28	767.7	64.4	18.0	33	ENE	.....	.....	6	.....	2	.....	.....	0	0	.....	
Wisby	30.02	762.1	30.07	763.6	67.6	19.8	57	ESE	.....	.....	6	.....	0	.....	.....	.....	.....	.....	
Sub-Series.																			
Upsala	30.18	765.2	30.21	767.4	69.8	21.0	42	ESE	11.6	5.2	.....	.....	2	WSW	ESE	0	0	.....	Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr.
Saga	.....	.....	.....	.....	M. von Krusenstierna.
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.64	727.5	30.03	762.8	67.1	19.5	70	SW	.....	.....	2	.....	2	.....	.....	0.173	4.4	Cloudy.	The Observatory.
Zurich	28.43	722.1	30.07	763.7	53.6	12.0	94	W	.....	.....	1	.....	10	.....	.....	0.945	24.0	Raining	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, +1.1 mm.; Thermometer, —1.0 Cent. Relative Humidity, +14 per cent.

NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.88	758.9	84.2	29.0	45	SSE	6	2.5	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.11	764.8	75.4	24.1	.....	W	.....	.....	2	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.79	756.7	78.4	25.8	61	WNW	.....	.....	2	.....	2s	.....	.....	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hon. J. Ferguson.
Chatham, N. B.	29.39	746.5	29.45	748.0	56.8	13.8	62	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	29.37	746.0	29.41	747.0	59.0	15.0	60	NW	7	3.1	.....	0	2s	.....	.....	0.010	0.25	Fair.	H. J. Cundall, C. E
Cornwall, Ontario	29.44	747.8	29.63	752.6	59.2	15.1	89	W	.....	.....	1	.....	10s	.....	.....	0.009	0.23	Cloudy.	James Smith, M. A.
Dalhousie, N. B.	29.29	744.0	29.45	748.0	51.0	10.6	57	W	.....	.....	4	.....	9ks	.....	.....	0	0	Cloudy.	H. A. Johnson.
Father Point, Quebec	29.57	751.1	29.59	751.6	50.8	10.4	89	N	18	8.0	.....	0	1ks	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.46	748.3	29.52	749.8	61.0	16.1	51	NW	12	5.4	.....	0	1ks	.....	.....	0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.13	739.9	29.96	761.0	46.7	8.2	87	N	4	1.8	.....	0	4ks	.....	.....	0.610	15.49	Clearing.	James Stewart.
Granton, Ontario	28.67	728.2	29.71	754.6	73.0	22.8	90	W	.....	.....	2	2cs	0	W	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.34	745.2	29.46	748.3	68.0	20.0	54	W	10	4.5	.....	0	0	.....	.....	0.014	0.35	Clear.	A. Allison.
Hamilton, Ontario	29.30	744.2	29.68	753.9	74.3	23.5	86	SW	.....	.....	3	0	0	.....	.....	0.37	9.4	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.36	745.7	29.68	753.9	59.6	15.3	88	S	3	1.3	.....	.....	10n	.....	.....	0.24	6.1	Heavy rain.	S. Woods, M. A.
Little Glace Bay, N. S.	29.30	744.2	29.34	745.2	62.0	16.7	52	SW	8	3.6	.....	6k	0	SW	.....	0	0	Fair.	C. H. Rigby.
Montreal, Quebec	29.49	749.0	29.68	753.9	59.0	15.0	83	NE	4	1.8	.....	.....	10s	.....	.....	0.01	0.3	Cloudy.	C. H. McLeod, C. E.
Moose Factory, Ontario	29.98	761.5	30.02	762.5	42.0	5.6	75	N	.....	.....	3	.....	10n	.....	.....	0	0	Cloudy.	J. R. Nason.
Norwood, Ontario	28.99	736.3	29.67	753.6	58.7	14.8	96	SE	6	2.7	.....	.....	10ks	.....	.....	0	0	Cloudy.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	28.95	735.3	29.61	752.1	64.0	17.8	92	S	9	4.0	.....	.....	10n	.....	.....	0.02	0.5	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.95	735.3	29.67	753.6	60.7	15.9	94	W	.....	.....	1	.....	10n	.....	.....	3.10	81.3	Thunder-storm.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.06	738.1	29.72	754.9	72.1	22.3	90	SW	14	6.3	.....	0	0	.....	.....	0.12	3.0	Clear	H. Morgan.
Port Stanley, Ontario	29.14	740.1	29.76	755.9	70.0	21.1	90	SW	8	3.6	.....	4ck	0	W	.....	1.54	39.1	Fair.	M. Payne.
Quebec, Quebec	29.32	744.7	29.64	752.8	56.0	13.3	81	W	.....	.....	1	0	0	.....	.....	0	0	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.22	742.2	29.66	753.4	56.0	13.3	80	NE	6	2.7	.....	3ck	0	W	.....	0.04	1.0	Fair.	W. H. McIntyre.
St. John, N. B.	29.36	745.7	29.52	749.8	62.0	16.7	72	NW	11	4.9	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	28.98	736.1	29.67	753.6	63.3	17.4	86	SW	14	6.3	.....	1ck	0	.....	.....	0.02	0.5	Clear	K. Stewart.
Stratford, Ontario	28.47	723.1	29.68	753.9	69.8	21.0	87	NW	12	5.4	.....	3ck	0	NW	.....	0.051	1.30	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.40	746.7	29.44	747.8	62.0	16.7	66	SW	10	4.5	.....	9k	0	W	.....	0.22	5.6	Fair.	T. C. Hill, C. E.
Toronto, Ontario	29.31	744.5	29.68	753.9	65.8	18.8	93	NE	3	1.3	.....	2k	Haze	NW	.....	0	0	Hazy.	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.68	728.5	29.68	753.9	76.8	24.9	78	SW	17	7.6	.....	4k	0	W	.....	0	0	Fair.	Professor Wolverton.
Yarmouth, N. S.	29.50	749.3	29.56	750.8	59.1	15.1	69	NW	4	1.8	.....	3ck	0	W	.....	0	0	Fair.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.24	742.7	29.49	749.0	45	7.2	92	S	10	4.5	.....	.....	10n	.....	.....	0.25	6.3	Raining.	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.93	745.0	46.4	8.0	.....	W	.....	.....	3	.....	.....	.....	.....	1.46	37.1	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.63	752.6	29.70	754.4	72	22.2	67	NW	7	3.1		2k	0	NW		0.03	0.8	Fair	
Alpena, Michigan	29.05	737.9	29.66	753.4	67	19.4	64	NW	16	7.2		5cs	0	NW		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.00	762.0	82	27.8	63	NW	7	3.1		0	0			0	0	Clear	
Atlantic City, New Jersey	29.74	755.4	29.75	755.6	78	25.6	83	NW	7	3.1		5k	Haze	NW	Calm	0.25	6.3	Fair	
Augusta, Georgia	29.85	758.2	30.04	763.0	83	28.3	67	NW			1	Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	29.75	755.6	29.79	756.7	78	25.6	61	NW	10	4.5		0	0			0.12	3.0	Clear	
Barnegat, New Jersey	29.72	754.9	29.74	755.4	75	23.9	86	NW	5	2.2		8ck	0	NW		0.50	12.7	Fair	
Bismarck, Dakota	28.15	715.0	30.00	762.0	56	13.3	50	NE	4	1.8		0	0			0	0	Clear	
Boerne, Texas	28.50	723.9	29.76	755.9	73	22.8	95	SE	12	5.4			10ks		SE	0.98	24.9	Cloudy	
Boise City, Idaho	27.02	686.3	29.98	761.5	58	14.4	50	SE	4	1.8		5k	0	NW		0	0	Fair	
Boston, Massachusetts	29.52	749.8	29.66	753.4	69	20.6	65	NW	11	4.9		5c	0	Calm		0.08	2.0	Fair	
Brackettville, Texas	28.76	730.5	29.77	756.1	75	23.9	95	SE	12	5.4			10s		E	0.29	7.4	Cloudy	
Breckenridge, Minnesota	28.95	735.3	29.93	760.2	56	13.3	87	Calm	0	0		10c	0	Calm		0	0	Cloudy	
Brownsville, Texas	29.86	758.4	29.90	759.4	83	28.3	87	SE	3	1.3		0	0			0.03	0.8	Clear	
Buffalo, New York	29.03	737.3	29.69	754.1	66	18.9	95	SW	14	6.3			10s		SW	0.31	7.9	Cloudy	
Burkes, Arizona					63	17.2	33	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.40	746.7	29.68	753.9	64	17.8	73	SW	1	0.4		5ck	0	W		0.01	0.3	Fair	
Cairo, Illinois	29.67	753.6	30.04	763.0	83	28.3	67	S	4	1.8		0	0			0	0	Clear	
Campo, California	27.38	695.4	29.95	760.7	36	2.2	71	NW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.85	758.2	29.86	758.4	80	26.7	74	NW	15	6.7		2cs	0	Calm		0.32	8.1	Clear	
Cape Henry, Virginia	29.80	756.9	29.82	757.4	76	24.4	77	W	10	4.5		8ck	0	NW		0.35	8.9	Fair	
Cape Lookout, N. Carolina	29.89	759.2	29.90	759.4	78	25.6	82	NW	12	5.4		5c	Haze	W	Calm	0.25	6.3	Fair	
Cape May, New Jersey	29.73	755.1	29.76	755.9	71	21.7	90	W	5	2.2		2c	0	W		0.80	20.3	Fair	
Castroville, Texas																			
Cedar Keys, Florida	30.08	764.0	30.11	764.8	83	28.3	83	NW	8	3.6		0	1ks		W	0	0	Clear	
Charleston, South Carolina	29.92	760.0	29.98	761.5	86	30.0	61	W	7	3.1		0	0			0	0	Clear	
Charlotte, North Carolina	29.15	740.4	29.91	759.7	84	28.9	61	NW	4	1.8		2c	Haze	NW	Calm	0.04	1.0	Fair	
Chattanooga, Tennessee	29.28	743.7	30.04	763.0	79	26.1	82	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Cheyenne, Wyoming	23.98	609.1	29.92	760.0	53	11.7	100	SE	4	1.8			Fog			0.27	6.9	Dense fog	
Chicago, Illinois	29.16	740.7	29.81	757.2	73	22.8	81	Calm	0	0			10ks		NW	0.35	8.9	Cloudy	
Chincoteague, Virginia	29.78	756.4	29.80	756.9	77	25.0	84	NW	14	6.3		2cs	0	W		0.79	20.1	Fair	
Cincinnati, Ohio	29.33	745.0	29.94	760.5	81	27.2	70	SW	5	2.2		4cs	0	W		0	0	Fair	
Cleveland, Ohio	29.12	739.6	29.79	756.7	75	23.9	77	SW	13	5.8		2k	2ks	W	W	0.24	6.1	Fair	
Coleman City, Texas	28.16	715.3	29.75	755.6	72	22.2	80	SE	12	5.4			10s		SE	0	0	Cloudy	
Columbus, Ohio	29.10	739.1	29.89	759.2	74	23.3	81	S	4	1.8		0	0			Inap.	Inap.	Clear	
Concho, Texas																			
Corsicana, Texas	29.57	751.1	30.02	762.5	75	23.9	86	S	4	1.8		0	2ks		S	0.11	2.8	Clear	
Davenport, Iowa	29.24	742.7	29.84	757.9	77	25.0	82	SW	6	2.7		0	5s		SW	0	0	Fair	
Dayton, Washington T'y					48	8.9	63	SW			1	2cs	0	W		0	0	Clear	
Deadwood, Dakota	25.30	642.6			56	13.3	57	Calm	0	0		0	8s		SW	0	0	Fair	
Decatur, Texas	28.83	732.3	29.95	760.7	73	22.8	95	SE	13	5.8			10s		S	0.10	2.5	Cloudy	
Delaware Breakwater, Del.	29.76	755.9	29.78	756.4	72	22.2	85	W	7	3.1		1c	0	Calm		0.10	2.5	Clear	
Denison, Texas	29.21	741.9	29.97	761.2	75	23.9	90	S	6	2.7		8k	0	S		0.04	1.0	Fair	
Denver, Colorado	24.71	627.6	29.93	760.2	57	13.9	58	S	2	0.9			10s		Calm	0	0	Cloudy	
Des Moines, Iowa	29.03	737.3	29.87	758.7	70	21.1	80	E	4	1.8		0	8s		W	0	0	Cloudy	
Detroit, Michigan	29.12	739.6	29.75	755.6	70	21.1	85	SW	6	2.7		2ck	Haze	SW	Calm	0	0	Clear	
Dodge City, Kansas	27.27	692.6	29.42	747.3	72	22.2	85	S	24	10.7		0	0			Inap.	Inap.	Clear	
Dubuque, Iowa	29.19	741.4	29.85	758.2	72	22.2	67	NW	6	2.7		5ck	0	NW		0.38	9.7	Fair	
Duluth, Minnesota	29.19	741.4	29.86	758.4	56	13.3	81	W	8	3.6		5k	0	NW		0.01	0.3	Fair	
Eagle Pass, Texas	29.10	739.1	29.89	759.2	78	25.6	86	SE	8	3.6			10s		SE	0.12	3.0	Cloudy	
Eastport, Maine	29.45	748.0	29.61	749.5	61	16.1	60	NW	6	2.7		0	2ks		NW	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.06	738.1	29.73	755.1	75	23.9	64	SW	20	8.9		0	2ks		NW	0.98	24.9	Fair	
Escanaba, Michigan	29.11	739.4	29.74	755.4	65	18.3	63	NW	12	5.4		2ck	0	W		0	0	Clear	
Florence, Arizona					59	15.0	59	SW	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.00	635.0	30.44	773.2	43	6.1	51	SE	2	0.9		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.85	707.4	29.64	752.8	54	12.2	86	E	2	0.9		2c	0	S		0.05	1.3	Clear	
Fort Custer, Montana	26.69	677.9			56	13.3	62	Calm	0	0		0	0			0	0	Clear	
Fort Davis, Texas	25.17	639.3	30.13	765.3	68	20.0	74	W	3	1.3		0	0			0	0	Clear	
Fort Elliot, Texas	26.87	682.5	28.98	736.1	70	21.1	85	SE	16	7.2			10s		SE	Inap.	Inap.	Cloudy	
Fort Gibson, Indian Ter.	29.44	747.8	29.95	760.7	78	25.6	78	S	11	4.9		0	2s		S	0	0	Fair	
Fort Grant, Arizona	25.17	639.3	29.97	761.2	68	20.0	10	N	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	28.69	728.7	29.90	759.4	75	23.9	81	SE	6	2.7		0	8s		Calm	0	0	Fair	
Fort Keogh, Montana	27.14	689.3			62	16.7	66	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.69	703.3	29.52	749.8	74	23.3	86	SE	7	3.1			10s		SE	0.23	5.8	Threatening	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.72	729.2	29.77	756.1	76	24.4	86	SE	12	5.4		5ck	0	S		Inap.	Inap.	Fair	
Fort Stevenson, Dakota	28.11	688.6			56	13.3	77	E	5	2.2		0	0			0	0	Clear	
Fort Verde, Arizona					54	12.2	33	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.97	761.2	30.01	762.2	81	27.2	83	SE	10	4.5		0	5ks		S	0.05	1.3	Fair	
Grand Haven, Michigan	29.19	741.4	29.82	757.4	62	16.7	94	W	6	2.7			10s		Calm	0.94	1.0	Cloudy	
Helena, Montana					56	13.3	63	S	6	2.7		5cs	0	S		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.16	740.7	29.88	758.9	83	28.3	75	SW	4	1.8		2c	0	SW		0	0	Clear	
Indianola, Texas	29.95	760.7	29.98	761.5	81	27.2	87	S	9	4.0		0	2ks		Calm	0.54	13.7	Fair	
Jacksboro, Texas	28.83	732.3	29.89	759.2	75	23.9	90	S	8	3.6		0	0			0.15	3.8	Clear	
Jacksonville, Florida	30.05	763.3	30.07	763.8	86	30.0	61	SW	8	3.6		0	0			0	0	Clear	
Keokuk, Iowa	29.26	743.2	29.83	757.7	82	27.8	75	SW	6	2.7		5cs	5s	Calm	Calm	0	0	Cloudy	
Key West, Florida	30.09	764.3	30.12	765.0	84	28.9	71	SE	4	1.8		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	29.84	757.9	29.86	758.4	76	24.4	86	W	15	6.7		10c	0	W		0.55	14.0	Cloudy	
Knoxville, Tennessee	29.08	738.6	30.03	762.7	77	25.0	77	W	3	1.3		0	0			0	0	Clear	
La Crosse, Wisconsin	29.16	740.7	29.87	758.7	64	17.8	68	N	6	2.7		2c	0	NW		0	0	Fair	
La Mesilla, New Mexico	26.04	661.4	30.19	766.8	60	15.6	24	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.46	748.3	29.79	756.7	77	25.0	82	SE	8	3.6			10s		SE	Inap.	Inap.	Cloudy	
Leavenworth, Kansas	29.04	737.6	29.83	757.7	76	24.4	77	S	11	4.9		9k	0	SW		0	0	Cloudy	
Lewiston, Idaho	29.04	737.6	29.66	753.4	60	15.6	40	W	1	0.4		2k	0	Calm		0	0	Clear	
Little Rock, Arkansas	29.72	754.9	30.02	762.5	79	26.1	82	SW	4	1.8		0	0			0	0	Clear	
Los Angeles, California	29.62	752.3	29.96	761.0	58	14.4	88	SW	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.44	747.8	29.96	761.0	82	27.8	67	W	10	4.5		5k	0	SW		0	0	Fair	
Lynchburg, Virginia	29.22	742.2	29.85	758.2	83	28.3	53	W	4	1.8		5ck	0	Calm		0	0	Fair	
Madison, Wisconsin	28.86	733.0	29.80	756.9	68	20.0	79	NW	8	3.6		8cs	0	W		0.47	11.9	Fair	
Marquette, Michigan	29.08	738.6	29.76	755.9	60	15.6	65	NW	16	7.2		5k	5s	NW	NW	0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.32	719.3	30.00	762.0	75	23.9	86	SE	5	2.2			10n		SE	0.17	4.3	Light rain	
Memphis, Tennessee	29.68	753.9	30.00	762.0	84	28.9	68	SW	8	3.6		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.10	739.1	29.79	756.7	68	20.0	84	W	8	3.6		5ck	5s	W	W	0.20	5.1	Cloudy	
Mobile, Alabama	30.07	763.8	30.12	765.0	80	26.7	87	S	2	0.9		0	0			0	0	Clear	
Montgomery, Alabama	29.88	758.9	30.11	764.8	80	26.7	82	W	6	2.7		0	0			0	0	Clear	
Morgantown, West Virginia	28.93	734.8	29.86	758.4	75	23.9	81	SW	5	2.2		5ck	2ks	NW	W	1.31	33.3	Fair	
Mt Washington, N. H	23.53	597.6	29.89	759.2	39	3.9	100	NW	40	17.9			Fog		NW	0	0	Dense fog	
Nashville, Tennessee	29.54	750.3	30.04	763.0	82	27.8	71	W	1	0.4		0	0			0	0	Clear	
New Haven, Connecticut	29.58	751.3	29.69	754.1	76	24.4	69	NW	7	3.1		2c	2s	NW	NW	0.13	3.3	Fair	
New London, Connecticut	29.64	752.8	29.69	754.1	74	23.3	68	NW	8	3.6		1cs	0	W		0.38	9.7	Clear	
New Orleans, Louisiana	30.03	762.7	30.09	764.3	81	27.2	82	S	2	0.9		0	Haze		Calm	0.25	6.3	Clear	
Newport, Rhode Island	29.61	752.1	29.65	753.1	72	22.2	71	NW	4	1.8		5cs	0	NW		0.04	1.0	Fair	
New River, North Carolina					82	27.8	70	W			1	1c	0	W				Clear	
New York, New York	29.56	750.8	29.73	755.1	76	24.4	64	NW	4	1.8		5ck;cs	0	Calm		0.01	0.3	Fair	
Norfolk, Virginia	29.77	756.1	29.83	757.7	80	26.7	62	NW	3	1.3		5ck	Haze	W	Calm	0.75	19.1	Fair	
North Platte, Nebraska	26.99	685.5	29.45	748.0	63	17.2	92	NE	16	7.2			10s		NE	0	0	Cloudy	
Olympia, Washington Ter	29.92	760.0	29.96	761.0	42.5	5.8	91	S	2	0.9		Haze	5s		W	0	0	Fair	
Omaha, Nebraska	28.75	730.2	29.79	756.7	70	21.1	85	SE	5	2.2		1ck	8s	W	W	0.08	2.0	Cloudy	
Oswego, New York	29.41	747.0	29.71	754.6	64	17.8	78	S	2	0.9			10s		Calm	0	0	Cloudy	
Pembina, Dakota	29.10	739.1	29.93	760.2	47	8.3	92	NW	6	2.7		5k	0	NW		0.28	7.1	Fair	
Pensacola, Florida	30.10	764.5	30.13	765.3	83	28.3	75	NW	1	0.4		Haze	0	Calm		0	0	Clear	
Philadelphia, Pennsylvania	29.69	754.1	29.74	755.4	76	24.4	73	NW	12	5.4		2ck	0	NW		0.27	6.9	Fair	
Phœnix, Arizona	28.80	731.5	30.51	774.9	79	26.1	27	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	17.87	453.9	30.08	764.0	33	0.6	51	SW	25	11.2		0	0			0	0	Clear	
Pilot Point, Texas	29.21	741.9	30.02	762.5	75	23.9	90	SE	10	4.5			10ks		S	0.20	5.1	Cloudy	
Pioche, Nevada	23.98	609.1	29.75	755.6	40	4.4	43	NW	4	1.8		0	1s			0	0	Clear	
Pittsburg, Pennsylvania	29.06	738.1	29.81	757.2	77	25.0	77	NE	7	3.1		5k	0	Calm		0.46	11.7	Fair	
Port Huron, Michigan	29.09	738.9	29.71	754.6	73	22.8	81	W	8	3.6		5c	0	W		1.07	27.2	Fair	
Portland, Maine	29.57	751.1	29.62	752.3	66	18.9	64	NW	6	2.7		2cs	0	W		0	0	Clear	
Portland, Oregon	29.95	760.7	30.02	762.5	50	10.0	79	Calm	0	0			10ks		SW	0	0	Cloudy	
Portsmouth, North Carolina					80	26.7	74	W	18	8.0		5cs	0	Calm		0.03	0.8	Fair	
Prescott, Arizona	24.73	628.1	30.09	764.3	39	3.9	46	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.08	764.0	30.10	764.5	83	28.3	71	N	5	2.2		2c;k	0	Calm		0	0	Clear	
Red Bluff, California	29.52	749.8	29.87	758.7	63.0	17.2	70	S	3	1.3		0	0			0	0	Clear	
Rio Grande City, Texas					74	23.3	95	S			1		10s		S	1.03	26.2	Cloudy	
Rochester, New York	29.08	738.6	29.66	753.4	68	20.0	95	SW	12	5.4			10n		Calm	0.17	4.3	Light rain	
Roseburg, Oregon	29.44	747.8	30.01	762.2	41	5.0	91	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.81	757.2	29.88	758.9	56.5	13.6	78	S	12	5.4		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	29.96	761.0	78	25.6	73	SW	10	4.5		0	0			0	0	Clear	
St. Paul, Minnesota	29.04	737.6	29.84	757.9	62	16.7	77	W	4	1.8		0	0			0	0	Clear	
Salt Lake City, Utah	25.54	648.7	29.87	758.7	58	14.4	37	N	4	1.8		2ck	0	W		0	0	Clear	
San Antonio, Texas	29.27	743.4	29.94	760.5	76	24.4	91	SE	4	1.8		2ck	8s	Calm	SE	0.77	19.6	Cloudy	
San Diego, California	29.93	760.2	30.01	762.2	55	12.8	74	NE	5	2.2		0	5ks		NW	0	0	Clearing	
Sandusky, Ohio	29.17	740.9	29.80	756.9	76	24.4	73	SW	17	7.6		10ck	0	W		0	0	Cloudy	
Sandy Hook, New Jersey	29.68	753.9	29.70	754.4	77	25.0	77	W	6	2.7		5ck	0	Calm		0	0	Fair	
San Francisco, California	29.92	760.0	29.99	761.7	52	11.1	93	SW	12	5.4			Fog		SW	0	0	Foggy	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	53	11.7	14	E	4	1.8		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	29.95	760.7	30.04	763.0	87	30.6	58	W	4	1.8		0	Sm'e		Calm	0	0	Clear	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	76	24.4	91	S	2	0.9			10s		Calm	0.05	1.3	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	29.95	760.7	29.98	761.5	82	27.8	71	E	4	1.8		2k	0	Calm		0	0	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.28	743.7	29.91	759.7	81.5	27.5	70	SW	7	3.1		2c	2s	W	W	0	0	Fair	
Springfield, Massachusetts	29.56	750.8	29.69	754.1	71	21.7	71	W	8	3.6			10ks		NW	0.06	1.5	Cloudy	
Stockton, Texas	26.88	682.7	29.88	758.9	74	23.3	86	SE	10	4.5		2cs	0	Calm		0	0	Fair	
Thatcher's Island, Mass	29.58	751.3	29.63	752.6	71	21.7	85	NW	12	5.4		5c	0	NW		0	0	Fair	
Toledo, Ohio	29.16	740.7	29.80	756.9	76	24.4	77	SW	12	5.4		5cs	5s	S W	SW	0	0	Threatening	
Tucson, Arizona	27.46	697.5	30.01	762.2	73	22.8	21	NW	2	0.9		0	0			0	0	Clear	
Umatilla, Oregon	29.56	750.8	30.04	763.0	55.5	13.1	48	S	8	3.6		1ck	0	SW		0	0	Clear	
Uvalde, Texas																0.72	18.3		
Vicksburg, Mississippi	29.86	758.4	30.11	764.8	77	25.0	86	SE	2	0.9		0	0			0.03	0.8	Clear	
Virginia City, Montana	24.18	614.2	29.66	753.4	42	5.6	66	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.52	749.8	29.88	758.9	59	15.0	59	S	3	1.3		0	0			0	0	Clear	
Washington, D. C	29.71	754.6	29.81	757.2	77	25.0	69	NW	14	6.3		1cs	0	NW		0.23	5.8	Clear	
Wickenburg, Arizona					69	20.6	19	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.86	758.4	29.94	760.5	83	28.3	74	SW	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.57	649.5	26.93	760.2	43	6.1	51	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.62	752.3	29.66	753.4	69	20.6	75	NW	5	2.2		5c	0	W		0.53	13.5	Fair	
Yankton, Dakota	28.64	727.4	29.90	759.4	61	16.1	94	NE	2	0.9			10n		SW	0.04	1.0	Light rain	
Yuma, Arizona	29.69	754.1	29.84	757.9	62	16.7	67	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			55.5	13.1	72	Calm	0	0		2k	0			0	0	Fair	Thomas Herran.
§ Havana, Cuba, W. I	30.06	763.5	30.11	764.9	81	27.2	82	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.06	763.5	30.07	763.8	80	26.7	79	Calm	0	0		2c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I	29.92	760.0	30.00	762.0	80	26.7	83	E	5	2.2		2k	2s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.04	763.0	30.04	763.0	80	26.7	82	E			2	3c	5k	E		0	0	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.45	748.0	30.01	762.2	79	26.1	85	S			1		2ks			0	0		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		NE					8k		NE	1.61	41.	Covered	Earl Flint.
Santiago de Cuba, W. I	30.05	763.3	30.08	764.0	81	27.2	78	N	4.8	2.1		0	2s		N	0	0		Robert Mason.
St. Thomas, W. I																			G. O. Gellich.
York Factory, B. A	30.16	766.1	30.21	767.3	38.0	3.3	95	NE	9	4.0		2k	2s	NE	NE	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.08	764.0	82	27.8	91	S	2	0.9			0							Clear	
§ Navy Yard, Portsmouth, N. H.	29.69	754.1	67	19.4	74	NW	4	1.8			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.88	758.9	66	18.9	68	NE			1	1ck		Calm		0	0			Clear	
§ Adams, Payta, Peru	30.00	762.0	69	20.6	85	SE			2		1		SE					Clear	
§ Alaska, S 11° 33′, W. 77° 34′ *	29.95	760.7	65	18.3	89	SSE			4		10					Mod'ate	SSW	Cloudy	
§ Alert, Yokohama, Japan	29.79	756.7	72	22.2	58	ESE			2		2		Calm	0	0	Smooth		Clear	
§ Alliance, St Pierre, Newfoundland	29.35	745.5	51	10.6	93	NW			2		8		NW	Heavy	Heavy	Smooth		Fair	
§ Ashuelot, Gravener I'd., Yangtzekiang, China	29.65	753.1	73	22.8	85	SW			2		10							Raining	
§ Colorado, New York, N. Y.	29.72	754.9	74	23.3	76	NW	3	1.3			5		W	0	0			Hazy	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	29.70	754.4	75	23.9	82	NW	4	1.8			2		Calm					Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	29.84	757.9	75	23.9	90	NNW	2	0.9			5		NW	0.9	23.			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	30.03	762.7	56	13.3	100	SW	3.6	1.6			8		SW	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	29.85	758.2	46	7.8	92	Calm			0		10					Smooth		Cloudy	
§ Kearsarge, Boston, Mass	29.70	754.4	71	21.7	62	NW			2		2		NW			Smooth		Fair	
§ Lackawanna, Amapata, Honduras †	30.07	763.8	78	25.6	91	N			1-2		10		N					Cloudy	
§ Marion, Port Stanley, Falkland I'ds	29.77	756.1	39	3.9	100	SW			1		8		SW	Blank	Blank	Smooth		Fair	
§ Michigan, Erie, Pa.	29.85	758.9	70	21.1	85	W			7		5		W					Fair	
§ Minnesota, Navy Yard, Brooklyn, N.Y.	29.72	754.9	75	23.9	86	NW			1		5		Calm					Fair	
§ Monocacy, Chefoo, China	29.88	758.9	74	23.3	55	S			2		2		S					Fair	
§ New Hampshire, Port Royal, S. C.	30.05	763.3	81	27.2	74	WNW	3	1.3			1		Calm	0	0			Clear	
Nipsic, Leghorn, Italy	30.05	763.3	68	20.0	70	WNW			2		5							D. clouds	
§ Onward, Chimbote, Peru †	29.95	760.7	64	17.8	89	SSE			3		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.847	757.9*	70	21.1	100	SE			2		10							Overcast	
§ Passaic, Washington, D. C.	29.81	757.2	80	26.7	91	NW			1		2		NW	0.2	5.			Clear	
§ Pensacola, San Francisco, Cal.	29.92	760.0	51	10.6	93	WSW			3		1		SW			Smooth	S	Misty	
§ Portsmouth, N. 38° 16′, W. 31° 28′	30.30	769.6	68	20.0	95	SSW			5		0					Long	SW	Clear	
§ Powhatan, New York, N. Y.	29.74	755.4	76	24.4	77	Calm			0		5		SW					Clear?	
§ Quinnebaug, Antwerp, Belgium	29.98	761.5	69	20.6	56	NNW			4		2		Calm					Fair	
§ Richmond, Nagasaki, Japan	29.89	759.2	71	21.7	??	NE			2		10							Rainy	
Rio Bravo, Brownsville, Texas †	30.07	763.8	78	25.6	100	SE	2	0.9			8		Calm	0	0			Cloudy	
§ Saratoga, Gibraltar, Mediterranean	30.11	764.8	70	21.1	70	W			2		2			0	0			Hazy	
§ Shenandoah, Buenos Ayres, Argentine Republic	29.66	753.4	53	11.7	93	WSW			4		10		Calm			Smooth		Cloudy	
§ St. Louis, League Island, Pa.	29.77	756.1	75	23.9	95	WNW	7	3.1			5		W	0	0			Fair	
Swatara, N. 15° 30′, E. 113° 34′ †	29.76	755.9	85	29.4	79	SSW			4		2		SW			Mod'ate	SW	Clear	
§ Tennessee, New York, N. Y.	29.74	755.4	76	24.4	73	NNW			1-2		8		NW	0	0	Smooth		Cloudy	
§ Ticonderoga, Nagasaki, Japan	29.67	758.7	73	22.8	100	ESE			1		10		Calm			Smooth		Rainy	
§ Trenton, N. 43° 00′, E. 5° 00′	30.04	763.0	64	17.8	73	WNW			3		5			0	0	None		Cloudy	
§ Vandalia, New Bedford, Mass.	29.67	753.6	69	20.6	80	N			1		2		N					Fair	
§ Wabash, Boston, Mass.	29.67	753.6	68	20.0	65	NW	11	4.9			2			0.05	1.3			Fair	
§ Wachusett, S. 39° 57′, W. 81° 09′	29.83	757.7	51	10.6	79	SW			4-6		10		S;W	Lt. Dr	izzle.	Long	S	Cloudy	
Wyoming, Villafranca, France	29.97	761.2	69	18.9	68	E			2		2		E			Smooth	E	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 50° 39′, W. 37° 21′	29.82	757.4	49	9.4		ESE			6		10		ESE			Mod'ate	ESE	Raining	
S. S. Moravian, J. Graham.																			
S. S. Peruvian																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air.																			A. Christie & F. W. Erskine A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			
S. S. Indiana, R. W. Sargent Liverpool, Eng	29.96	761.0	63	17.2	67	SE			2		5		S	0	0				C. M. Rowe & G. Worth, jr
S. S. Ohio, Henry Morrison.																		Fair	
S. S. Pennsylvania, Geo. H. Dodge. N. 40° 01′, W. 53° 26′ *†	29.61	752.1	66	18.9	100	SW			6		5		SW	1 h'r	1 h'r	Mod'ate	SW	Raining	Wm. Shackford. Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger. Las Paz, Lower Cal †	29.84	757.9	69	20.6	85	SE			2		2		SW					Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch.																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heinbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer. N. 40° 50′, W. 177° 46′ †	29.77	756.1	53	11.7	86	SW			5		10		SW			Mod'ate	SW	Foggy	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. Yokohama, Japan †	29.94	760.5	70	21.1	90	E			3		k		E	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan. N. 44° 16′, W. 124° 16′ †	29.94	760.5	51	10.6	86	NW			5		10ks		N			Mod'ate	W	Cloudy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander N. 35° 39′, W. 121° 25′ †	30.05	763.3	50	10.0		NE			2		0					Heavy	NW	Clear	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba, N. 36° 30′, W. 122° 00′ †	29.96	761.0	47	8.3		NW			3		Fog			0	0	Mod'ate	NW	Foggy	
§ S. S. State of California, G. Dabney. N. 43° 16′, W. 124° 40′ †	29.97	761.2	48	8.9		N			2		5		W			Mod'ate	W	Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.89	759.2	75	23.9	90	N			2		5		NE			Heavy	SSW	Fair	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.08	764.0	53	11.7	93	NW			2		0					Smooth	SW	Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 8° 45′. W. 84° 05′.... †	29.95	760.7	80	26.7	78	WNW			1		8		W	0.5	13.	Large	SW	Squally	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 34° 21′, E. 138° 35′.....†	29.90	759.4	70	21.1	90	E			3		2		E	0	0			Fair	
§ S. S. City of Sidney, H.C. Dearborn, N. 30° 59′, W. 140° 14′...*†	30.22	767.6	65	18.3		NE			5		8		NE	0	0	Heavy	NE	Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 18° 01′, W. 103° 08′.....†	29.91	759.7	80	26.7	100	ESE			2		5		S	0	0	Small	S	Fair	
§ S.S. Dakota, D. E. Griffiths, N 34° 26′. W. 123° 26′...†	29.96	761.0	52	11.1	79	NE			3		10		W			Small	NW	Hazy	D. E. Griffiths.
§ S.S. Granada, J M Cavarly N. 30° 45′. W 117° 20′....†	30.01	762.2	69	15.0	88	NW			3		8c		NW	0	0	Long	WNW	Cloudy	
§ S. S. Idaho, E. Alexander, N. 42° 52′, W. 124° 42′... †	29.95	760.7	54	12.2		NNW			5		0					Light	NW	Clear	E. Alexander.
§ S.S. Zealandia, R. C. Ghest, N. 24° 46′, W. 151° 50′.....	30.05	763.3	72	22.2		ESE			4		2		E			Smooth	NE	Clear	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
§ S. S. Adriatic, J. W. Jennings, N. 41° 14′, W. 53° 15′.....†	29.41	747.0	66	18.9	84	SW			6		*Mist			0	0	Rough	SW	Overcast	H. N. Goulden.
S. S. Britanic, H. Perry, N. 51° 08′. W. 12° 05′.....†	29.96	761.0	54	12.2		NW			4		5		NW			Mod'ate	NW	Showery	J. Jones.
S. S. Celtic. B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 31° 17′, W. 80° 36′.....†	30.05	763.3	83	28.3		W			1		1		WSW	0	0	Smooth	SW	Fine	A. R. Mehaffey.
Schr. Adule Fuller, J. Jorgensen, Boston, Mass	29.69	754.1	70	21.1	57	NW					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 21° ¾′?, W 68½°? .....†	30.13	765.3	88	31.1		E			1		2		E	0	0	Smooth	SE	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, S. 0° 58′, W. 23° 10′.....*†	30.10	764.5	78	25.6		SSE			1		2		SSE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Forteau, Labrador.....†	29.41	747.0				ESE			8		10		E	Heavy	Heavy			Threatening	S. S. Miner.
Brigantine George, W. H Champlin..																			
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29 36	745.7	69	15.0	88	NW			5		5		NW	0	0	Smooth		Fine	James S. Garvin.

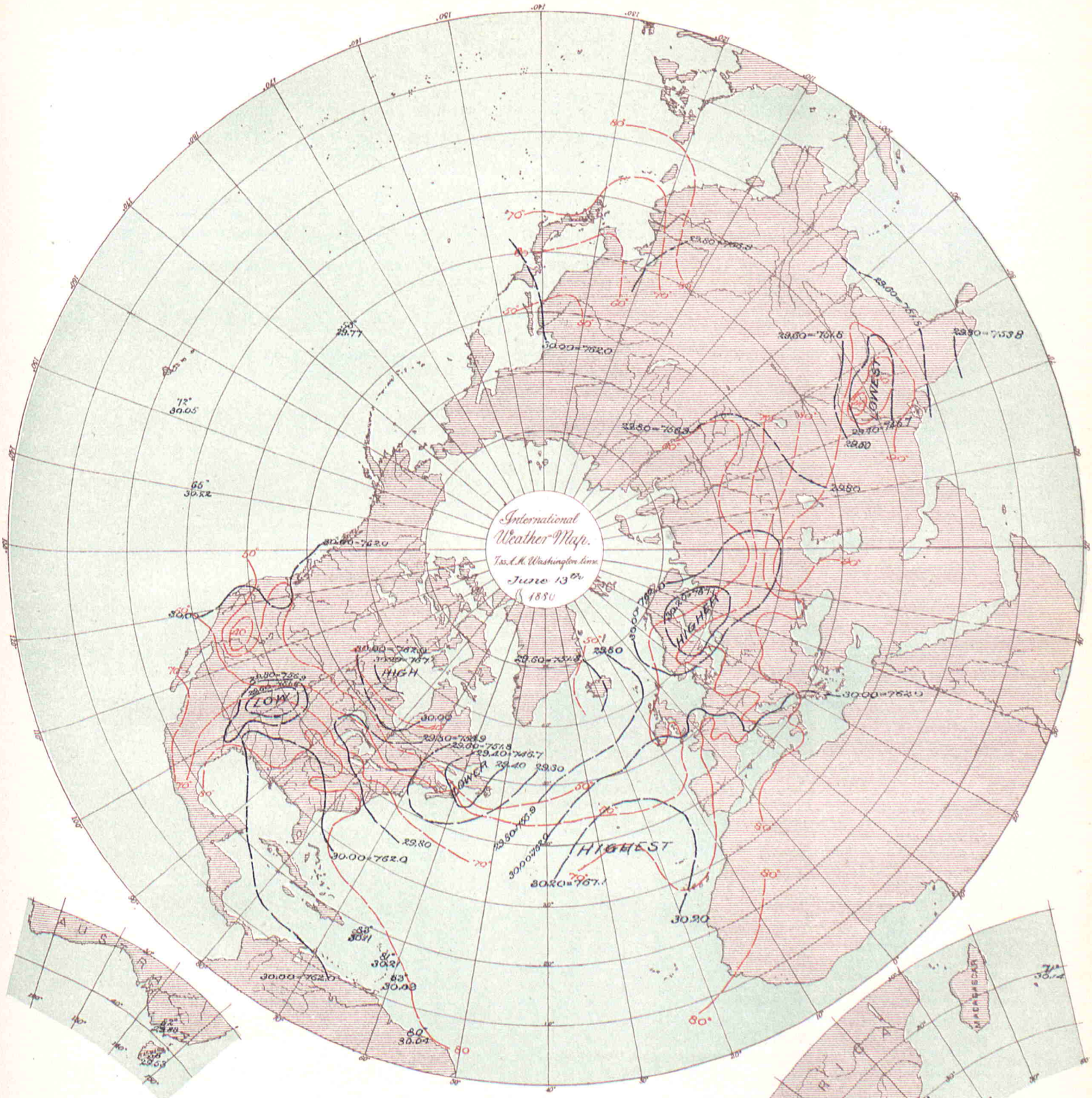
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 14, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.04	763.1	78.3	25.7	67	WNW			1		0			0	0	Clear	Metge.
Algiers			30.00	763.5	72.3	22.4	55	NNE			4		0			0.028	0.7	Clear	Nicolas.
La Calle			30.05	763.2	71.1	21.7	83	NNW			5		10			0.386	9.8	Covered	Fonfrède.
Tunis			29.96	761.0															Jacques.
Sfax			30.00	762.1															Gau.
Saïda			30.06	763.4															Charon.
Tebessa			29.94	760.5	87.4	30.8	24	NW			5		3			Inap.	Inap.	Pretty fair.	Watrin.
Geriville			30.08	764.1	82.6	28.1	35	NW			2		3			0	0	Pretty fair	Lonchamp.
Laghouat			30.00	762.1	84.6	29.2	10	NNW			5		3			0	0	Pretty fair	Herlin.
Biskra			29.94	760.4	93.6	34.2	27	NW			6		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saïda is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.36	745.8	29.89	759.1	75.4	24.1	48	NW			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.12	739.6	29.86	758.5	68.4	20.2	66	W	7.2	3.2			10			0.087	2.2		Dr. Wierzbicki.
Eperies	29.00	736.5	29.84	757.8	75.6	24.2	44	S			3		6ks		N	0	0		Julius Mikolik.
Gratz	28.69	728.6	29.90	759.4	68.4	20.2	58	SW			2		7			0	0		Andreas Rospini.
Hermannstadt	28.52	724.3	29.88	759.0	73.9	23.3	65	NW			1		10			0.047	1.20		Prof. A. Gottschling.
Kremsmünster, Observatory	28.62	726.9	29.93	760.2	62.4	16.9	73	SW			3		6			0	0		The Staff.
Lemberg	28.87	733.4	29.83	757.7	76.8	24.9	54	NW			2		9			0	0		Dr. T. Stanecki.
Pola	29.85	758.3	29.96	761.0	72.1	22.3	64	SW			1		5			0	0		I.R. Hydrographic Office.
Szathmar	29.49	749.1	29.94	760.4	76.3	24.6	49	SW			2		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.64	752.9	29.91	759.7	73.0	22.8	50	NW			1		6			0	0		Karl Stancel.
Trieste	29.87	758.7	29.97	761.3	74.5	23.6	75	W			1		1			Inap.	Inap.		P. Busin.
Vienna	29.22	742.2	29.96	761.0	68.7	20.4	55	W			4		2			0.051	1.3		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau & c.
Brussels	29.82	757.5	30.02	762.4	68.4	20.2	41	W			2	2		SE		0	0		Royal Observatory.
Furnes	30.07	763.7	30.09	764.3	66.7	19.3	65	SW			0		6			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 18, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.09	764.3	30.18	766.6	59.1	15.1		N	14	6.3			5			Blank	Blank	Blue sky	W. Boswell.
Ardrossan	30.14	765.5	30.16	766.1	58	14.4		NW			8		3					Blue sky	G.Carrick.
Armagh, (Observatory)	29.98	761.5	30.20	767.1	59.7	15.4		N	5	2.2			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.13	765.3	55.7	13.2		WNW	18	8.0			10					Overcast	John Hartnup.
Bolton (Sharples)	29.57	751.1	30.08	764.0	55.4	13.0		WSW	1	0.4			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.71	754.6	30.10	764.5	58.2	14.6	75	E			1		10			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	82	27.8		SE			2		8						Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.94	760.5	30.03	762.7	71.0	21.7		N			1		7k					D. clouds	H. Todd.
Cardington			30.02	762.5	68.6	20.3		N			0.2		9					D. clouds	John McLaren.
Chatham (School M. E.)	29.91	759.7	30.04	763.0	72.9	22.7		Calm			0		9k					Gloomy	Lance Crp'l Hocker,R.E.
Donaghadee	30.18	766.6	30.22	767.6	57	13.9		N			3		3					D. clouds	J. Mac Gowan.
Dover	30.01	762.2	30.04	763.0	64	17.8		WSW			2		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.92	760.0	30.15	765.8	58.0	14.4		NNW			5		7					Squally	The Staff.
Fort Napier, Natal	27.95	709.9	30.15	765.8	64.5	18.1		N			1		0					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.73	755.1	29.76	755.9	80	26.7		Calm			0		8					Raining	
Galway (Queen's College)			30.22	767.6	60	15.6		NW			1		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.02	762.5	30.07	763.8	74.3	23.5		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.24	768.1	30.45	773.4	62.3	16.8		SW			1		10					Overcast	D. G. Maclean.
Great Yarmouth	30.03	762.7	30.04	763.0	64	17.8		NNE			2		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.88	758.9	30.04	763.0	68.6	20.3		N			1		10					Raining	The Staff, for G.B.Airy.
Guernsey	29.87	758.7	30.08	764.0	59	15.0		WNW			1		7					Showery	Dr.S.E.Hoskins, F.R.S.
Helston	30.33	770.4	30.45	773.4	60	15.6		NW			6	3ck				0.14	3.6	Fine	M. P. Moyle.
Holyhead	30.14	765.5	30.17	766.3	55	12.8		NNW			4		2					Blue sky	John Tilston.
Jersey	29.82	757.4	30.12	765.0	59.3	15.2		NNW			2		9					Gloomy	J. Fisher.
Kew (Observatory)	30.02	762.5	30.05	763.3	66.0	18.9		N	8	3.6			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.82	757.4	30.08	764.0	63.9	17.7		NW			1		10					Overcast	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.83	757.7	29.90	759.4	78	25.6		E			2		6					D. clouds	A. King.
Nairn	30.09	764.3	30.18	766.6	63	17.2		ENE			3		0					Clear	W. D. Penny.
Nassau, Bahamas			30.06	763.5	84.6	29.2		SW			0		4					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.90	759.4	30.09	764.3	66.0	18.9		NW			1		8k		NW	0.138	3.50	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.58	751.3	30.10	764.5	60.0	15.6		NW			3-4		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.84	757.9	30.09	764.3	65.7	18.7		NNW			1		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	30.03	762.7	30.10	764.5	57.7	14.3		N			3		10					Overcast	John Merrifield.
*Roche's Point	30.17	766.3	30.30	769.6	65	18.3		NNE			3		5					⅗ clouded	Wm. Kennedy.
St. Ann's Head	30.02	762.5	30.18	766.6	54	12.2		N			5		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			30.22	767.6	53.8	12.1		NW	15	6.7			0					Blue sky	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.73	755.1	29.80	756.9	90.0	32.2		NE			2		1					D. clouds	Serg't W. H. Lyne.
Sheffield	29.84	757.9	30.12	765.0	62.8	17.1		NE			1		10			0.03	0.8	Overcast	W. F. Cooper.
Silloth Rectory	30.13	765.3	30.16	766.1	58.0	14.4	79	E			2		10			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.13	765.3	58.1	14.5		NE	4	1.8			10					Overcast	Rev. S. J. Perry.
Strathfield Turgiss	29.84	757.9	30.05	763.3	69.3	20.7		W			1		10					Gloomy	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	30.15	765.8	30.17	766.3	59	15.0		N			7		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.26	768.6	30.28	769.1	59.2	15.1		NW	14	6.3			5					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.02	762.5	30.06	763.5	60.5	15.8	81	NNW	7.4	3.3		0	1			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			29.42	747.3	47.0	8.3	70	SW			2		10kn			0.07	1.8	Squally	Francis Abbott,F.R.A.S.
Leith(Restalrig Park)Sc'tl'd			30.19	766.8	59.0	15.0		E			2		10k			0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.84	757.9	30.03	762.6	73.8	23.2	72	E	14.5	6.5		0	4		ENE;ESE	0.23	5.8	Fine	C. Meldrum.
Melbourne (Observatory)	29.58	751.3	29.67	753.6	53.8	12.1	81	N	16	7.2			9			0.19	4.8	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.23	767.8	64	17.8		N			2	3	3	N		0	0		J. Youngclause.
North Unst, Shetland I's			30.14	765.5				W			2	4	6	W		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lw'r	Clouds. Direction. Upper.	Clouds. Direction. Lower	Sea or swell. Height scale 0—9	Sea or swell. Direction frbm—	Weather.	Observer.
H. M. S. Alert																			Capt.J.P.Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt, W. M. Grieve.
Barque Dommewyne																			Capt. Jas. Buchan.
Ship British Commodore, N. 51° 05′, W. 9° 25′			30.26	768.6	54	12.2		WNW			3		1			2	W	Blue sky	Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia																			Capt. A. Campbell
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German																			Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	68.0	20.0	89	NE			2	7cs				Inap.	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.89	759.1	29.93	760.3	65.3	18.5	75	ESE			4		9						
Faröe	29.92	760.0	29.94	760.5	65.3	18.5	84	ESE			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.66	753.3	29.70	754.4	50.7	10.4	78	W			4		8					Raining	
Thorshavn (Faröe)	30.08	763.9	30.11	764.8	54.7	12.6	61	SW			2		6						
Vestervig	29.89	759.1	29.98	761.5	68.7	20.4	79	ENE			4		5						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.55	750.6	30.10	764.6	66.2	19	59	N			1		8n		SW	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	30.00	762.0	30.11	764.8	63.3	17.4	96	NNW			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.81	757.1	30.07	763.6	57.6	14.2	86	NW			2		8n;s	E		0.004	0.1		Klein, Commandant.
Avignon, Normal School	29.88	759 0	29.96	761.0	81.1	27.3	31	N			1		10			0	0	Covered	Giraud, Director.
Bar-sur-Seine	29.48	748.8	30.02	762.6	68.4	20.2	55	S			1		10kn		S	0	0	Covered	C. Saillard, Director.
Beauvais, Normal School	29.80	757.0	30.07	763.6	68.2	20.1	52	E			1		8		NNW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.16	740.6	30.02	762.5	70.2	21.2	48	NE			1		8		NE	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.91	759.6	30.10	764.6	58.6	14.8	90	NW			2		10		NW	0.346	8.8	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.17	740.9	30.09	764.3	72.7	22.6	49	N			2		2cn	N	N	0	0	Slightly cld'y	Marlot, Director.
Bourges, Normal School	29.53	750.0	30.06	763.5	74.3	23.5	60	N			1		s		N	0	0		M. Gence, Director.
Brest, Naval Observatory	29.89	759.1	30.13	765.3	56.8	13.8	93	N			2		10		N	0.020	0.50	Misty	Ch. de Rermaree, Dir.
Caen, Normal School	29.98	761.5	30.05	763.3	61.0	16.1	96	NE			1		10		NE	0.020	0.5	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.67	753.5	30.08	764.0	62.6	17	83	W			1		5	W	W	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.73	755.2	30.04	763.1	71.2	21.8	48	SSW			1		5		NW	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.47	748.4	30.01	762.3	73.4	23	88	S			2		5		N	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.67	728.1	29.97	761.2	72.9	22.7	51	NE			1		5			0	0		Allnard, Director.
Commercy, Normal School.	29.17	741.0	30.00	762.1	68.0	20	50	WNW			1		kn	WNW	WNW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.88	733.6	30.02	762.6	74.5	23.6	49	W			2		2		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.19	741.4	29.93	760.1	72.0	22.2	59	WNW			1		k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.90	759.5	30.11	764.9	63.3	17.4	94	NNW			1		8		NW	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.77	756.2	30.08	763.9	66.7	19.3	68	WSW			1		8		SW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.18	740.6	30.09	764.2	62.6	17	59	N			2	2ck			N			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.99	761.8	30.09	764.3	65.1	18.4	71	NNW			2		10		NW	0.039	1.00	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.40	746.7	29.99	761.7	73.8	23.2	49	N			1		2n			0	0	Clear.	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.72	754.8	29.98	761.5	72.9	22.7	56	SW			1		3		WSW	0	0		E. Stephan, Director.
Mirecourt, Normal School	29.00	736.5	30.01	762.3	68.4	20.2	46	N			3		k		N	0	0		Barbier, Director.
Mont-Louis	24.91	632.0	30.14	765 6	49.6	9.8	86	E	5.6	2.5		10				0.484	12.3		M. Cave, for Dr. Fines.
Nice	29.95	760.7	29.98	761.5	69.8	21.0	65	E			3	5		W	E	0	0	Cloudy	Capt. Boissière, Director.
Nismes, Normal School	29.79	756.6	29.99	761.7	76.8	24.9	48	W			1	2			W	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.96	761 0	30.07	763.6	63.7	17.6	74	NW	11.2	5.0		10			W	0.043	1.1		Dr. Fines.
Pic du Midi (Plantade) H. P	22.60	574.1			34.2	1.2						10			S	1.189	30.2	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.99	736.3	30.02	762.4	73.8	23.2	41	N			3		2	N	N	0	0	Slightly cl'dy	M. Tallieu
Puy de Dome (Summit) Obs	25.22	640.6			47.1	8.4	88	W			2		8			0	0		Allnard, Director.
Rochefort, Naval Obs'y	30.05	763.3	30.08	764.1	65.7	18.7	75	W			1		10	W	W	3.46	88.	Covered	Lt E. Devante, Director
Rouen, Normal School	29.97	761.2	30.06	763.4	67.3	19.6	60	NNE			1		5		NE	0	0	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.03	762.7	30.06	763.4	61.9	16.6	77	NW			2		8	NW	NW	0.039	1.00	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.87	758.6	30.03	762.8	70.9	21.6	50	NW			1		5		WNW	0	0	Cloudy	E. Renou, Director.
Tarbes, Normal School.	29.10	739.2	30.21	767.2	48.2	9	73	SW			1								T. Huguet, Director
Toulouse, Observatory	29.43	747.5	30.16	766.0	59.5	15.3	94	N			4		10			0.446	11.3	Covered	B. Bailland, Dir.
Tours	29.84	758.0	30.04	763.0	71.6	22.0	55	W			1		10		W	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.56	750.8	30.05	763.3	70.2	21.2	41	N			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.13	740.0	29.82	757.3	75.2	24	33	N			3		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.14	765.5	30.17	766.2	81.3	27.4										1.34	34.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.76	756.0			70.7	21.5	45	NNW			1		5		W	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.67	753.7	29.71	754.7	65.7	18.7	99	E	7.8	3.5			10n			0.437	11.1	Raining	Marc Decllevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.13	740.0	30.00	761.9	57.6	14.2	91	NW			4		8k	W		0.016	0.4	Raining	Prof. Dr. Hoh.
Berlin	29.65	753.2	29.82	757.5	62.2	16.8	92	NW			4		10			0.287	7.3	Raining	Prof. Dr. Arndt.
Breslau	29.34	745.3	29.87	758.7	71.6	22.0	58	SW			1		9			0.682	17.32	Raining	Royal University Obs'y
Carlsruhe	29.56	750.8	29.98	761.4	68.0	20.0	70	SW			2		5	NW		0	0		Albert Senz.
Cassel	29.35	745.6	29.96	761.0	57.2	14.0	81	NW			4		10	WNW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.71	754.5	30.07	763.7	59.0	15.0	61	N			0		10			0.035	0.09		Physical Society.
Friedrichshafen	28.60	726.4	30.00	762.1	63.7	17.6	79	SW			1		2	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.85	758.3	29.93	760.1	67.5	19.7	80	W			3		10			0	0		Dr. Reinhold Kleeman.
Kiel	29.91	759.8	29.93	760.2	59.2	15.1	92	NNE			2		10			0.004	0.10		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.78	756.5	29.86	758.5	75.7	24.3	67	E			4		4	E		0.220	5.6		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.51	749.5	29.92	760.0	63.3	17.4	82	W			1		10	W				Rainy	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.70	754.3	29.92	760.0	61.5	16.4	86	WNW			3		10ks	NW				Raining	Dr. Assmann.
Memel	29.89	759.3	29.94	760.5	74.5	23.6	66	ENE			4		5ks						Reinbrecht & Issermann
Munich	28.19	716.1	30.06	763.4	63.0	17.2	58	W			5		8	SW		0.122	3.1		Dr. C. Lang.
Neufahrwasser	29.84	757.9	29.85	758.3	62.6	17.0	84	NE			3		5			0.433	11.0		A. Lothes.
Neustadt (Palatinate)	29.46	748.2	29.98	761.4	68.5	20.3	49	W			1		6	W		0	0		Reallehrer Dicknether.
Posen	29.54	750.4	29.82	757.4	71.8	22.1	66	SW			6		3			0.374	9.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.48	748.9	30.02	762.5	70.0	21.1	50	WNW			2		6	NW		0.081	0.46		Imp. University Observatory.
Stuttgart	29.05	737.9	29.92	760.0	67.1	19.5	52	N					6	W		0	0		Prof. Dr. Schoder.
Thorn																			Dr. Cunerth.
Weissenburg (Bavaria)	28.51	724.2	30.09	764.3	57.7	14.3	85	W	1.6	0.7			10		W	0.110	2.8		Reallehrer J. Hopfner.
Wustrow	29.87	758.8	29.90	759.5	55.9	13.3	98	NE			4		10s			0.209	5.3		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.47	748.4	29.84	757.8	69.8	32.1		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.40	746.8	29.45	748.0	85.6	29.8	85	SSW	55.9	25.0			7	W		0	0	D. clouds	
Deesa	29.97	761.3	29.43	747.4	96.8	36.0	39	SW	25.9	11.6			0			0	0	Misty	
Bombay	29.62	752.4	29.66	753.4	85.9	29.9	69	WSW	15.0	6.7			9		WSW	0	0	D. clouds	
Poona (Yarrowda)	27.83	706.8	29.67	753.5	79.8	26.6	59	W	23.0	10.3			9	Calm	WNW	0	0	D. clouds	
Belgaum	27.20	690.8	29.73	755.2	74.6	23.7	73	W	9.0	4.0			9	E	SW	0	0	D. clouds	
Lahore	28.48	723.5	29.17	740.9	111.3	44.0	17	SW	3.0	1.3			0			0	0	Misty	
Roorkee	28.37	720.6	29.22	742.1	100.9	38.3	38	SE	4.0	1.8						0	0	Moist & muggy	
Agra	28.74	729.9	29.26	743.2	108.6	42.6	22	W	4.4	2.0						0	0		
Nagpur	28.56	725.5	29.61	752.1	74.0	23.3	88	SW	4.1	1.8			10		W	1.14	29.0	Overcast	
Jubbulpore	28.13	714.5	29.48	748.9	78.8	26.0	78	S	9.1	4.1			8			1.43	36.3	Overcast	
Lucknow	28.96	735.6	29.32	744.8	90.1	32.3	72	ENE	4.0	1.8			10	Calm		0	0	Overcast	
Allahabad	29.00	736.6	29.30	744.2	99.4	37.4	42	E	1.8	0.8			10		NW	0	0	Overcast	
Patna	29.20	741.6	29.37	746.0	91.1	32.8	63	S	1.5	0.7			10	S	S	0.75	19.0	Drizzling	
Hazaribagh	27.46	697.4	29.44	747.9	77.3	25.2	91	SSE	6.6	3.0			10		S	0.16	4.1	Thunder-storm	
Cuttack	29.44	747.8	29.52	749.9	82.8	28.2	73	WSW	4.0	1.8			10			0	0	Overcast	
Calcutta (Alipore)	29.44	747.8	29.46	748.4	81.2	27.3	96	Calm	0	0			10		WSW	0.21	5.3	Drizzling	
Goalpara	29.07	738.4	29.48	748.7	77.7	25.4	95	ESE	4.9	2.2			10			0.28	7.1	Overcast	
Chittagong	29.47	748.5	29.56	750.8	77.9	25.5	91	SE	7.2	3.2			10			0.01	0.3	D. clouds	
Sibsagar	29.22	742.2	29.55	750.7	78.5	25.8	93	ENE	1.5	0.7			10	W	W	1.74	44.2	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna-symbols, or special symbols; the distinction between the amount of upper ahd lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.56	750.7	29.95	760.8	73.0	22.8	61	SW	4.3	1.9			7			0	0		Prof. Giovanni Clodig.
Milan	29.42	747.3	29.92	759.9	77.4	25.2	40	WSW	7.4	3.3			6	W		0	0		Prof. Schiaparelli.
Padua	29.84	757.8	29.95	760.6	73.6	23.1	52	E	1.3	0.6			8	ENE		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.03	737.3	29.91	759.7	72.3	22.4	61	SE	4.3	1.9			6	S		0.406	10.3		Prof. P. F. Denza.
Genoa	29.82	757.5	30.01	762.3	66.6	19.2	66	E	3.1	1.4			4	E		0	0		Prof. G. M. Garibaldi.
Mondovi	28.06	712.7	29.93	760.1	68.4	20.2	61	NW			2		1	W		0	0		Prof. D. C. Bruno.
Pesaro	29.92	760.0	29.97	761.2	69.8	21.0	54	NE	9.8	4.4			8			0	0		Prof. Luigi Guidi.
Florence	29.71	754.6	29.96	761.0	77.0	25.0	42	W			2		7			0	0		Cav. F. Meucci.
Leghorn	29.94	760.4	30.02	762.5	71.2	21.8	67	W	5.6	2.5			6			0	0		Prof. P. Monte.
Rome	29.82	757.3	29.99	761.7	69.3	20.7	66	N					10			0	0		Prof. P. S. Ferrari.
Lecce	29.74	755.3	29.98	761.5	75.6	24.2	43	NNE	7.4	3.3			2			0	0		Prof. C. De Giorgi.
Cosenza	29.08	738.6	29.93	760.1	83.5	28.6	66	SE	1.3	0.6			3			0	0		Prof. D. Conti.
Cagliari	29.74	755.4	29.93	760.3	75.9	24.4	46	S			2		5			0.020	0.5		Prof. A. Pacinotti.
Palermo	29.73	755.1	29.98	761.4	72.0	22.2	67	NE	4.9	2.2			10			0	0		Prof. G. Ciacciatore.
Syracuse	29.94	760.5	29.98	761.6	77.7	25.4	68	NE	6.3	2.8			9	WNW		0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.6	29.94	760.5	75.9	24.4	57	E	1.3	0.6			8			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					72.0	22.2	75	N	2.9	1.3		ck	8os			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.67	753.6	29.87	758.7	70.4	21.3	96	SE	0.1	0.04			10s			0.660	16.76	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.93	760.2	30.00	762.0	64.4	18.0	88	SSW	3.5	1.6		0	0			0	0	Clear	The Staff.
Wakayama	29.92	759.9	29.97	761.2	71.6	22.0	75	S	2.6	1.2		10ck				0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.07	636.8	30.09	764.3	57.2	14.0	75	Calm			0	4ks	0			0.05	1.2	Fair	Prof. L. Perez.
Guanaxuato	23.66	601.0			59.0	15.0	84	Calm	0	0		1c	6k	NE	SE	0.59	15.0		Vicente Fernandez.
Leon	24.39	619.4	30.00	762.1	63.1	17.3	88	SW			1	3c	1k	E		0.10	2.5	Fair	Prof. M. Leal.
Mazatlan	29.67	753.7	29.93	760.3	77.0	25.3	84	SE			1	9k	0	NE		0	0	Very cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.6	29.97	761.2	58.8	14.9	80	Calm	0	0			10k		N	0.49	12.3	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.8	29.83	757.7	63.3	17.4	92	Calm			0	9ck	0	SE		0.11	2.9	Very cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.43	595.2	30.15	765.8	56.3	13.5	43	Calm	0	0		2k	0	E		Inap.	Inap.	Clear	Prof. P. Spina.
San Luis Potosi	24.16	613.7	30.06	763.4	62.4	16.9	68	SE			1	1	5	W	E	0.008	0.2	Almost cld'y	G. Barroeta, M. D.
Tlacotalpam	29.87	758.7	29.88	759.0	78.8	26.0	87	S			1	4	6	N		0	0	Covered	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.59	573.7	30.14	765.6	59.2	15.1	86	Calm			0	4ck	0	E		0.08	2.0	Fair	J. C. Castrillon

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.05	763.2	30.05	763.2	62.6	17.0		W			3					0	0		
Groningen	29.91	759.7	29.97	761.1	56.8	13.8		NW			3					0.118	3.0		
Helder	30.00	761.9	30.00	761.9	56.3	13.5		WNW			2					0.043	1.1		
Hellevoetsluis	30.02	762.6	30.02	762.6	64.6	18.1	79	W			3					0	0		
Utrecht	29.97	761.2	30.02	762.4	68.9	20.5	61	WNW			2		5			0.126	3.2	Cloudy	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.02	762.5	30.08	763.9	64.8	18.2	73	NW	3.4	1.5			3			0.173	4.4		
Brönö	30.13	765.4	30.17	766.4	73.4	23.0	38	S	27	12			2			0	0		
Christiania	30.00	762.0	30.14	765.5	77.4	25.2	30	ESE	9	4			8			0	0		
Tromsö	30.15	765.9	30.21	767.3	65.1	18.4	35	SSW	9	4			0			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.26	768.6	30.47	773.9	70.9	21.6	91	W			3		6			0	0		Dr. J. A. Sampaio.
Campo Major	29.08	738.7	30.05	763.3	75.2	24.0	39	WNW	3.8	1.7			3			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.20	767.0	30.29	769.3	69.6	20.9	66	SW	6.3	2.8			4			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.84	758.0	30.20	767.0	65.1	18.4	45	NNW	26.2	11.7			1			6	0		The Staff.
Ponta Delgada (Azores)	30.37	771.4	30.44	773.2	73.4	23.0	69	SW	9.8	4.4			6			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.90	759.5	73.2	22.9		WNW			2		3		WNW	1	WNW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			30.07	763.6	66.2	19.0		NW			3		7		NW	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.84	758.0	85.1	29.5		SW			4		10		SW	3	SW	5	Raining.	J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	30.44	773.1	30.46	773.6	55.2	12.9	48	N	9	4			0						Capt. Sseliwerstow.
Astrakhan	29.92	759.9	29.84	757.8	90.9	32.7	34	S	9	4			0						Capt. Wisganow.
Barnaul	29.10	739.1	29.53	751.4	62.1	16.7	68	SW	13	6			10						Meteorological Obs.
Dorpat	29.95	760.6	30.18	766.6	72.1	22.8	42	ENE	16	7		2c							Prof. Dr. Weihrauch.
Ekaterinburg	29.02	737.0	29.97	761.2	54.7	12.6	67	NE	7	3			9ks;kn						Meteorological Obs.
Irkutsk																			
Kasan	29.79	756.6	30.05	763.3	67.5	19.7	47	Calm	0	0			4k						Physical Cabinet.
Kertch	29.81	757.1	29.83	757.6	77.4	25.2	82	SE	4	2			3						Lagorio.
Kieff	29.19	741.5	29.79	756.7	78.6	25.9	60	ESE	2	1		c;ck	4ks						Physical Cabinet.
Krotkowo*	29.66	753.4	30.12	765.0	69.8	21.0	41	N					1						Cand. Fatjanow.
Lugan	29.53	750.1	29.72	754.9	92.5	33.6	21	E	18	8			4						Meteorological Obs.
Moscow	29.60	751.8	30.13	765.3	70.2	21.2	50	E	4	2			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.73	755.1	29.80	756.9	84.7	29.3	58	S	18	8			9n						Kurdakof.
Nikolaievsk, on the Amoor	29.94	760.5	30.03	762.7	39.4	4.1	84	Calm	0	0			0					Foggy	
Nukuss																			
Orenburg																			
Pekin (China)	29.61	752.0	29.75	755.6	65.8	18.8	98	Calm	0	0			8n					Raining	Physical Observatory.
St. Petersburg	30.30	769.6	30.32	770.0	64.4	18.0	42	ENE	13	6			0						Central Physical Obs.
Tashkend	28.11	713.9	29.56	750.8	86.0	30	50	Calm	0	0			0						Teich, A. M.
Tiflis	28.43	722.0	29.76	756.0	81.0	27.2	49	SE	4	2			8s						Physical Observatory.
Vladivostock																			
Warsaw	29.40	746.8	29.80	757.0	76.6	24.8	60	S	2	1			2k						Astronomical Obs.
Wilna	29.51	749.6	29.91	759.7	77.4	25.2	58	E	9	4			3						Astronomical Obs.
Yeniseisk	29.54	750.2	29.82	757.4	55.2	12.9	70	SSE	2	1			2						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.94	760.4	30.04	763.1	68.0	20	77	S	2.2	1.03			9			0.195	4.96	Thunder-storm	Antonio Rave, Director
Bilbao, Met. Obs'y	30.21	767.4	30.27	768.8	63.5	17.5	69	NW	3.1	1.42						0.035	0.9	Rainy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.24	691.8			58.5	14.7	71	NE	15.1	6.76			7			0	0	Cloudy	Domingo Martin y Peres.
Madrid, Royal Observatory	27.84	707.2	29.97	761.2	79.2	26.2	38	NW	2.9	1.33		0	9			0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.86	758.4	30.00	762.1	82.4	28.0	54	NE	6.2	2.75		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.31	744.5	30.21	767.2	61.5	16.4	61	N	13.7	6.1			9			0	0	Almost cov'd	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.00	762.1	30.07	763.7	82.2	27.9	78	ENE	4.9	2.2		1cs	0			0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.78	756.4	29.83	757.7	82.7	28.2	76	S	8.1	3.7			2k		E	0.90	22.9	Clear.	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.05	763.2	30.15	765.7	66.4	19.1	60	WNW	11.2	5.0		0	1		W	0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.6	30.08	763.9	82.4	28.0	80	SE	12.0	5.35		5k	4k	SE	SE	0	0	D. clouds	Enrique Gades, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.89?	754.1?	29.73?	755.1?	59.4	15.2	.....	S	.....	.....	2	.....	0	.....	.....	0	0	.....	
Umea	30.39	771.9	30.44	773.2	65.5	18.6	70	E	.....	.....	4	.....	6	.....	.....	0	0	.....	
Hernosand	30.35	770.9	30.40	772.2	68.4	20.2	57	E	.....	.....	2	.....	0	.....	.....	0	0	.....	
Stockholm	30.08	764.1	30.26	768.6	64.4	18.0	36	ENE	.....	.....	7	.....	0	.....	.....	0	0	.....	
Wisby	30.00	762.1	30.07	763.6	70.2	21.2	42	E	.....	.....	7	.....	0	.....	.....	0	0	.....	
SUB-SERIES.																			
Upsala	30.17	766.2	30.25	768.4	70.0	21.1	29	E	12.3	5.5	.....	.....	0	.....	.....	0	0	.....	Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Observer.
Barque Australia	.....	.....	.....	J. P. Påhlson.
H. M. Corvette Balder	.....	.....	.....	Capt. A. C. Schonmeyr.
Saga	.....	.....	.....	M. von Krusenstierna.

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Geneva	28.59	726.1	29.98	761.5	65.5	18.6	51	N	.....	.....	2	.....	6	.....	.....	0	0	Cloudy	The Obsefvatory.
Zurich	28.40	721.3	29.98	761.6	69.8	21.0	59	W	.....	.....	1	.....	3	.....	.....	0	0	Lightly cl'dy	The Observatory.

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —0.4 mm.; Thermometer, —2.0 Cent. Relative Humidity, —5 per cent.
NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Constantinople	.....	.....	29.87	758.6	83.3	28.5	45	N	13	6.0	.....	.....	0	.....	.....	6	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.05	763.2	76.1	24.5	.....	NW	.....	.....	3	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
SUB-SERIES.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.77	756.2	83.7	28.7	57	W	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0–10.	Up'er 0–10.	Lo'er 0–10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Bathurst, N. B.	.....	.....	.....	.....	55.0	12.8	.....	NE	9	4.0	.....	.....	9s	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.49	749.0	29.55	750.6	53.3	11.8	73	N	12	5.4	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.42	747.3	29.46	748.3	50.1	10.1	89	N	10	4.5	.....	.....	10n	.....	.....	0.005	0.13	Light rain	H. J. Cundall, C. E
Cornwall, Ontario	29.49	749.0	29.68	753.9	55.1	12.8	83	NW	.....	.....	1	.....	9s	.....	.....	0.741	18.83	Cloudy	James Smith, M. A.
Dalhousie, N. B.	.....	.....	.....	.....	54.0	12.2	67	W	.....	.....	1	0	2ks	.....	.....	0	0	Clear	H. A. Johnson.
Father Point, Quebec	29.66	753.4	29.68	753.9	51.6	10.9	90	N	20	8.9	.....	.....	10n	.....	.....	0	0	Cloudy	J. McWilliams.
Fredericton, N. B.	29.50	749.3	29.56	750.8	56.0	13.3	63	NE	9	4.0	.....	.....	10s	.....	.....	0.010	0.25	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.20	741.7	30.01	762.2	53.0	11.7	93	E	2	0.9	.....	.....	8ks	.....	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	28.82	732.0	29.91	759.7	53.0	11.7	79	N	.....	.....	1	1c	0	N	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.32	744.7	29.45	748.4	59.7	15.4	61	NE	11	4.9	.....	0	2ks	.....	.....	0	0	Fair	A. Allison.
Hamilton, Ontario	29.53	750.0	29.92	760.0	56.7	13.7	84	NW	.....	.....	1	8cs	0	W	.....	0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.48	748.8	29.81	757.2	56.4	13.6	81	NW	9	4.0	.....	0	0	.....	.....	0.57	14.5	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.31	744.5	29.34	745.2	55.3	12.9	77	W	6	2.7	.....	8k	0	W	.....	Inap.	Inap.	Cloudy	C. H. Rigby.
Montreal, Quebec	29.50	749.3	29.70	754.4	58.6	14.8	72	NW	7	3.1	.....	4c;ck	4ks	NE	.....	0.20	5.1	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	30.21	767.3	30.25	768.3	53.3	11.8	61	N	.....	.....	2	0	0	.....	.....	0	0	Clear	J. R. Nason.
Norwood, Ontario	29.15	740.4	29.83	757.7	54.8	12.7	69	N	3	1.3	.....	0	1s	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.24	742.7	29.93	760.2	52.0	11.1	79	N	8	3.6	.....	2k	8ks	N	.....	0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	29.15	740.4	29.89	759.2	52.7	11.5	73	NW	.....	.....	1	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.23	742.4	29.89	759.2	56.1	13.4	94	N	14	6.3	.....	5k	0	W	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.27	743.4	29.90	759.4	57.4	14.1	75	NW	4	1.8	.....	3ck	0	NW	.....	0.02	0.5	Fair	M. Payne.
Quebec, Quebec	29.39	746.5	29.70	754.4	55.0	12.8	80	E	.....	.....	5	2cs	3s	E	.....	0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.44	747.8	29.89	759.2	55.0	12.8	68	W	6	2.7	.....	4k	0	N	.....	0.27	6.9	Fair	W. H. McIntyre.
St. John, N. B.	29.35	745.5	29.52	749.8	56.0	13.3	69	NE	10	4.5	.....	7ck	0	.....	.....	0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.22	742.2	29.93	760.2	55.1	12.8	73	NE	9	4.0	.....	1k	8ks	.....	.....	0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.64	727.4	29.92	760.0	50.2	10.1	82	N	7	3.1	.....	2ck	2s	N	.....	0	0	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.34	745.2	29.38	746.2	54.2	12.3	79	W	2	0.9	.....	.....	10ks	.....	.....	Inap.	Inap.	Raining	T. C. Hill, C. E.
Toronto, Ontario	29.54	750.3	29.92	760.0	54.2	12.3	68	N	11	4.9	.....	.....	8ks	.....	.....	0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.85	732.8	29.90	759.4	54.5	12.5	75	N	14	6.3	.....	3k	0	NW	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.37	746 0	29.44	747.8	60.1	15.6	65	NE	5	2.2	.....	8k	0	NW	.....	0	0	Fair	Lt. F. E. Wilmot, R. N.
SUB-SERIES.																			
St. Johns, Newfoundland	29.27	743.4	29.51	749.5	61	16.1	61	W	.....	.....	.....	.....	10n	.....	.....	0.25	6.3	Cloudy	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	29.41	747.0	15.1	10.6	.....	Calm	.....	.....	0	.....	.....	.....	.....	0.16	4.1	.....	The Commandant.

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer. U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.63	752.6	29.71	754.6	68	20.0	56	NW	8	3.6		1k	0	NW		0.24	6.1	Clear	
Alpena, Michigan	29.31	744.5	29.95	760.7	58	11.7	67	NE	18	8.0		5cs	0	NE		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.84	732.5	29.92	760.0	82	27.8	67	W	9	4.0		0	0			0.10	2.5	Clear	
Atlantic City, New Jersey	29.70	754.4	29.71	754.6	73	22.8	63	N	13	5.8		2c	0	NW		0.03	0.8	Clear	
Augusta, Georgia	29.78	756.4	29.97	761.2	85	29.4	64	W			1	5cs	Haze	W	Calm	0	0	Fair	
Baltimore, Maryland	29.70	754.4	29.75	755.6	77	25.0	46	NW	12	5.4		5c	0	NW		0.13	3.3	Fair	
Barnegat, New Jersey	29.68	753.9	29.70	754.4	70	21.1	61	N	21	9.4		5ck	0	NW		1.11	28.2	Fair	
Bismarck, Dakota	28.18	715.8	30.03	762.7	56	13.3	93	NE	7	3.1			10n		Calm	0.16	4.1	Light rain	
Boerne, Texas	28.50	723.9	29.76	755.9	74	23.3	95	SE	8	3.6		5k	5ks	SE	SE	0.02	0.5	Cloudy	
Boise City, Idaho	27.11	688.6	30.07	763.8	58	14.4	48	N	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.46	748.3	29.61	752.1	62	16.7	61	NW	8	3.6		5ck	2s	NW	NW	Inap.	Inap.	Fair	
Brackettville, Texas	28.75	730.2	29.76	755.9	76	24.4	86	SE	11	4.9			10ks		SE	0	0	Cloudy	
Breckenridge, Minnesota	28.86	733.0	29.82	757.4	57	13.9	87	E	14	6.3			10s		E	0	0	Cloudy	
Brownsville, Texas	29.89	759.2	29.93	760.2	82	27.8	91	SE	5	2.2		0	0			0.36	9.1	Clear	
Buffalo, New York	29.19	741.4	29.88	758 9	55	12.8	74	N	5	2.2		0	8ks		N	0.01	0.3	Cloudy	
Burkes, Arizona					60	15.6	20	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.42	747.3	29.70	754.4	59	15.0	65	N	15	6.7		5ck	0	N		0.19	4.8	Fair	
Cairo, Illinois	29.56	750.8	29.92	760.0	84	28.9	71	SW	14	6.3		0	0			0	0	Clear	
Campo, California	27.36	694.9	29.93	760.2	43	6.1	75	SW	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.76	755.9	29.77	756.1	85	29.4	68	W	8	3.6		0	0			0	0	Clear	
Cape Henry, Virginia	29.72	754.9	29.73	755.1	80	30.0	74	W	8	3.6		5ck	2s	W	W	0	0	Fair	
Cape Lookout, N. Carolina	29.78	756.4	29.79	756.7	79	26.1	87	NW	11	4.9		10c	0	W		0.02	0.5	Cloudy	
Cape May, New Jersey	29.69	754.1	29.72	754.9	74	23.3	47	NW	28	12.5		0	0			0	0	Clear	
Castroville, Texas	29.17	740.9	29.82	757.4	78	25.6	82	SE	6	2.7			10s		S	1.04	26.4	Threatening	
Cedar Keys, Florida	30.04	763.0	30.06	763.5	83	28.3	79	W	11	4.9		0	1ks		W	0	0	Clear	
Charleston, South Carolina	29.84	757.9	29.90	759.4	86	30.0	58	W	6	2.7		0	0			0	0	Clear	
Charlotte, North Carolina	29.04	737.6	29.80	756.9	79	26.1	66	W	3	1.3		5ck;cs	Haze	W	Calm	0	0	Fair	
Chattanooga, Tennessee	29.18	741.1	29.94	760.5	82	27.8	75	SW	4	1.8		0	Haze		Calm	0.19	4.8	Clear	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	50	10.0	52	NW	10	4.5		0	0			0.01	0.3	Clear	
Chicago, Illinois	29.16	740.7	29.82	757.4	61	16.1	88	N	9	4.0			10s		Calm	0	0	Cloudy	
Chincoteague, Virginia	29.73	755.1	29.74	755.4	77	25.0	100	NW	11	4.9		8k	2s	NW	NW	0.13	3.3	Cloudy	
Cincinnati, Ohio	29.26	743.2	29.98	758.9	76	24.4	77	NW	4	1.8			10ks		SW	0.92	23.4	Cloudy	
Cleveland, Ohio	29.20	741.7	29.91	759.7	57	13.9	81	N	10	4.5		2k	5ks	N	N	0.04	1.0	Cloudy	
Coleman City, Texas	28.14	714.7	29.72	754.9	75	23.9	81	S	10	4.5		5ck	0	Calm		0	0	Fair	
Columbus, Ohio	29.05	737.9	29.85	758.2	70	21.1	66	SE	9	4.0		5k	0	W		0.58	14.7	Fair	
Concho, Texas																			
Corsicana, Texas	29.53	750.0	29.98	761.5	78	25.6	86	S	8	3.6		0	5ks		Calm	0	0	Fair	
Davenport, Iowa	29.10	739.1	29.69	754.1	74	23.3	90	S	6	2.7			10s		SW	1.86	47.2	Cloudy	
Dayton, Washington T'y					46	7.8	76	SW			2	2c	2s	SW	SW	0.09	2.3	Fair	
Deadwood, Dakota	25.38	644.6			47	8.3	92	Calm	0	0			Fog		Calm	0.54	13.7	Foggy	
Decatur, Texas	28.78	731.0	29.89	759.2	78	25.6	82	SE	15	6.7		8k	0	S		0	0	Fair	
Delaware Breakwater, Del.	29.09	754.1	29.71	754.6	75	23.9	68	NW	24	10.7		5c	0	W		0	0	Fair	
Denison, Texas	29.15	740.4	29.90	759.4	78	25.6	82	S	8	3.6		5k	0	S		0.11	2.8	Fair	
Denver, Colorado	24.85	631.2	30.07	763.8	51	10.6	46	S	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	28.76	730.5	29.57	751.1	76	24.4	86	SW	4	1.8			10n		SW	0.02	0.5	Light rain	
Detroit, Michigan	29.25	742.9	29.90	759.4	56	13.3	75	NE	9	4.0		8cs;k	0	Calm;NE		0.21	5.3	Fair	
Dodge City, Kansas	27.27	692.6	29.47	748.5	62	16.7	67	NW	24	10.7		0	0			0.11	2.8	Clear	
Dubuque, Iowa	29.11	739.4	29.79	756.7	56	13.3	87	NE	8	3.6			10n		NE	0.51	13.0	Light rain	
Duluth, Minnesota	29.33	745.0	30.00	762.0	46	7.8	84	NE	16	7.2			10s		Calm	0	0	Cloudy	
Eagle Pass, Texas	29.11	739.4	29.80	756.9	80	26.7	78	SE	8	3 6		8k	0	SE		0	0	Fair	
Eastport, Maine	29.43	747.5	29.50	749.3	57	13.9	63	N	12	5.4			10ks		N	0	0	Cloudy	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.18	741.1	29.88	758.9	57	13.9	75	N	13	5.8			10s		N	0	0	Cloudy	
Escanaba, Michigan	29.35	745.5	30.00	762.0	49	9.4	85	NE	11	4.9		8c	0	NW		0	0	Fair	
Florence, Arizona					58	14.4	64	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.06	636.5	30.51	774.9	41	5.0	41	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.92	709.2	29.71	754.6	55	12.8	93	NE	4	1.8		0	0			0	0	Clear	
Fort Custer, Montana	26.76	679.7			56	13.3	68	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.19	639.8	30.15	765 8	69	20.6	70	SW	4	1.8		2cs	0	Calm		0	0	Fair	
Fort Elliot, Texas	26.84	681.7	28.95	735.3	70	21.1	66	N	12	5.4		5k	0	N		0	0	Fair	
Fort Gibson, Indian Ter.	29.35	745.5	29.86	758.4	78	25.6	78	S	12	5.4			10s		S	0	0	Cloudy	
Fort Grant, Arizona	25.21	640.3	30.01	762.2	67	19.4	13	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.65	727.7	29.86	758.4	77	25.0	77	S	12	5.4		0	8s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.21	691.1			59	15.0	48	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.69	703.3	29.52	749.8	73	22.8	81	SE	7	3.1		1c	1s	Calm	S	0.27	6.9	Clearing	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.66	728.0	29.71	754.6	74	23.3	90	S	14	6.3		5ck	0	S		0.34	8.6	Fair	
Fort Stevenson, Dakota	28.13	714.5			57	13.9	87	E	3	1.3			10s		Calm	0.07	1.8	Cloudy	
Fort Verde, Arizona					52	11.1	29	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.96	761.0	30.00	762.0	82	27.8	79	S	11	4.9		5k	0	S		Inap.	Inap.	Fair	
Grand Haven, Michigan	29.25	742.9	29.87	758.7	63	17.2	72	NE	9	4.0		5k	0	Calm		Inap.	Inap.	Fair	
Helena, Montana					65	18.3	44	NW	1	0.4		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.07	738.4	29.81	757.2	71	21.7	95	W	2	0.9			10n		W	0.88	22.4	Light rain	
Indianola, Texas	29.95	760.7	29.98	761.5	81	27.2	74	S	11	4.9		2k	0	Calm		0.02	0.5	Fair	
Jacksboro, Texas	28.79	731.3	29.86	758.4	77	25.0	77	S	3	1.3		0	0			0.05	1.3	Clear	
Jacksonville, Florida	29.98	761.5	30.00	762.0	88	31.1	56	SW	8	3.6		0	0			Inap	Inap.	Clear	
Keokuk, Iowa	29.10	739.1	29.66	753.4	77	25.0	86	SW	8	3.6			10n		SW	0.18	4.6	Light rain	
Key West, Florida	30.06	763.5	30.09	764.3	83	28.3	75	Calm	0	0		5k	0	E		0.35	8.9	Fair	
Kittyhawk, North Carolina	29.76	755.9	29.78	756.4	83	28.3	67	NW	14	6.3		5c	0	Calm		0	0	Fair	
Knoxville, Tennessee	28.98	736.1	29.93	760.2	77	25.0	80	SW	8	3.6		0	0			0	0	Clear	
La Crosse, Wisconsin	29.09	738.9	29.80	756.9	57	13.9	100	E	8	3.6			10n		Calm	0.51	13.0	Heavy rain.	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	59	15 0	23	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.47	748.5	29.80	756.9	82	27.8	79	SE	8	3.6		0	2s		SE	0	0	Fair	
Leavenworth, Kansas	28.84	732.5	29.62	752.3	76	24.4	77	S	12	5.4		5k	0	SW		0	0	Fair	
Lewiston, Idaho	29.16	740.7	29.80	756 9	55	12.8	100	E	1	0.4			10n		Calm	0.20	5.1	Light rain	
Little Rock, Arkansas	29.64	752.8	29.94	760.5	80	26.7	82	SW	8	3.6		0	0			0	0	Clear	
Los Angeles, California	29.60	751.8	29.94	760.5	59	15.0	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.32	744.7	29.85	758.2	75	23.9	86	NE	4	1.8			10s		Calm	0.89	22.6	Cloudy	
Lynchburg, Virginia	29.14	740.1	29.77	756.1	81	27.2	55	SW	3	1.3		10ck	0	Calm		0	0	Cloudy	
Madison, Wisconsin	28.84	732.5	29.80	756.9	52	11.1	86	NE	12	5.4			10n		Calm	0.05	1.3	Light rain	
Marquette, Michigan	29.32	744.7	30.03	762.7	47	8.3	85	NW	3	1.3		8c	0	NW		0.02	0.5	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.30	718.8	29.97	761.2	77	25.0	82	SE	10	4.5		2k	0	SE		0.32	8.1	Fair	
Memphis, Tennessee	29.60	751.8	29.92	760.0	82	27.8	71	SW	11	4.9		1cs	0	Calm		0	0	Clear	
Milwaukee, Wisconsin	29.15	740.4	29.87	758.7	49	9.4	93	NE	16	7.2			10s		Calm	0	0	Cloudy	
Mobile, Alabama	30.03	762.7	30.07	763.8	80	26.7	82	NW	6	2.7		0	0			0	0	Clear	
Montgomery, Alabama	29.81	757.2	30.03	762.7	82	27.8	74	W	9	4.0		0	0			0	0	Clear	
Morgantown, West Virginia	28.88	733.5	29.82	757.4	70	21.1	66	NE	6	2.7			10ks		NW	0.44	11.2	Cloudy	
Mt Washington, N. H.	23.46	595.9	29.82	757.4	34	1.1	100	NW	30	13.4			Fog		NW	0.23	5.8	Dense fog	
Nashville, Tennessee	29.43	747.5	29.93	760.2	86	30.0	65	W	5	2.2		0	0			0	0	Clear	
New Haven, Connecticut	29.55	750.6	29.66	753.4	69	20.6	56	N	11	4.9		2ck	2s	N	N	0.04	1.0	Fair	
New London, Connecticut	29.57	751.1	29.66	753.4	69	20.6	52	NW	6	2.7		0	0			0.90	22.9	Clear	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	80	26.7	82	SW	5	2.2		1c	Haze	W	Calm	0.02	0.5	Clear	
Newport, Rhode Island	29.57	751.1	29.62	752.3	66	18.9	59	NW	11	4.9		2c	0	Calm		0.03	0.8	Clear	
New River, North Carolina																			
New York, New York	29.53	750.0	29.70	754.4	67	19.4	60	NW	12	5.4		5k	0	NW		0.22	5.6	Fair	
Norfolk, Virginia	29.70	754.4	29.76	755.9	84	28.9	64	NW	4	1.8		5c	0	SW		0	0	Fair	
North Platte, Nebraska	27.00	685.8	29.49	749.0	57	13.9	87	NW	16	7.2		0	0			0.65	16.5	Clear	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	45.0	7.2	84	S	5	2.2		1cs	0	Calm		Inap.	Inap.	Clear	
Omaha, Nebraska	28.50	723.9	29.52	749.8	72	22.2	85	SW	6	2.7		0	0			0.71	18.0	Clear	
Oswego, New York	29.54	750.3	29.85	758.2	55	12.8	81	N	8	3.6		0	0			0.04	1.0	Clear	
Pembina, Dakota	29.12	739.6	29.93	760.2	52	11.1	93	E	6	2.7			10s		Calm	0	0	Cloudy	
Pensacola, Florida	30.04	763.0	30.07	763.8	82	27.8	71	NW	9	4.0		1k	0	Calm		0	0	Clear	
Philadelphia, Pennsylvania	29.68	753.9	29.73	755.1	70	21.1	57	N	18	8.0		5c;k	0	NW		0	0	Fair	
Phœnix, Arizona	28.78	731.0	30.49	774.4	79	26.1	30	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.90	454.6	30.11	764.8	28	— 2.2	54	N	8	3.6		0	0			0	0	Clear	
Pilot Point, Texas	29.18	741.1	29.99	761.7	77	25.0	86	SE	13	5.8			10ks		S	0.46	11.7	Cloudy	
Pioche, Nevada	24.07	611.4	29.84	757.9	53	11.7	25	S	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.08	738.6	29.86	758.4	66	18.9	64	W	5	2.2		0	0			0.04	1.0	Clear	
Port Huron, Michigan	29.27	743.4	29.92	760.0	53	11.7	80	NE	15	6.7		2cs	5ks	NW	N	0	0	Fair	
Portland, Maine	29.53	750.0	29.58	751.3	63	17.2	57	NW	9	4.0		5k	2ks	NW	Calm	0.14	3.6	Fair	
Portland, Oregon	30.11	764.8	30.18	766.6	48	8.9	93	S	3	1.3			10n		W	0.09	2.3	Light rain	
Portsmouth, North Carolina					84	28.9	71	W	16	7.2		5c	0	Calm		0	0	Fair	
Prescott, Arizona	24.79	629.6	30.15	765.8	49	9.4	24	W	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	83	28.3	75	NW	6	2.7		1ck	0	Calm		0	0	Clear	
Red Bluff, California	29.60	751.8	29.96	761.0	58.5	14.7	65	S	2	0.9		0	0			0	0	Clear	
Rio Grande City, Texas					79	26.1	95	SE			4	5k	0	S		0	0	Fair	
Rochester, New York	29.26	743.2	29.86	758.4	56	13.3	69	NW	11	4.9		2k	0	NW		0.01	0.3	Clear	
Roseburg, Oregon	29.62	752.3	30.20	767.1	45.5	7.5	88	Calm	0	0		5ck	0	N		0.03	0.8	Fair	
Sacramento, California	29.86	758.4	29.94	760.5	51.5	10.8	83	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.26	743.2	29.86	759.0	78	25.6	82	SW	8	3.6			10ks		SW	0.04	1.0	Cloudy	
St. Paul, Minnesota	28.94	735.1	29.74	755.4	58	14.4	88	NE	16	7.2			10n		NE	0.11	2.8	Light rain	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	55	12.8	33	SE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.26	743.2	29.93	760.2	78	25.6	88	SE	4	1.8			10s		SE	0.07	1.8	Cloudy	
San Diego, California	29.89	759.2	29.96	761.0	61	16.1	88	NW	4	1.8			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	29.27	743.4	29.92	760.0	60	15.6	71	N	14	6.3			10ks		N	0	0	Cloudy	
Sandy Hook, New Jersey	29.65	753.1	29.68	753.9	67	19.4	69	NW	36	16.1		5c	0	NW		0.14	3.6	Fair	
San Francisco, California	29.95	760.7	30.01	762.2	52	11.1	86	W	8	3.6		0	0			0	0	Clear	
Santa Fé, New Mexico	23.32	592.3	29.86	758.4	50	10.0	14	NE	4	1.8		0	Sm'e		Calm	0	0	Dense smoke	
Savannah, Georgia	29.87	758.7	29.96	761.0	90	32.2	57	W	5	2.2		0	Sm'e		Calm	0	0	Clear	
Shreveport, Louisiana	29.78	756.4	29.98	761.5	79	26.1	82	S	4	1.8		0	0			0.02	0.5	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	29.83	757.7	29.86	758.4	85	29.4	61	W	4	1.8		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.14	740.1	29.77	756.1	80	26.7	82	S	7	3.1			10s		SW	0.28	7.1	Cloudy	
Springfield, Massachusetts	29.54	750.3	29.66	753.4	66	18.9	54	NW	9	4.0		0	8ks		NW	0.16	4.1	Cloudy	
Stockton, Texas	26.87	682.5	29.87	758.7	72	22.2	85	S	14	6.3		2cs	0	Calm		0	0	Fair	
Thatcher's Island, Mass	29.58	751.3	29.63	752.6	61	16.1	88	N	11	4.9		5ck	5s	N	N	0.13	3.3	Cloudy	
Toledo, Ohio	29.24	742.7	29.91	759.7	59	15.0	88	NE	12	5.4			10s		N	Inap.	Inap.	Cloudy	
Tucson, Arizona	27.47	697.7	30.02	762.5	72	22.2	18	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.69	754.1	30.19	766.8	50	10.0	61	SW	20	8.9		0	5s		SW	0.02	0.5	Fair	
Uvalde, Texas	29.00	736.6	29.79	756.7	77	25.0	86	SE	4	1.8			10s		SE	1.21	30.7	Cloudy	
Vicksburg, Mississippi	29.80	756.9	30.05	763.3	80	26.7	82	SW	6	2.7		0	5s		SW	0	0	Fair	
Virginia City, Montana	24.21	614.9	29.69	754.1	47	8.3	55	Calm	0	0		0	0			0.04	1.0	Clear	
Visalia, California	29.52	749.8	29.89	759.2	59	15.0	54	W	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.68	753.9	29.79	756.7	76	24.4	60	NW	10	4.5		8cs	0	W		0	0	Fair	
Wickenburg, Arizona					66	18.9	28	NW				0	0			0	0	Clear	
Wilmington, North Carolina	29.76	755.9	29.83	757.7	84	28.9	60	NW	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.59	650.0	29.95	760.7	44	6.7	45	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.55	750.6	29.58	751.3	65	18.3	63	NW	12	5.4		5k	0	W		0.05	1.3	Fair	
Yankton, Dakota	28.49	723.6	29.42	747.3	63	17.2	94	NW	6	2.7			10s		NW	1.44	36.6	Cloudy	
Yuma, Arizona	29.68	753.9	29.83	757.7	66	18.9	59	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0			55.0	12.8	72	Calm	0	0		5k	0			0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.06	763.5	30.11	764.8	82	27.8	78	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	79	26.1	75	Calm	0	0		0	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.95	760.7	30.03	762.7	81	27.2	78	NE	2	0.9		5ck	5s	E	NE	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.05	763.3	30.05	763.3	77	25.0	91	E			3		8ks			0.390	9.91	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.38	746.2	29.93	760.2	79	26.1	89	N			1		10ks;s			0	0		Francesco J. Cisneros
§ Rivas, Nicaragua					75	24		ENE				2ck	1k	SW	ENE			Fair	Earl Flint.
Santiago de Cuba, W. I.	30.04	763.0	30.06	763.5	83	28.3	74	Calm	0	0		0	0			0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	30.10	764.5	30.15	765.8	46.0	7.8	88	NE	10	4.5		1c	0	E		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,395.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.438 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	OBSERVER.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§ Navy Yard, Pensacola, Fla	30.16	766.1	79	26.1	86	W	6	2.7			5		W					Fair	
§ Navy Yard, Portsmouth, N. H.	29.61	752.1	64	17.8	68	N	7	3.1			5?			0.3	8.			Cloudy?	
Naval Hospital, Yokohama, Japan	29.96	761.0	67	19.4	87	SW			2		0			0	0			Clear.	
§ Adams, Payta, Peru	30.04	763.0	68	20.0	84	SE			1		8		SE					Cloudy	
§ Alaska, Callao, Peru *	30.00	762.0	61	16.1	100	Calm			0		10					Long	SW	Misty	
§ Alert, Yokohama, Japan	29.88	758.9	71	21.7	75	S			2		0			0	0	Smooth		Clear	
§ Alliance, St Pierre, Newfoundland	29.41	747.0	50	10.0	86	ENE			1		10			Light	Light	Smooth	E	Fair	
§ Ashuelot, Han Kow China, N. 31°, E. 114°	29.63	752.6	78	25.6	78	S			1		2		SE			None		Fair	
§ Colorado, New York, N. Y.	29.67	753.6	67	19.4	64	WNW	9	4.0			2		NW	0	0			Hazy	
§ Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	29.68	753.9	66	18.9	68	NNW	20	8.9			2		NW					Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	29.72	754.9	82	27.8	75	W	7	3.1			5		W	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.98	761.5	54	12.2	100	SW	2.4	1.1			3		SW	0	0			Fair	
§ Jamestown, Sitka, Alaska *	29.61	752.1	48	8.9	92	SSE			3		10		N			Smooth		Cloudy	
§ Kearsarge, Boston, Mass	29.57	751.1	65	18.3	63	WNW			3		2					Smooth		Fair	
§ Lackawana, Amapata, Honduras †	30.08	764.0	77	25.0	91	W			3		10		W					Cloudy	
§ Marion, Port Stanley, Falkland I'ds	29.73	755.1	42	5.6	91	Calm			0		10		Calm	Blank	Blank	Smooth		Hazy	
§ Michigan, Erie, Pa	29.32	757.4	57	13.9	87	NE			5		8		N					Cloudy	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.18	766.6	67	19.4	70	NNW			4		2		Calm					Clear	
§ Monocacy, Chefoo, China	29.80	756.9	69	20.6	75				1		10							Cloudy.	
§ New Hampshire, Port Royal, S. C.	30.04	763.0	84	28.9	67	WSW	11	4.9			2		Calm	0	0			Clear.	
Nipsic, Leghorn, Italy	30.00	762.0	70	21.1	75	W			1		5							D. clouds	
§ Onward, Chimbote, Peru †	30.00	762.0	64	17.8	89	SE			2		10		N			Long	W	Cloudy	
§ Palos, Shanghai, China	29.70	754.4	67	19.4	100	E			3		10		E					Rainy	
§ Passaic, Washington, D. C.	29.76	755.9	80	26.7	91	N			2		5		NW	0	0			Fair	
§ Pensacola, San Francisco, Cal.	29.96	761.0	50	10.0	93	WSW			1		0					Smooth	S	Hazy	
§ Portsmouth, Fayal, Azore Islands	30.41	772.4	72	22.2	80	SW			2		5		SW			Long	SW	Fair	
§ Powhatan, New York, N. Y.	29.67	753.6	69	20.6	70	NW			5		2		NW					Fair	
§ Quinnebaug, Antwerp, Belgium	30.00	762.0	68	20.0	65	NW			3		8		Calm					Fair	
§ Richmond, Nagasaki, Japan	29.88	758.9	73	22.8	100	Calm			0		10			0	0			Cloudy	
Rio Bravo, Brownsville, Texas †	30.09	764.3	78	25.6	100	SE	2	0.9			5?		Calm	0.22	5.6			Cloudy?	
§ Saratoga, Gibraltar, Mediterranean	30.10	764.5	69	20.6	75	W			6		2		W	0	0			Misty	
§ Shenandoah, Buenos Ayres, Argentine Republic	29.86	758.4	50	10.0	93	S			2		2		S			Smooth		Fair	
§ St. Louis, League Island, Pa	29.69	754.1	72	22.2	67	NW	12	5.4			2		NW	0	0			Clear	
Swatara, N. 17° 45′ E. 114° 15′ †	29.70	754.4	86	30.0	80	S			3		2		SW			Mod'ate	SW	Clear	
§ Tennessee, New York, N. Y.	29.68	753.9	68	20.0	65	NNW			4		2		NNW	0.17	4.3	Smooth		Fair	
§ Ticonderoga, Nagasaki, Japan	29.87	758.7	74	23.3	100	Calm			0		10		Calm			Smooth		Cloudy	
§ Trenton, N. 40° 43′ E. 2° 25′	30.00	762.0	75	23.9	64	SSE			2		5			1 h'r	1 h'r	None		Cloudy	
§ Vandalia, New Bedford, Mass.	29.59	751.6	64	17.8	78	NNW			2		5		N					Fair	
§ Wabash, Boston, Mass	29.60	751.8	63	17.2	67	NNW	9	4.0			2			0.02	0.5			Clear	
§ Wachusett, S. 37° 46′. W. 89° 01′	30.23	767.8	53	11.7	86	NW			1–2		8		N	0	0	Smooth	SW	Fair	
Wyoming, Villafranca, France	29.99	761.7	67	19.4	74	E			1		8		E			Smooth	E	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 51° 39', W. 31° 04'...*	29.88	758.9	55	12.8		S			5		10		WSW			Smooth	ESE	Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent† Liverpool, Eng	30.10	764.5	62	16.7	77	WSW			2		3		SW	0	0			Clear	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 41° 07', W. 46° 06'....*†	29.65	753.1	68	20.0	84	SW			5		10		WSW	4 h'rs	4 h'rs	Heavy	SW	Raining	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger. N. 27° 50', W. 110° 48'....†	29.72	754.9	78	25.6	86	NW			2		5		NW			Gentle	WNW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 41° 05', W. 172° 06'....†	30.20	767.1	54	12.2	87	NE			3		5		NE			Smooth		Fair	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 34° 25', E. 138° 33'....†	30.01	762.2	71	21.7	85	SSW			3		8		SW	0	0	Smooth		Clear	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Columbia River Bar, Or..†	30.05	763.3	53	11.7	73	W			3		10		WNW			Smooth		Cloudy	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander N. 34° 11', W. 119° 21'....†	29.98	761.5	59	11.7		E			3		10		E			Heavy	NW	Cloudy	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba																			
§ S. S. State of California, G. Dobney. N. 38° 00', W. 123° 10'...†	29.97	761.2	48	8.9		NW			3		5		W			Mod'ate	W	Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.91	759.7	76	24.4	91	N			2		8		NNW			Heavy	S	Cloudy	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	29.93	760.2	56	13.3	87	N			4		9		N	Heavy	Heavy	Smooth	SW	Heavy rain	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 11° 50′ W. 87° 35′... †	29.99	761.7	82	27.8	63	N			3		2		N	1.5	38.	Mod'ate	SW	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.98	761.5	68	20.0	95	SSW			3		0			0	0			Clear	
§ S. S. City of Sidney, H.C. Dearborn, N. 32° 50′, W. 135° 50′...*†	30.18	766.6	57	13.9		NNE			4		10		NE	0	0	Mod'ate	NE	Squally	E. LeSack.
§ S.S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, Acapulco, Mexico.... ...†	29.93	760.2	83	28.3	100	E			2		10		S	0.05	1.3			Cloudy	
§ S.S. Dakota, D. E. Griffiths.																			D. E. Griffiths.
§ S.S. Granada, J M Cavarly N. 33° 46′, W 120° 10′.....†	29.95	760.7	53	11.7	93	WNW			6		10		WNW	0	0	Heavy	WNW	Dense fog	
§ S. S. Idaho, E. Alexander, N. 46° 14′, W. 124° 57′... †	29.95	760 7	60	15.6		WNW			3		2		W			Light	NW	Clear	E. Alexander.
§ S.S. Zealandia, R.C. Ghest, N. 22° 03′, W. 156° 26′.....	29.90	759.4	75	23.9		SE			6		5		SE			Long	ESE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 49° 06′, W. 7° 27′.....†	30.23	767.8	55	12.8		NNW			3		5		NW	Light	Light	Mod'ate	WNW	Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings N. 43° 03′, W. 43° 06′.....†	29.55	750.6	64	17.8	100	SSW			3			Mist		0	0	Rough	SW	Overcast	H. N. Goulden.
S. S. Britanic, H. Perry, Liverpool Bar, Eng.....†	30.26	768.6	57	13.9		N			3		5		N			Smooth		D. clouds	J. Jones.
S. S. Celtic. B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, N. 36° 23′, W. 81° 17′.....†	30.01	762.2	84	28.9		WSW			1		0			0	0	Long	SE	Fine	A. R. Mehaffey.
Schr. Adule Fuller, J. Jorgensen, Boston, Mass	29.54	750.3	64	17.8	58	N					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 23° 26′, W. 69° 06′.....†	30.11	764.8	85	29.4		SSE			1		2		SE	0	0	Mod'ate	SE	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 0° 45′, W. 23° 54′.....*†	30.08	764.0	76	24.4		SE			1		2		SE			Smooth	SE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Forteau, Labrador.....†	29.41	747.0				E			8		10		E	Light	Light			Threatening	S. S. Miner.
Brigantine George, W. H Champlin.																			
Iron Cross, W. Randall																			W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29 48	748.8	45	7.2	100	NE			7		10		NE	1 h'r	1 h'r	Smooth		Overcast	James S. Garvin.

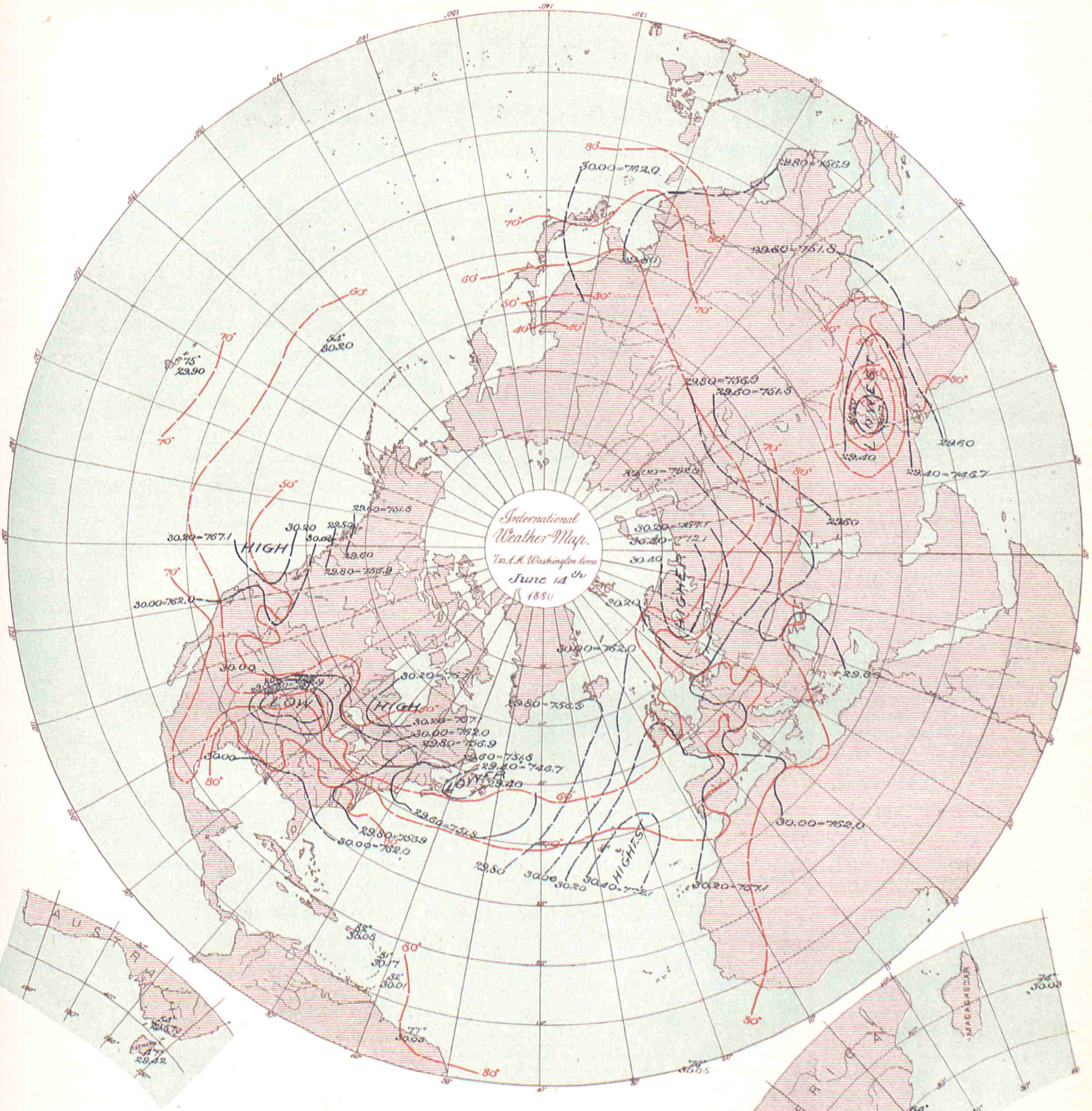
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 15, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			29.99	761.7	77.7	25.4	71	Calm			0		0			0	0	Clear	Metge.
Algiers			29.98	761.6	74.1	23.4	65	ENE			3		0			0	0	Clear	Nicolas.
La Calle			30.03	762.8	73.2	22.9	79	WNW			3		5			0	0	Cloudy	Fonfrède.
Tunis			30.02	762.4															Jacques
Sfax			30.07	763.8															Gau.
Saida			30.00	762.1															Charon.
Tebessa			30.02	762.5	72.7	22.6	27	NW			2		1			0	0	Very fair	Watrin.
Geriville			30.07	763.7	83.8	28.8	30	SW			2		0			0	0	Clear	Lonchamp.
Laghouat			30.04	763.0	83.1	28.4	18	SE			3		0			0	0	Clear	Herlin.
Biskra			30.02	762.4	91.0	32.8	27	E			1		0			0	0	Clear.	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 800? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.32	744.6	29.84	758.0	72.0	22.2	63	E			4		10			0.740	18.8	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.17	741.0	29.91	759.7	74.1	23.4	51	ESE	4.3	1.9			4			0	0		Dr. Wierzbicki.
Eperies	29.02	737.1	29.85	758.3	77.0	25.0	43	N			2		5§8§			0	0		Julius Mikolik.
Gratz	28.69	728.6	29.90	759.4	68.0	20.0	72	SW			2		10			0.083	2.1		Andreas Rospini.
Hermannstadt	28.48	723.3	29.82	757.5	79.2	26.2	55	NW			2		6			0.091	2.30		Prof. A. Gottschling.
Kremsmünster, Observatory	28.57	725.7	29.86	758.5	69.4	20.8	73	E			1		7			0.157	4.0		The Staff.
Lemberg	28.87	733.2	29.80	757.0	76.3	24.6	51	NW			3		7			0.154	3.9		Dr. T. Stanecki.
Pola	29.77	756.1	29.88	758.9	67.9	19.8	83	S			1		10			0.512	13.0		I. R. Hydrographic Office.
Szathmar	29.47	748.6	29.91	759.8	78.1	25.6	48	W			3		3			0	0		Pet. Pancsics, S. J.
Szegedin	29.61	752.0	29.87	758.7	77.5	25.3	45	NW			2		5			0	0		Karl Stancel.
Trieste	29.80	756.8	29.90	759.4	66.6	19.2	86	WSW			1		10			1.287	32.7	Raining	P. Busin.
Vienna	29.23	742.4	29.97	761.1	63.9	17.7	82	N			1		10			0.335	8.5		I. R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.73	755.1	29.93	760.1	54.5	12.5	90	W			2		10		W	0.148	3.75	Light rain	Royal Observatory.
Furnes	29.99	761.7	30.01	762.3	55.8	13.2	96	W					10			0.496	12.6	Raining	M. E. de Cac.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.23	767.8	30.33	770.4	55.1	12.8		NNE	24	10.7			9			0.150	3.81	Squally	W. Boswell.
Ardrossan	30.23	767.8	30.25	768.3	63	17.2		NW			3		3					Blue sky	G. Carrick.
Armagh, (Observatory)	30.09	764.3	30.32	770.1	61.7	16.5		N	6	2.7			5					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.18	766.6	61.8	16.6		NW	23	10.3			2					Blue sky	John Hartnup.
Bolton (Sharples)	29.60	751.8	30.11	764.8	57.2	14.0		NE	6	2.7			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.74	755.4	30.13	765.3	57.8	14.3	67	NE			3		8			0.08	2.0	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	83	28.3		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.96	761.0	30.06	763.5	53.0	11.7		N			2		10					Drizzling	H. Todd.
Cardington			30.05	763.3	56.0	13.3		N			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.92	760.0	30.05	763.3	55.1	12.8		N			1		10k					Gloomy	Lance Crp'l Hocker, R.E.
Donaghadee	30.27	768.8	30.31	769.9	60	15.6		NE			4		0					Blue sky	J. Mac Gowan.
Dover	29.96	761.0	30.00	762.0	57	13.9		N			5		10					Gloomy	J. Costello.
Falmouth (Observatory)	29.96	761.0	30.19	766.8	61.7	16.5		NNW			4		5					Foggy	The Staff.
Fort Napier, Natal	27.86	707.6	30.07	763.8	69.8	21.0		NW			2		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.72	754.9	29.95	760.7	86	30.0		SE			1		8					Raining	
Galway (Queen's College)			30.30	769.6	62	16.7		NW			2		7					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.91	759.7	29.96	761.0	75.2	24.0		NE			2		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.04	763.0	30.24	768.1	66.6	19.2		NE			2		0					Blue sky	D. G. Maclean.
Great Yarmouth	29.95	760.7	29.96	761.0	53	11.7		NNW			4		8					Raining	G. T. Watson.
Greenwich (Royal Obs'y)	29.89	759.2	30.06	763.5	55.3	12.9		NNW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.90	759.4	30.12	765.0	61.5	16.4		NNW			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.39	771.9	30.51	774.9	65	18.3		N			6	4c				0	0	Fine	M. P. Moyle.
Holyhead	30.22	767.6	30.25	768.3	55	12.8		NNW			4		0					Blue sky	John Tilston.
Jersey	29.85	758.2	30.14	765.5	61.9	16.6		NNE			2		2					D. clouds	J. Fisher.
Kew (Observatory)	30.04	763.0	30.08	764.0	56.2	13.4		NNW	13	5.8			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.84	757.9	30.09	764.3	56.3	13.5		N			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.73	755.1	29.81	757.2	78.8	26.0		NW			2		0					Blue sky	A. King.
Nairn	30.27	768.8	30.36	771.1	61	16.1		ENE			3		0					Clear	W. D. Penny.
Nassau, Bahamas			30.04	763.0	85.5	29.7		SW			0		4					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.90	759.4	30.09	764.3	58.3	14.6		NNW			4		10kd		NNE	0.141	3.56	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.60	751.8	30.11	764.8	60.2	15.7		N			6		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.88	758.9	30.13	765.5	57.9	14.4		NW			4		10					Threatening	The Staff, for E. J. Stone, Esq.
Plymouth	30.07	763.8	30.14	765.5	66.4	19.1		NNW			3		10					Overcast	John Merrifield.
*Roche's Point	30.22	767.6	30.34	770.6	65	18.3		NNW			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	30.06	763.5	30.23	767.8	59	15.0		N			5		4					Gloomy	John C. Walker.
Sandwick Manse, Orkneys			30.39	771.9	55	12.8		N	14	6.3			1					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.77	756.1	29.84	757.9	83.2	28.4		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.87	758.7	30.15	765.8	58.5	14.7		NNE			3		10			0.25	6.3	Overcast	W. F. Cooper.
Silloth Rectory	30.20	767.1	30.23	767.8	65.7	18.7	50	SE			5		0			0.036	0.91	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.17	766.2	62.0	16.7		NNW	22	9.8			10					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.88	758.7	30.10	764.5	59.2	15.1		N			1		10					Drizzling	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.16	766.1	30.18	766.1	62	16.7		N			7		5					D. clouds	W. Newcombe.
Valencia (Observatory)	30.34	770.6	30.36	771.1	58.9	14.9		NNW	17	7.2			8					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.95	760.7	29.99	761.7	58.0	14.4	87	WNW	2.9	1.3		10	10			0	0	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			29.70	754.4	47.0	8.3	86	SW			2		8k			0.02	0.5	Squally	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.30	769.6	57.2	14.0		E			6		5k			0.22	5.6	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.89	759.2	30.08	763.9	72.0	22.2	66	ESE	14.0	6.3		6	4	NNW	ESE	0.06	1.5	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.88	758.9	29.97	761.2	41.5	5.3	81	NW	13	5.8			7			0.02	0.5	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.41	772.4	56	13.3		N			4	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.35	770.9				NW			2	2	4	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert				Capt. J. P Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore, N. 51° 55′, W. 6° 20′	3	N	Blue sky	Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond
Barque Dochra				Capt. H Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. O. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	29.20	665.5	29.92	760.0	68.4	20.2	95	Calm			0		10n			0.12	3.	Raining	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.98	761.5	30.03	762.7	57.9	14.4	88	E			6		10						
Fanöe	29.93	760.1	29.95	760.4	62.4	16.9	90	ENE			6		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.92	759.9	29.96	761.0	50.0	10.0	74	SW			7		8					Raining	
Thorshavn (Faröe)	30.32	770.2	30.36	771.1	55.0	12.8	75	SSW			3		7						
Vestervig	29.96	760.9	30.05	763.3	66.0	18.9	75	ENE			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.54	750.2	30.09	764.2	68.0	20	55	N			2		2kn		NW	0	0	Slightly cld'y	Collignon, Director.
Amiens, Normal School	29.91	759.7	30.02	762.5	59.0	15	80	NNW			2		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.88	758.9	30.14	765.5	52.7	11.5	97	NW			2		10	E				Raining	Klein, Commandant.
Avignon, Normal School	29.82	757.4	29.90	759.4	77.9	25.5	40	N			3		0			0	0	Clear	Giraud, Director.
Bar-sur-Seine	29.43	747.5	29.97	761.1	68.5	20.3	55	NW			1		8kn		NNW	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.76	756.0	30.02	762.6	62.4	16.9	67	N			1		8		NW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.09	738.9	29.96	760.9	68.5	20.3	62	N			1		8		N	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.85	758.3	30.05	763.3	59.9	15.5	85	W			1		10		WSW	0.091	2.3	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.10	739.1	30.02	762.5	63.2	19	77	W			2		5n	W	W	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.55	750.6	30.10	764.4	65.3	18.5	83	SSW			3		cn		SSW	0	0		M. Gence, Director.
Brest, Naval Observatory	29.90	759.5	30.15	765.7	62.2	16.8	81	NE			2		10		NE	0.030	0.75	Misty	Ch. de Rermarse, Dir
Caen, Normal School	29.99	761.8	30.07	763.6	59.2	15.1	76	NE			1		5		N	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.61	752.1	30.01	762.3	68.4	20.2	53	W			1		2	W	W	0.055	1.4	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.67	753.5	29.97	761.3	71.8	22.1	54	WNW			2		2		SW	0.020	0.5	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.48	748.7	30.08	762.8	68.9	20.5	57	SW			1		8		NE	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.66	727.9	29.98	761.6	63.5	17.5	75	N			1		10			0.409	10.4		Allnard, Director.
Commercy, Normal School	29.10	739.1	29.93	760.2	67.6	19.8	50	WNW			4		k		WNW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.80	731.5	29.94	760.5	74.5	23.6	42	NW			2		5		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.13	739.8	29.86	758.5	72.7	22.6	59	NW			2		k			0.134	3.4		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.86	758.4	30.07	763.8	64.4	18.0	74	NNE			1		8		NE	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.75	755.6	30.05	763.3	67.8	19.9	60	N			2		5		NE	0.035	0.9	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.66	738.1	29.96	761.0	61.7	16.5	89	N			1		10		S			Raining	M. Cadoret, Director
Lorient, Naval Observatory	30.00	761.9	30.10	764.5	64.0	17.8	86	NE			3		10		NE	0	0	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.34	745.3	29.94	760.4	72.7	22.6	57	N			1		1n		NW	0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.62	752.3	29.88	759.0	72.9	22.7	46	W			2		5		N	Inap.	Inap.		E. Stephan, Director.
Mirecourt, Normal School	28.93	734.7	29.94	760.5	66.4	19.1	61	SSW			1		kn		SSW	0	0		Barbier, Director.
Mont-Louis	24.84	631.0	30.08	764 0	51.8	11.0	73	W	7.4	3.3			6		W	0	0		M. Cave, for Dr. Fines.
Nice	29.86	758.5	29.90	759.4	73.0	22.8	71	SW			1		5	W	SW	0.079	2.0	Cloudy	Capt. Boissière, Director.
Nismes, Normal School	29.71	754.6	29.91	759.6	75.7	24.3	53	N			1		2		N	0	0	Slightly cl'dy	M. Boyer, Director.
Perpignan	29.89	759.2	29.99	761.8	70.0	21.1	36	NW	15.0	6.7			4	NW		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.55	572.7			36.5	2.5							10		NW	0	0	Covered	M. Baylac, for Gen'l de Nansou'y
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.95	735.4	29.97	761.3	75.2	24	39	N			3		1	N	N	0	0	Clear	M. Tallien
Puy de Dome (Summit) Ob	25.18	639.7			44.6	7.0	100	NW			3		10			0.614	15 6	Foggy	Allnard, Director.
Rochefort, Naval Obs'y	30.06	763.5	30.09	764.3	63.5	17.5	81	SW			1		10	SW	SW			Raining	Lt. E. Devante, Director
Rouen, Normal School	29.96	761.0	30.05	763.2	60.6	15.9	82	NW			1		8		NW	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	30.07	763.7	30.10	764.4	64.0	17.8	72	NNE			2		1	N	N	0	0	Lightmist	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.84	757.9	30.00	762.1	71.1	21.7	46	NNW			1		6	E	NW	0	0		E. Renou, Director.
Tarbes, Normal School	29.02	737.2	30.11	764.7	55.4	13	77	SW			1								T. Huguet, Director.
Toulouse, Observatory	29.41	747.1	30.14	765.6	64.9	18.3	57	NW			2		8			0	0	Very cloudy	B. Baillard, Dir.
Tours	29.85	758.2	30.05	763.2	66.9	19.4	77	NNW			1		10		NNW	0.795	20.2	Covered	M. de Tastes.
Versailles, Observatory	29.53	750 0	30.02	762.5	68.4	20.2	55	N			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.13	739.9	29.81	757.1	76.3	24.6	49	NW			1		2		N	0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.30	769.5	30.32	770.2	81.0	27.2										0.79	20.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.74	755.3			69.1	20.6	56	NW			1		4		NNW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.69	754.1	29.71	754.7	68.5	20.3	90	E	3.8	1.7		c	8k			0	0	Al. covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.04	737.7	29.90	759.5	69.3	20.7	74	NE			4		4k	W		0.256	6.5		Prof. Dr. Hoh.
Berlin	29.71	754.5	29.91	759.7	68.4	20.2	62	E			3		6			0.272	6.9		Prof. Dr. Arndt
Breslau	29.43	747.5	29.96	761.0	71.4	21.9	47	SSW			3		5			0.036	0.92		Royal University Obs'y
Carlsruhe	29.47	748.4	29.88	758.9	70.7	21.5	61	SW			5		5	NW		0	0		Albert Senz.
Cassel	29.24	742.7	30.11	764.8	59.4	15.2	89	SW			2		10			0.072	1.82		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.60	751.8	29.96	761.0	62.6	17.0	71	NW			1		10			0.012	0.3	Raining	Physical Society
Friedrichshafen	28.52	724.3	29.91	759.6	68.2	20.1	67	SW			2		8	W		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.78	756.4	29.85	758.2	67.1	19.5	75	ENE			4		8			0.441	11.2		Dr. Reinhold Kleeman.
Kiel	29.89	759.3	29.91	759.7	60.6	15.9	89	NE			1		10			0.396	10.04		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.97	761.3	30.05	763.3	69.8	21.0	57	E			5		6	SE		0.799	20.3		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.48	748.7	29.89	759.2	59.9	15.5	85	SW			2		10	SW		2.201	55.9	Light rain	Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.61	752.0	29.83	757.7	64.0	17.8	75	SSE			3		8ks	S		0.472	12.0		Dr. Assmann.
Memel	30.06	763.5	30.11	764.7	71.6	22.0	30	E			4–5		2k						Reinbrecht & Issermann.
Munich	28.13	714.5	29.99	761.7	68.2	20.1	46	Calm			0		9			0	0		Dr. C. Lang.
Neufahrwasser	30.05	763.3	30.07	763.7	62.6	17.0	78	ESE			3		10			0.626	15.9		A. Lothes.
Neustadt (Palatinate)	29.35	745.6	29.88	759.0	70.7	21.5	41	SW			2		6			0	0		Reallehrer Dicknether.
Posen	29.66	752.3	29.93	760.3	72.1	22.3	52	SE			2		10			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.40	746.8	29.93	760.3	70.2	21.2	58	SSW			2–3		8	SW		0	0		Imp. University Observatory.
Stuttgart	28.96	735.6	29.83	757.7	65.3	18.5	70	SW					10			0.067	1.7		Prof. Dr. Schoder.
Thorn	29.75	755.7	29.94	760.5	72.7	22.6	56	NE			2		10			0.098	2.5		Dr. Cunerth.
Weissenburg (Bavaria)	28.44	722.3	30.01	762.3	66.6	19.2	58	WNW	0.9	0.4			8kn		NW	0.024	0.6		Reallehrer J. Hopfner.
Wustrow	29.89	759.2	29.92	759.6	68.0	20.0	72	NE			4		8ks			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.50	749.2	29.87	758.6	89.8	32.1		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.37	746.0	29.42	747.2	84.1	28.9	83	SW	65.4	29.2			7		SW	0	0		D. clouds
Deesa	28.96	735.6	29.42	747.2	93.2	34.0	47	SW	31.7	14.2			0			0	0		
Bombay	29.64	752.8	29.68	753.8	86.7	30.4	75	WSW	16.0	7.2			5		SW	0	0		D. clouds
Poona (Yarrowda)	27.83	707.0	29.67	753.6	80.5	26.9	57	W	26.0	11.6			9	Calm	WNW	0	0		Gloomy
Belgaum	27.20	690.9	29.73	755.2	75.0	23.9	74	WSW	9.0	4.0			5	SW	SW	0	0		D. clouds
Lahore	28.52	724.5	29.22	742.1	107.8	41.8	21	W	4.4	2.0			0			0	0		Misty
Roorkee	28.37	720.6	29.21	742.0	103.3	39.6	26	SW	5.0	2.2						0	0		Misty
Agra	28.77	728.1	29.30	744.1	103.6	39.8	32	W	7.2	3.2			1			0	0		
Nagpur	28.51	724.2	29.53	750.0	87.7	30.9	46	Calm	7.0	3.1			10		W	1.50	38.1		Overcast
Jubbulpore	28.14	714.7	29.48	748.7	85.3	29.6	60	NW	6.2	2.8			7			0.80	20.3		Overcast
Lucknow	29.01	736.8	29.37	746.1	90.1	32.3	58	ENE	4.4	2.0			10	Calm		0	0		Overcast
Allahabad	29.04	737.5	29.33	745.1	96.7	35.9	45	NNE	4.7	2.1			8			0	0		Misty
Patna	29.20	741.6	29.38	746.2	77.7	25.4	93	WSW	1.5	0.7			10	WSW	WSW	5.17	131.3		Overcast
Hazaribagh	27.44	696.9	29.44	747.7	75.0	23.9	84	SW	12.2	5.4			10		NW	1.08	27.4		Thunder-storm
Cuttack	29.45	748.0	29.53	750.0	86.3	30.2	59	W	2.8	1.2			8			0	0		D. clouds
Calcutta (Alipore)	29.44	747.8	29.46	748.4	82.6	28.1	80	W	3.0	1.3			10	W	W	0.14	3.6		Overcast
Goalpara	29.04	737.6	29.44	747.9	77.3	25.2	98	E	11.7	5.2			10			1.18	30.0		Drizzling
Chittagong	29.47	748.6	29.56	750.9	79.7	26.5	91	SE	6.1	2.7			8			0.01	0.3		D. clouds
Sibsagar	29.20	741.8	29.54	750.2	80.1	26.7	91	NE	2.5	1.1			10	SW	SW	1.22	31.0		D. clouds

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.50	749.2	29.89	759.3	71.4	21.9	61	SW	4.3	1.9			10			0.480	12.2		Prof. Giovanni Clodig.
Milan	29.39	746.4	29.89	759.1	75.2	24.0	40	NE	2.5	1.1			10	E		0	0		Prof. Schiaparelli.
Padua	29.76	755.8	29.87	758.6	70.7	21.5	60	SE	2.5	1.1			10	SE		0.047	1.2		Prof. Dott. Lorenzoni.
Moncalieri	28.98	736.2	29.87	758.7	65.3	18.5	77	NW	1.3	0.6			8	NE		0.256	6.5		Prof. P. F. Denza.
Genoa	29.70	754.4	29.89	759.2	70.5	21.4	64	SW	4.3	1.9			10	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.04	712.1	29.90	759.5	61.2	16.2	77	SE			2		8			0.012	0.3		Prof. D. C. Bruno.
Pesaro	29.83	757.6	29.86	758.4	64.6	18.1	91	NW	5.6	2.5			10	E		0.524	13.3		Prof. Luigi Guidi.
Florence	29.61	752.2	29.87	758.6	65.3	18.5	83	N			2		10	NNW		0.138	3.5		Cav. F. Meucci.
Leghorn	29.83	757.7	29.91	759.8	69.3	20.7	73	WSW	35.3	15.8			10			0.012	0.3		Prof. P. Monte.
Rome	29.71	754.7	29.89	759.1	68.0	20.0	70	S					10			0.075	1.9		Prof. P. S. Ferrari.
Lecce	29.61	752.0	29.85	758.2	76.6	24.8	48	ESE	4.3	1.9			10	SE		0	0		Prof. C. De Giorgi.
Cosenza	28.97	735.8	29.82	757.4	82.8	28.2	65	NNW	1.8	0.8			9			0	0		Prof. D. Conti.
Cagliari	29.71	754.6	29.90	759.5	74.7	23.7	47	NW			4		8			0	0		Prof. A. Pacinotti.
Palermo	29.68	753.8	29.93	760.1	71.4	21.9	64	N	8.7	3.9			8			0.020	0.5		Prof. G. Cincciatore.
Syracuse	29.79	756.7	29.84	757.8	74.3	23.5	68	NNE	16.1	7.2			3	NNE		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.28	743.7	29.87	758.6	69.3	20.7	77	WSW	0	0			9			0.535	13.6		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					65.9	18.8	93	WNW	0.9	0.4			10n			0.396	10.06	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.39	746.5	29.59	751.6	69.2	20.7	84	SE	7.6	3.4			10s			1.660	42.2	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.88	758.9	29.95	760.7	68.5	20.3	85	S	7.8	3.3		0	0			0	0	Fair	The Staff.
Wakayama	29.77	756.1	29.82	757.4	69.6	20.9	77	S	4.8	2.1			10s			0.718	18.24	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.01	635.2	30.00	762.1	58.1	14.5	73	Calm			0		9ks			0.09	2.2	Very cloudy	Prof. L. Perez.
Guanaxuato	23.64	600.4			58.1	14.5	80	NE	3.0	1.3		2c	1k	SW	SE	0.14	3.7		Vicente Fernandez.
Leon	24.39	619.4	30.02	762.5	62.1	16.7	84	N			1	3c	2k			0.19	4.8	½ clouded	Prof. M. Leal.
Mazatlan	29.65	753.4	29.91	759.6	76.3	24.6	86	SW			3		10ks	N		0	0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	29.04	585.1	29.97	761.1	57.6	14.2	86	Calm	0	0			10kn			1.13	28.6	Threatening	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.7	29.89	759.2	61.3	16.3	77	N			2	7ks	0	NE		0.06	1.5	Cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.41	594.6	30.08	764.0	59.1	15.0	47	Calm	0	0		8k	0	E		0.28	7.0	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.15	765.9	60.8	15.7	79	SE			1		10		E	0.10	2.5	Covered	G. Barroeta, M D.
Tlacotalpam	29.87	758.8	29.89	759.1	77.0	25.0	97	S			1	1	4	SW	SE	0.73	18.5	½ clouded	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.58	573.6	30.34	770.5	52.5	11.4	95	NE			4		10n		NE	0.63	16.0	Foggy	J. C. Castrillon

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.93	760.2	29.93	760.2	55.8	13.2		WNW			4					0.063	1.6		
Groningen	29.78	756.5	29.84	757.9	64.9	18.3		E			2					0.177	4.5		
Helder	29.85	758.1	29.85	758.1	57.0	13.9		N			3					0.346	8.8		
Hellevoetsluis	29.89	759.1	29.89	759.1	54.9	12.7	94	NW			3					0.004	0.1		
Utrecht	29.82	757.3	29.86	758.5	57.9	14.4	95	WNW			1		10			0.177	4.5	Dull	H. v. d. Brink

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.13	765.3	30.19	766.7	69.4	20.8	44	W	10.3	4.6			3			0	0		
Brönö	30.16	766.0	30.20	767.0	73.4	23.0	38	S	27	12			2			0	0		
Christiania	30.09	764.3	30.23	767.9	76.8	24.9	31	ESE	7	3			3			0	0		
Tromsö	30.11	764.8	30.17	766.2	58.3	14.6	57	W	4	2			9			0	0		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.24	768.1	30.45	773.4	71.2	21.8	92	W			2		4			0	0		Dr. J. A. Sampaio.
Campo Major	28.98	736.1	29.98	761.5	77.0	25.0	34	W	3.8	1.7			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.13	765.4	30.22	767.6	68.9	20.5	62	SW	4.9	2.2			0			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.74	755.3	30.09	764.3	65.3	18.5	50	NNW	22.4	10.0			0			0	0		The Staff.
Ponta Delgada (Azores)	30.35	771.0	30.43	772.8	69.8	21.0	78	SSE	3.1	1.4			3			0	0		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Sea or swell. Height scale 0–9	Direction form—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.94	760.5	74.1	23.4		W			2		2		W	1	W		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sâdo, J. A. de Brito Capello, Mossamedes, Benguela			30.03	764.0	62.4	16.9		WSW			3		9			2	WSW		Gloomy	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes, Macao, China			29.84	758.0	86.0	30.0		SW			2		10		SW	1	SW	12	Raining	J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Archangel	30.37	771.3	30.39	771.8	57.7	14.3	45	SSE	9	4			0						Capt. Sseliwerstow.
Astrakhan	29.83	757.6	29.74	755.5	90.9	32.7	30	S	9	4			1ks						Capt. Wisganow.
Barnaul	29.21	741.8	29.69	754.1	61.7	16.5	58	S	0	0			9					Light clouds	Meteorological Obs.
Dorpat	30.12	765.0	30.35	771.0	64.4	18.0	45	ENE	9	4			0						Prof. Dr. Weihrauch.
Ekaterinburg	28.93	734.8	29.88	759.0	52.5	11.4	64	NE	7	3			10m					Light rain	Meteorological Obs.
Irkutsk																			
Kasan	29.79	756.6	30.06	763.5	54.7	12.6	40	N	13	6			2c						Physical Cabinet.
Kertch	29.76	755.9	29.78	756.4	75.2	24.0	79	NW	4	2			8					Thunder	Lagorio.
Kieff	29.13	739.9	29.76	755.6	63.9	17.7	100	N	11	5			10cks,n					Raining	Physical Cabinet.
Krotkowo*	29.61	752.2	30.08	764.0	58.1	14.5	51	N	9	4			10						Cand. Fatjanow.
Lugan	29.42	747.3	29.62	752.3	80.4	26.9	59	SE	2	1			9					Blank sky	Meteorological Obs.
Moscow	29.62	752.4	30.16	766.1	63.3	17.4	44	ENE	13	6			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.69	754.0	29.76	755.8	86.5	30.3	50	NNW	9	4			4k:ks						Kurdakof.
Nikolaievsk, on the Amoor	29.87	758.7	29.96	760.9	46.6	8.1	83	Calm	0	0			10ns						
Nukuss																			
Orenburg																			
Pekin (China)	29.47	748.5	29.61	752.1	72.7	22.6	80	Calm	0	0			1k						Physical Observatory.
St. Petersburg	30.40	772.2	30.42	772.6	61.0	16.1	42	ENE	11	5			0						Central Physical Obs.
Tashkend	28.17	715.6	29.61	752.1	93.4	34.1	28	Calm	0	0			0						Teich, A. M.
Tiflis	28.39	721.0	29.71	754.7	84.9	29.4	42	Calm	0	0			9s						Physical Observatory.
Vladivostock																			
Warsaw	29.52	749.8	29.93	760.2	69.6	20.9	74	ENE	9	4			9ks						Astronomical Obs.
Wilna	29.71	754.7	30.12	765.1	67.5	19.7	50	ENE	9	4			8					Heavy clouds	Astronomical Obs.
Yeniseisk	29.42	747.2	29.70	754.3	56.3	13.5	79	SSE	4	2			7						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.91	759.7	30.01	762.3	71.1	21.7	53	S	3.9	1.75		c	1k			0.661	16.80		Antonio Rave, Director
Bilbao, Met. Obs'y	30.12	765.0	30.17	766.4	68.0	20.0	59	NW	2.6	1.15		3	2	SW		0.012	0.3	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.17	690.0			58.1	14.5	55	N	9.2	4.03			1			0	0	Almost clear.	Domingo Martin y Perez.
Madrid, Royal Observatory	27.79	705.8	29.93	760.1	76.8	24.9	34	NE	4.5	2.00		0	8			0	0	Very cloudy	The Staff.
Murcia, Met. Obs'y	29.85	758.2	30.00	761.9	80.1	26.7	60	ESE	5.0	2.22		3	4	SE		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.22	742.3	30.11	764.8	62.8	17.1	55	NNE	12.5	5.6			6			0	0	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.98	761.5	30.05	763.2	82.3	27.9	73	ENE	3.6	1.6		0	0			0	0	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	29.80	756.9	29.85	758.2	80.6	27.0	88	SE	0.7	0.3			7kn			1.26	32.0	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.93	760.2	30.03	762.7	70.7	21.5	66	SSW	7.7	3.4		0	1		SW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.97	761.2	30.06	763.5	82.4	28.0	85	SE	9.8	4.37		5s	7kn	S	SE	0.276	7.00	Cloudy	Enriquez Iadea, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	30.35	770.9	30.39	771.9	57.6	14.2		S			2		2			0	0		
Umea	30.48	772.9	30.48	774.2	64.4	18.0	86	SW			7		1			0	0		
Hernosand	30.39	772.0	30.44	773.3	62.6	17.0	50	SSW			4		3			0	0		
Stockholm	30.22	767.5	30.39	772.0	60.4	15.8	44	E			4		0			0	0		
Wisby	30.15	765.7	30.21	767.2	63.0	17.2	50	ESE			7		0			0	0		
Sub-Series.																			
Upsala	30.27	768.8	30.35	771.0	67.6	19.8	83	ESE	10.3	4.6			0			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia					J. P. Pahlson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga					M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.51	724.2	29.89	759.2	70.9	21.6	46	N			2		7			0.035	0.9	Cloudy.	The Observatory.
Zurich	28.34	719.7	29.91	759.8	71.8	22.1	52	E			2		3			0	0	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.3 mm.; Thermometer, +0.9 Cent Relative Humidity, —10 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level, the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.87	758.7	84.9	29.4	47	N	4	2.0			0			0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.93	760.1	79.2	26.2		S			3		2			0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.79	756.6	84.0	28.9	60	W			2		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					58.0	14.4		N	8	3.6		0	0			0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	29.74	755.4	29.80	756.9	54.9	12.7	62	N	17	7.6		2k	0	N		Inap.	Inap.	Fair.	G. A. Blair.
Charlottetown, P. E. Island	29.68	753.9	29.72	754.9	44.8	7.1	98	N	18	8.0			10n			0.035	0.88	Light rain	H. J. Cundall, C. E.
Cornwall, Ontario	29.67	753.6	29.86	758.4	62.0	16.7	85	S			1	1cs	1s	E		0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.65	753.1	29.81	757.2	60.8	16.0	41	W			1	0	0			0	0	Clear.	H. A. Johnson.
Father Point, Quebec	29.90	759.4	29.92	760.0	55.6	13.1	71	NE	2	0.9		0	0			0	0	Clear.	J. McWilliams.
Fredericton, N. B.	29.78	756.4	29.84	757.9	58.0	14.4	50	NE	5	2.2		0	0			0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.32	744.7	30.13	765.3	56.3	13.5	90	SW	2	0.9		0	0			0	0	Clear.	James Stewart.
Granton, Ontario	28.71	729.2	29.79	756.7	58.0	14.4	82	NE			1		10n			0	0	Cloudy	James Grant.
Halifax, N. S.	29.59	751.6	29.72	754.9	52.8	11.6	74	NE	11	4.9			9ks			0	0	Clear	A. Allison.
Hamilton, Ontario	29.52	749.8	29.90	759.4	57.7	14.3	84	NE			2	10ks	0			0	0	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.53	750.0	29.86	758.4	63.6	17.6	71	NE	4	1.8		0	0			0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.58	751.3	29.62	752.3	42.2	5.7	91	N	14	6.3			10n			0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.71	754.6	29.90	759.4	63.0	17.2	77	NE	5	2.2		0	1ks			0	0	Clear	C. H. McLeod, C. E.
Moose Factory, Ontario	30.30	769.6	30.33	770.4	59.5	15.8	51	N			1	0	0			0	0	Clear	J. R. Nason.
Norwood, Ontario	29.16	740.7	29.82	757.4	67.5	19.7	66	NE	5	2.2		2c	0	NE		0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.22	742.2	29.89	759.2	63.5	17.5	70	N	14	6.3		0	0			0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.14	740.1	29.86	758.4	69.7	20.9	61	W			1	2k	0			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.14	740.1	29.81	757.2	58.1	14.5	94	NE	6	2.7			8n			0.01	0.3	Threatening	H. Morgan.
Port Stanley, Ontario	29.15	740.4	29.79	756.7	55.1	12.8	92	E	7	3.1			10n			0.03	0.8	Light rain	M. Payne.
Quebec, Quebec	29.63	752.6	29.95	760.7	59.0	15.0	76	E			1	0	Haze			0	0	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.47	748.5	29.92	760.0	58.5	14.7	77	Calm	0	0		2ck	0	SE		0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.64	752.8	29.80	756.9	57.0	13.9	63	N	15	6.7		8k	0			0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.16	740.7	29.85	758.2	64.2	17.9	66	E	11	4.9		1ck	0			0	0	Clear.	K. Stewart.
Stratford, Ontario	28.56	725.4	29.81	757.2	57.9	14.4	76	E	5	2.2			10s			0	0	Cloudy	G. J. MacGregor, M. A.
Sydney, C. B.	29.49	749.0	29.53	750.0	45.0	7.2	84	N	19	8.5			10n			0.03	0.8	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.49	749.0	29.86	758.4	59.6	15.8	75	NE	7	3.1			10ks			0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.78	731.0	29.83	757.7	57.4	14.1	74	NE	17	7.6			10s			0	0	Cloudy	Professor Wolverton.
Yarmouth, N. S.	29.72	754.9	29.79	756.7	56.1	13.4	70	N	3	1.3		0	3ks			0	0	Fair	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.08	738.6	29.33	745.0	43	6.1	100	E	10	4.5			10n			0.90	22.9	Rain & snow	John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.33	745.0	43.9	6.6		N			4					0.40	10.2		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of R. C. DRUM, Adjutant General, and Acting Chief Signal Officer, U. S. Army.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.80	756.9	29.87	758.7	69	20.6	56	NE	3	1.3		5c	0	W		0	0	Fair	
Alpena, Michigan	29.28	743.7	29.91	759.7	58	14.4	70	NE	15	6.7		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.74	730.0	29.80	756.9	84	28.9	64	W	11	4.9		0	0			0	0	Clear	
Atlantic City, New Jersey	29.81	757.2	29.83	757.7	62	16.7	94	E	7	3.1			10n		E	0.34	8.6	Light rain	
Augusta, Georgia	29.69	754.1	29.88	758.9	86	30.0	61	SW			2	0	Haze		Calm	0	0	Clear	
Baltimore, Maryland	29.73	755.1	29.78	756.4	64	17.8	83	E	10	4.5			10s		SE	1.03	26.2	Cloudy	
Barnegat, New Jersey	29.79	756.7	29.81	757.2	62	16.7	94	S	6	2.7			10n		E	0.22	5.6	Light rain	
Bismarck, Dakota	28.32	719.3	30.18	766.6	54	12.2	93	SE	6	2.7			10s		Calm	0.01	0.3	Cloudy	
Boerne, Texas	28.54	724.9	29.80	756.9	73	22.8	95	S	4	1.8		5k	0	SW		0	0	Fair	
Boise City, Idaho	27.33	694.2	30.29	769.4	47	8.3	55	NW	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.64	752.8	29.79	756.7	68	20.0	65	S	1	0.4		2ck	5s	SW	SW	0	0	Fair	
Brackettville, Texas	28.80	731.5	29.82	757.4	74	23.3	90	E	11	4.9			10s		S	0	0	Cloudy	
Breckenridge, Minnesota	29.13	739.9	30.11	764.8	58	14.4	76	E	6	2.7		0	0			0.24	6.1	Clear	
Brownsville, Texas	29.92	760.0	29.96	761.0	81	27.2	78	E	2	0.9		2c	0	Calm		0	0	Clear	
Buffalo, New York	29.11	739.4	29.78	756.4	58	14.4	76	NE	11	4.9			10s		Calm	0	0	Cloudy	
Burkes, Arizona					61	16.1	40	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.63	752.6	29.91	759.7	62	16.7	77	W	3	1.3		5cs	0	W		0	0	Fair	
Cairo, Illinois	29.51	749.5	29.88	758.9	78	25.6	61	N	14	6.3		0	5ks		N	0	0	Fair	
Campo, California	27.37	695.2	29.94	760.5	36	2.2	80	S	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.67	753.6	29.68	753.9	79	26.1	91	S	20	8.9		5cs	2s	NW	SE	0.01	0.3	Cloudy	
Cape Henry, Virginia	29.64	752.8	29.66	753.4	73	22.8	95	S	3	1.3			10n		S	0.31	7.9	Light rain	
Cape Lookout, N. Carolina	29.68	753.9	29.70	754.4	81	27.2	91	SW	16	7.2		10c	Haze	W	Calm	0	0	Cloudy	
Cape May, New Jersey	29.76	755.9	29.79	756.7	64	17.8	83	SE	18	8.0			10n		S	0.95	24.1	Light rain	
Castroville, Texas	29.20	741.7	29.88	758.9	78	25.6	78	SE	4	1.8			10s		S	0.03	0.8	Cloudy	
Cedar Keys, Florida	29.99	761.7	30.01	762.2	84	28.9	75	W	16	7.2		0	5ks		NW	0	0	Fair	
Charleston, South Carolina	29.78	756.4	29.83	757.7	86	30.0	61	W	8	3.6		0	0			0.02	0.5	Clear	
Charlotte, North Carolina	28.91	734.3	29.66	753.4	79	26.1	70	SW	6	2.7		5cs	0	Calm		0.10	2.5	Fair	
Chattanooga, Tennessee	29.05	737.9	29.80	756.9	81	27.2	74	SW	8	3.6		8k	2ks	NW	W	0	0	Cloudy	
Cheyenne, Wyoming	24.13	612.9	30.07	763.8	50	10.0	65	W	4	1.8		0	0			0	0	Clear	
Chicago, Illinois	29.17	740.9	29.85	758.2	53	11.7	93	N	12	5.4			10s		Calm	1.17	29.7	Cloudy	
Chincoteague, Virginia	29.69	754.1	29.71	754.6	62	16.7	96	NE	32	14.3			10ks		NE	1.03	26.2	Cloudy	
Cincinnati, Ohio	29.05	737.9	29.66	753.4	74	23.3	86	W	10	4.5		0	5ks		W	3.12	79.2	Fair	
Cleveland, Ohio	29.01	736.8	29.71	754.6	59	15.0	88	NE	12	5.4			10s		E	0.60	15.2	Cloudy	
Coleman City, Texas	28.17	715.5	29.76	755.9	75	23.9	77	S	6	2.7		0	0			0	0	Clear	
Columbus, Ohio	28.82	732.0	29.61	752.1	66	18.9	89	N	6	2.7			10s		E	1.19	30.2	Cloudy	
Concho, Texas	28.08	713.2	29.67	753.6	77	25.0	72	S	8	3.6		2c	0	N		0	0	Fair	
Corsicana, Texas	29.52	749.8	29.97	761.2	78	25.6	86	S	8	3.6		0	0			0	0	Clear	
Davenport, Iowa	29.32	744.7	29.94	760.5	56	13.3	81	N	9	4.0			10s		N	0.73	18.5	Cloudy	
Dayton, Washington T'y					40	4.4	72	N			1	0	0			0	0	Clear	
Deadwood, Dakota	25.37	644.4			66	18.9	36	SW	12	5.4		0	0			0	0	Clear	
Decatur, Texas	28.79	731.3	29.90	759.4	78	25.6	91	SW	9	4.0		2k	8s	Calm	Calm	0	0	Cloudy	
Delaware Breakwater, Del.	29.78	756.4	29.80	756.9	60	15.6	100	SE	25	11.2			10n		SE	0.59	15.0	Heavy rain	
Denison, Texas	29.18	741.1	29.93	760.2	78	25.6	91	SW	6	2.7			10n		SW	0	0	Threatening	
Denver, Colorado	24.86	631.4	30.08	764.0	56	13.3	35	W	3	1.3		0	0			0	0	Clear	
Des Moines, Iowa	29.17	740.9	30.04	763.0	55	12.8	81	NE	6	2.7			10s		SW	Inap.	Inap.	Cloudy	
Detroit, Michigan	29.10	739.1	29.75	755.6	56	13.3	94	NE	10	4.5			10s		NE	0.47	11.9	Cloudy	
Dodge City, Kansas	27.48	698.0	29.71	754.6	60	15.6	77	NE	12	5.4		0	0			0	0	Clear	
Dubuque, Iowa	29.29	744.0	29.98	761.5	55	12.8	81	N	10	4.5		5ck	1s	NW	Calm	0.79	20.1	Fair	
Duluth, Minnesota	29.47	748.5	30.15	765.8	53	11.7	86	NE	1	0.4		2cs	0	Calm		0	0	Clear	
Eagle Pass, Texas	29.13	739.9	29.83	757.7	80	26.7	70	SE	4	1.8		0	0			0	0	Clear	
Eastport, Maine	29.75	755.6	29.82	757.4	57	13.9	63	N	10	4.5		0	0			0	0	Clear	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.05	737.9	29.73	755.1	64	17.8	73	NE	6	2.7			10n		Calm	0.08	2.0	Light rain	
Escanaba, Michigan	29.38	746.2	30.02	762.5	56	13.3	62	N	18	8.0		2cs	0	N		0	0	Clear	
Florence, Arizona					65	18.3	54	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.08	637.0	30.52	775.2	47	8.3	55	E	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.99	710.9	29.78	756.4	58	14.4	81	S	12	5.4		8cs	0	W		0	0	Cloudy	
Fort Custer, Montana	26.92	683.6			55	12.8	73	NW	8	3.6			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.24	641.1	30.20	767.1	72	22.2	58	SW	1	0.4		1ck	0	Calm		0	0	Clear	
Fort Elliot, Texas	26.96	681.8	29.08	738.6	65	18.3	63	N	8	3.6		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.41	747.0	29.92	760.0	77	25.0	82	N	2	0.9		0	0			0.04	1.0	Clear	
Fort Grant, Arizona	25.25	641.3	30.05	763.3	64	17.8	17	W	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.70	729.0	29.90	759.4	79	26.1	74	S	6	2.7		8k	0	S		0	0	Cloudy	
Fort Keogh, Montana	27.22	691.4			63	17.2	73	E	10	4.5		0	5ks		Calm	0	0	Fair	
Fort McKavett, Texas	27.74	704.6	29.57	751.1	74	23.3	76	S	6	2.7		1c	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.74	730.0	29.79	756.7	75	23.9	86	N	5	2.2		2ck	5s	Calm	Calm	0.06	1.5	Cloudy	
Fort Stevenson, Dakota	28.21	716.5			57	13.9	87	SE	10	4.5		0	0			0	0	Clear	
Fort Verde, Arizona					55	12.8	45	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.96	761.0	30.00	762.0	82	27.8	75	S	6	2.7		0	0			0	0	Clear	
Grand Haven, Michigan	29.23	742.4	29.87	758.7	53	11.7	86	NE	8	3.6			10s		Calm	0.55	14.0	Cloudy	
Helena, Montana					47	8.3	55	SW	6	2.7		8ck	0	Calm		0	0	Cloudy	
Henrietta, Texas																			
Indianapolis, Indiana	28.94	735.1	29.68	753.9	67	19.4	89	NW	6	2.7			10s		NW	2.08	52.8	Cloudy	
Indianola, Texas	29.98	761.5	30.01	762.2	80	26.7	78	S	4	1.8		0	0			0	0	Clear	
Jacksboro, Texas	28.81	732.0	29.90	759.4	79	26.1	78	S	8	3.6		5k	0	Calm		0	0	Fair	
Jacksonville, Florida	29.95	760.2	29.95	760.7	87	30.6	65	SW	10	4.5		0	0			0	0	Clear	
Keokuk, Iowa	29.30	744.2	29.90	759.4	58	14.4	88	N	11	4.9			10s		N	0.25	6.3	Cloudy	
Key West, Florida	30.03	762.7	30.06	763.5	84	28.9	71	W	1	0.4		2k	0	Calm		0	0	Fair	
Kittyhawk, North Carolina	29.65	753.1	29.67	753.6	80	26.7	91	SW	16	7.2		10cs	0	Calm		0.21	5.3	Cloudy	
Knoxville, Tennessee	28.83	732.3	29.77	756.1	78.5	25.8	74	W	16	7.2			10ks		W	Inap.	Inap.	Threatening	
La Crosse, Wisconsin	29.29	744.0	30.02	762.5	54	12.2	80	N	12	5.4		0	0			1.08	27.4	Clear	
La Mesilla, New Mexico	26.10	662.9	30.25	768.3	55	12.8	45	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.56	749.3	29.82	757.4	80	26.7	78	SE	4	1.8		0	0			0	0	Clear	
Leavenworth, Kansas	29.18	741.1	30.01	762.2	58	14.4	70	N	15	6.7		9k	0	N		0	0	Cloudy	
Lewiston, Idaho	29.45	748.0	30.11	764.8	46	7.8	77	Calm	0	0		0	0			0.02	0.5	Clear	
Little Rock, Arkansas	29.60	751.8	29.90	759.4	80	26.7	82	SW	4	1.8		2k	0	W		0	0	Clear	
Los Angeles, California	29.61	752.1	29.94	760.5	57	13.9	94	SE	3	1.3			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.16	740.7	29.68	753.9	78	25.6	73	W	14	6.3		2k	0	W		0.34	8.6	Clear	
Lynchburg, Virginia	28.99	736.3	29.63	752.6	71	21.7	85	NE	2	0.9			10n		NW	0.37	9.4	Light rain	
Madison, Wisconsin	28.96	735.6	29.94	760.5	53	11.7	86	N	13	5.8		5cs	5s	N	N	3.62	91.9	Clearing	
Marquette, Michigan	29.39	746.5	30.10	764.5	52	11.1	66	NW	6	2.7		8k	0	NW		0	0	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Upper. 0—10.	Lower. 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.35	720.1	30.03	762.7	77	25.0	82	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.52	749.8	29.84	757.9	80	26.7	82	W	4	1.8	.....	0	5s	.....	W	0	0	Fair	
Milwaukee, Wisconsin	29.20	741.7	29.92	760.0	49	9.4	93	N	16	7.2	.....	.....	10s	.....	N	1.59	40.4	Cloudy	
Mobile, Alabama	29.98	761.5	30.02	762.5	80	26.7	78	NW	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	29.73	755.1	29.96	761.0	83	28.3	74	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	28.66	728.0	29.59	751.6	65	18.3	89	S	6	2.7	.....	.....	10n	.....	Calm	2.19	55.6	Light rain	
Mt Washington, N. H.	23.75	603.2	30.11	764.8	38	3.3	64	NE	11	4.9	.....	2c	2ks	NW	NW	0	0	Clear	
Nashville, Tennessee	29.29	744 0	29.79	756.7	83	28.3	71	W	9	4.0	.....	0	8ks	.....	W	0	0	Fair	
New Haven, Connecticut	29.73	755.1	29.84	757.9	61	16.1	82	NE	9	4.0	.....	.....	10s	.....	NE	0	0	Cloudy	
New London, Connecticut	29.83	757.7	29.88	758.9	62	16.7	83	NE	4	1.8	.....	.....	10s	.....	Calm	0	0	Cloudy	
New Orleans, Louisiana	29.98	761.5	30.04	763.0	79	26.1	78	W	6	2.7	.....	0	2ks	.....	W	0	0	Fair	
Newport, Rhode Island	29.83	757.7	29.88	758.9	65	18.3	68	E	4	1.8	.....	5k	2s	NW	Calm	0	0	Fair	
New River, North Carolina	.....	.....	.....	.....	83	28.3	70	W	.....	.....	1	10cs	0	NW	.....	.....	.....	Cloudy	
New York, New York	29.63	752.6	29.80	756.9	63	17.2	78	E	14	6.3	.....	.....	10n	.....	Calm	Inap.	Inap.	Light rain	
Norfolk, Virginia	29.61	752.1	29.67	753.6	75	23.9	81	NW	4	1.8	.....	.....	10s	.....	W	0.02	0.5	Cloudy	
North Platte, Nebraska	27.22	691.4	29.77	756.1	54	12.2	97	E	13	5.8	.....	.....	Fog	.....	Calm	0	0	Foggy	
Olympia, Washington Ter.	30.20	767.1	30.24	768.1	39.0	3.9	86	S	2	0.9	.....	0	2s	.....	Calm	0	0	Fair	
Omaha, Nebraska	28.94	735.1	30.02	762.5	57	13.9	84	N	8	3.6	.....	.....	10s	.....	N	0.01	0.3	Cloudy	
Oswego, New York	29.56	750.8	29.87	758.7	62	16.7	72	E	3	1.3	.....	2cs	8s	E	E	0	0	Cloudy	
Pembina, Dakota	29.28	743.7	30.09	764.3	55	12.8	87	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Pensacola, Florida	29.99	761.7	30.02	762.5	83	28.3	67	NW	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	29.77	756.1	29.82	757.4	61	16.1	94	S	6	2.7	.....	.....	10s	.....	SE	0.25	6.3	Cloudy	
Phœnix, Arizona	28.74	730.0	30.45	773.4	79	26.1	27	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.98	456.7	30.19	766.8	33	0.6	32	SW	34	14.3	.....	0	0	.....	.....	0	0	Clear	
Pilot Point, Texas	29.20	741.7	30.01	762.2	77	25.0	91	S	1	0.4	.....	.....	10ks	.....	S	0	0	Threatening	
Ploche, Nevada	24.08	611.6	29.85	758.2	53	11.7	25	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	28.85	732.8	29.61	752.1	63	17.2	83	E	7	3.1	.....	.....	10s	.....	E	0.59	15.0	Cloudy	
Port Huron, Michigan	29.14	740.1	29.79	756.7	54	12.2	93	N	12	5.4	.....	.....	10s	.....	N	0.10	2.5	Cloudy	
Portland, Maine	29.84	757.9	29.89	759.2	62	16.7	61	N	7	3.1	.....	2cs	0	NW	.....	0	0	Clear	
Portland, Oregon	30.16	766.1	30.24	768.1	42.5	5.8	91	NW	2	0.9	.....	1cs	Fog	W	S	0.01	0.3	Foggy	
Portsmouth, North Carolina	.....	.....	.....	.....	89	31.7	63	SW	17	7.6	.....	8cs	Haze	Calm	Calm	0	0	Light haze	
Prescott, Arizona	24.80	629.9	30.16	766.1	46	7.8	47	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.04	763.0	86	30.0	65	W	9	4.0	.....	5k	0	W	.....	0	0	Fair	
Red Bluff, California	29.61	752.1	29.96	761.0	61.0	16.1	40	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	.....	.....	.....	.....	77	25.0	95	SE	.....	.....	4	8k	0	SE	.....	0	0	Fair	
Rochester, New York	29.22	742.2	29.82	757.4	58	14.4	70	SW	8	3.6	.....	5cs	5s	NW	Calm	0	0	Cloudy	
Roseburg, Oregon	29.63	752.6	30.22	767.6	38.5	3.6	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.86	758 4	29.93	760.2	56	13.3	81	SE	3	1.3	.....	5c	0	W	.....	0	0	Fair	
St. Louis, Missouri	29.32	744.7	29.88	758 9	63	17.2	83	NW	14	6.3	.....	.....	10ks	.....	NW	0.06	1.5	Cloudy	
St. Paul, Minnesota	29.25	742.9	30.08	764.0	52	11.1	79	N	4	1.8	.....	2c	0	N	.....	0.74	18.8	Clear	
Salt Lake City, Utah	26.72	653.3	30.05	763.3	57	13.9	36	NE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.30	744.2	29.97	761.2	78	25.6	82	SE	1	0.4	.....	0	5s	.....	S	0.02	0.5	Fair	
San Diego, California	29.90	759.4	29.98	761.5	59	15.0	88	NW	3	1.3	.....	.....	10s	.....	Calm	0	0	Cloudy	
Sandusky, Ohio	29.05	737.9	29.70	754.4	60	15.6	88	NE	35	15.6	.....	.....	10ks	.....	NE	1.44	36.6	Threatening	
Sandy Hook, New Jersey	29.77	756.1	29.80	756.9	65	18.3	84	SE	21	9.4	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
San Francisco, California	29.92	760.0	29.98	761.5	55	12.8	81	SW	3	1.3	.....	8c	0	SW	.....	0	0	Fair	
Santa Fé, New Mexico	23.37	593.6	29.91	759.7	60	15.6	29	E	2	0.9	.....	0	Haze	.....	Calm	0	0	Clear	
Savannah, Georgia	29.80	756.9	29.89	759.2	92	33.3	54	W	10	4.5	.....	1cs	0	Calm	.....	0	0	Clear	
Shreveport, Louisiana	29.77	756.1	29.98	761.5	80	26.7	82	SW	4	1.8	.....	0	5s	.....	Calm	0	0	Fair	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	29.76	755.9	29.79	756.7	84	28.9	68	SW	8	3.6	.....	hz; 5k	Haze	Calm	Calm	0	0	Hazy	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.22	742.2	29.87	758.7	59	15.0	82	N	12	5.4	.....	.....	10s	.....	NW	0.02	0.5	Cloudy	
Springfield, Massachusetts	29.75	755.6	29.88	758.9	66	18.9	69	N	3	1.3	.....	0	5ks	.....	W	0	0	Fair	
Stockton, Texas	26.93	684.0	29.93	760.2	76	24.4	73	S	5	2.2	.....	2cs	0	Calm	.....	0	0	Fair	
Thatcher's Island, Mass	29.83	757.7	29.88	758.9	60	15.6	88	NE	10	4.5	.....	2c	2ks	N	NE	0	0	Fair	
Toledo, Ohio	29.09	738.9	29.75	755.6	58	14.4	94	NE	18	8.0	.....	.....	10n	.....	NE	0.25	6.3	Light rain	
Tucson, Arizona	27.47	697.7	30.02	762.5	73	22.8	28	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.91	759.7	30.41	772.4	47	8.3	66	NW	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	29.07	738.4	29.85	758.2	79	26.1	74	S	4	1.8	.....	.....	10s	.....	S	0	0	Cloudy	
Vicksburg, Mississippi	29.76	755.9	30.01	762.2	82	27.8	75	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.45	621.0	29.93	760.2	35	1.7	90	NW	4	1.8	.....	.....	10ks	.....	SW	1.32	33.5	Cloudy	
Visalia, California	29.52	749.8	29.89	759.2	57.5	14.2	69	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.64	752.8	29.75	755.6	63	17.2	100	E	8	3.6	.....	.....	10n	.....	E	2.07	52.6	Light rain	
Wickenburg, Arizona	.....	.....	.....	.....	69	20 6	23	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	29.67	753.6	29.75	755 6	85	29.4	61	W	10	4.5	.....	8c	0	Calm	.....	0	0	Fair	
Winnemucca, Nevada	26.77	654.6	30.14	765.3	39	3.9	64	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	29.84	757.9	29.88	758.9	63	17.2	72	Calm	0	0	.....	.....	10s	.....	SW	0	0	Cloudy	
Yankton, Dakota	28.86	733.0	30.15	765.8	54	12.2	87	N	2	0.9	.....	.....	10s	.....	Calm	0.03	0.8	Cloudy	
Yuma, Arizona	29.65	753.1	29.79	756.7	69	20.6	56	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0	.....	.....	54.5	12.5	77	Calm	0	0	.....	5k	2ks	.....	.....	0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.03	762.7	30.06	764.0	83	28.3	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.00	762.0	30.01	762.2	80	26.7	79	Calm	0	0	.....	2c	2cs	.....	Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	83	28.3	71	N	4	1.8	.....	2k	5cs	NE	N	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	79	26.1	87	E	.....	.....	3	4c	5k	E	.....	0.100	2.54	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.43	747.5	29.99	761.7	76	24.4	94	N	.....	.....	1	.....	10ks	.....	.....	0.31	7.9	.....	Francesco J. Cisneros.
§ Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	ENE	.....	.....	.....	6k	2k	SW	ENE	0.08	2.	Slightly cov.	Earl Flint.
Santiago de Cuba, W. I.	30.00	762.0	30.02	762.5	82	27.8	70	NNE	2.4	1.1	.....	0	2s	.....	N	0	0	.....	Robert Mason
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	30.00	762.0	30.05	763.3	49.0	9.4	89	S	7	3.1	.....	2c	1s	SW	SW	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Ploche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm., Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Ploche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.01	762.2	81	27.2	74	SW	10	4.5			0							Clear	
§Navy Yard, Portsmouth, N. H.	29.89	759.2	62	16.7	83	Calm	0	0			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.95	760.7	69	20.6	85	Calm			0	2c	Haze		W	0	0			Fair	
§Adams, Payta, Peru	30.00	762.0	67	19.4	89	SE			1		10		SE					Cloudy	
§Alaska, Callao, Peru*	29.97	761.2	63	17.2	89	NNW			2		10					Long	SW	Misty	
§Alert, Yokohama, Japan	29.85	758.2	73	22.8	72	S			2		2		Calm	0	0	Smooth		Clear	
§Alliance, St. Pierre, Newfoundland	29.34	745.2	44	6.7	92	NNE			1-4		10		Calm	Mod	erate	Smooth	E	Drizzling	
§Ashuelot, Han Kow, China, N. 31°, E. 114°	29.68	753.9	78	25.6	73	SE			1		5					None		Pleasant	
§Colorado, New York, N. Y.	29.78	756.4	65	18.3	73	NE	7	3.1			10							Light rain	
§Constitution, Off Robins I'd Reef Lt., N. Y. Harbor	29.80	756.9	64	17.8	78	E	8	3.6			10		E					Rainy	
§Franklin, Off Navy Yard, Norfolk, Va	29.64	752.8	75	23.9	90	WNW	4.8	2.1			10		W	0.3	8.			Cloudy	
§Independence, Mare I'd, Navy Yard, Cal.	29.96	761.0	55	12.8	??	SW	3.6	1.6			1		SW	0	0			Clear	
§Jamestown, Sitka, Alaska*	29.71	754.6	51	10.6	66	E			5		10					Smooth		Cloudy	
§Kearsarge, Boston, Mass	29.86	758.4	64	17.8	78	Calm					5		NW					Fair	
§Lackawana, Amapata, Honduras†	30.03	762.7	77	25.0	91	NW			2		5?		NW					Cloudy ?	
§Marion, Port Stanley, Falkland I'ds	29.60	751.8	39	3.9	100	WSW			2		10			Blank	Blank	Smooth		Clear	
§Michigan, Erie, Pa.	29.61	752.1	59	15.0	94	E			2		10		E					Raining	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	29.83	757.7	64	17.8	94	ESE			1		10		ESE					Cloudy	
§Monocacy, Chefoo, China	29.64	752.8	66	18.9	94	ENE			1		8		SE					Cloudy	
§New Hampshire, Port Royal, S. C.	29.79	756.7	83	28.3	67	W	14	6.3			2		Calm	0	0			Fair	
§Onward, Chimbote, Peru†	29.98	761.5	65	18.3	89	S			1		10		NNW			Long	W	Cloudy	
§Palos, Shanghai, China	29.72	754.9	72	22.2	85	E			1		2		E					Clear	
§Passaic, Washington, D. C.	29.78	756.4	67	19.4	89	NE			5		10		NE	0.92	23.4			Rainy	
§Portsmouth, Fayal, Azore Islands	30.40	772.1	71	21.7	95	S			3		2		SW			Smooth		Clear	
§Powhatan, New York, N. Y.	29.83	757.7	65	18.3	84	ENE			3		10		NE					Overcast	
§Quinnebaug, Scheldt River, Netherlands	29.90	759.4	56	13.3	94	NW			5		10		NW					Rainy	
§Richmond, Nagasaki, Japan	29.58	751.3	69	20.6	??	N			2		10		N	0.9	23.			Cloudy	
Rio Bravo, Brownsville, Texas†	30.13	765.3	76	24.4	100	SE	2	0.9			2		SE	0	0			Fair	
§Saratoga, Gibraltar, Mediterranean	30.02	762.5	71	21.7	75	NNE			1		2		Calm	0	0			Fair	
§Shenandoah, Buenos Ayres, Argentine Republic	30.09	764.3	48	8.9	85	SW			3		1		Calm			Smooth		Clear	
§St. Louis, League Island, Pa.	29.82	757.4	62	16.7	94	E	8	3.6			10		E	0.25	6.3			Raining	
Swatara, N. 19° 45', E. 114° 14'†	29.72	754.9	84	28.9	79	Calm			0		10		Calm			Mod'ate	SW	Cloudy	
§Tennessee, New York, N. Y.	29.86	758.4	66	18.9	74	NNE			2		10		NNE	0.1	3.	Smooth		Drizzling	
§Ticonderoga, Nagasaki, Japan	29.62	752.3	70	21.1	100	WSW			1		10		SSW			Smooth		Cloudy	
§Trenton, N. 37° 41', W. 0° 28'	30.07	763.8	76	24.4	56	SSE			2		0			0	0	None		Clear	
§Vandalia, New Bedford, Mass.	29.91	759.7	62	16.7	88	Calm			0		9		Calm					Cloudy	
§Wabash, Boston, Mass.	29.87	755.7	68	20.0	70	Calm	0	0			8			0	0			Cloudy	
§Wachusett, S. 36° 39', W. 78° 25'	30.09	764.3	60	15.6	100	NW			4		2		W			Mod'ate	N	Fair	
Wyoming, Villafranca, France	29.88	758.9	70	21.1	66	S			1-2		2		S			Smooth	S	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 52° 04', W. 23° 39'	30.26	768.8	57	13.9		SSE			4		10		SSE			Smooth	SSE	Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent, Liverpool, Eng	30.20	767.1	62	16.7	72	WNW			4		1		W	0	0			Clear	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 43° 09', W. 39° 49' *†	29.77	756.1	70	21.1	95	S			5		10		S	6 h'rs	6 h'rs	Heavy	SW	Raining	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
S. S. Newbern, W. Metzger. N. 27° 16', W. 111° 00' †	29.67	753.6	80	26.7	95	S			3		5		S			Gentle	WNW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			
S. S. Strassburg, O. Holmbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 41° 27', W. 166° 09' †	30.09	764.3	53	11.7	86	N			5		10		N			Light		Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 32° 59', E. 134° 13' †	29.79	756.7	70	21.1	90	SSE			5		10n		SW	Heavy	Heavy	Rough	SSW	Raining	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon †	30.23	767.8	43	6.1	83	NW			2		2s		Calm			Smooth		Clear	J. M. Lachlan.
S. S. Oregon																			
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander N. 33° 03', W. 117° 38' †	30.02	762.5	60	15.6		ESE			1		0					Heavy	NW	Clear	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba																			
§ S. S. State of California, G. Dabney, San Francisco, Cal †	29.93	760.2	48	8.9		NW			2		8		SW					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
S. S. Alaska, D. S. Austin, Acajutla, San Salvador...†	29.58	758.9	76	24.4	86	NE			2		5		NE			Mod'ate	SSW	Fair	F. A. Johnston.
§ S. S. Australia																			Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.01	762.2	60	15.6	94	SSW			2		0							Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N 13° 28' W. 96° 25'...†	29.93	760.2	77	25.0	86	N			3		2		E	3.	76.	Mod'ate	SW	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.97	761.2	69	20.6	90	S			2		8		SSE	0	0			Hazy	
§ S. S. City of Sidney, H. C. Dearborn, N. 34° 42', W. 13°° 01'...*†	30.16	766.1	57	13.9		NE			5		8		NE	0	0	Mod'ate	NNE	Blue sky	E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, Acapulco, Mexico.....†	29.95	760.7	84	28.9	100	SE			2		10		Calm	0.30	7.6			Cloudy	
§ S. S. Dakota, D. E. Griffiths.																			D. E. Griffiths.
§ S. S. Granada, J. M. Cavarly N. 36° 44'. W 122° 28'....†	29.96	761.0	51	10.6	93	WNW			4		0			0	0	Heavy	WNW	Light fog	
§ S. S. Idaho, E. Alexander, Victoria, Vancouver I'd ...†	30.14	765.5	59	15.0		Calm			0		0							Clear	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, N. 19 39, W. 158 37	29.90	759.4	75	23.9		E			4		5		E			Mod'ate	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 48° 00', W. 14° 18 ...†	30.34	71.1	57	13.9		N			2		8		N	0	0			Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings. N. 40° 00', W. 38° 42'.....†	29.60	751.8	63	17.2	94	SW			6		Mist			0	0	Rough	SW	Overcast	H. N. Goulden.
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla .....†	29.94	760.5	85	29.4		SW			1		1		SW	0	0			Fine	A. R. Mehaffey.
Schr. Adnie Fuller, J. Jorgensen, Boston, Mass	29.76	755.9	68	20.0	70	Calm	0	0			0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N 24° 26', W 69° 27'.....†	30.09	764.3	84	28.9		SSE			3		2		SSE	0	0	Mod'ate	SE	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 2° 35', W. 25° 20'.....*†	30.06	763.5	78	25.6		SSE			1		2		SSE			Smooth	SSE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, Forteau, Labrador.....†	29.71	754.6				NE			8		5							Threatening	S. S. Miner.
Brigantine George, W. H. Champlin.																			
Iron Cross, W. Randall, N. 26° 08', W. 54° 56'....*	30.08	764.0	82	27.8	83	W			1-2		6		N;W	0	0	Mod'a'	S	D. clouds	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29 75	755 6	52	11.1	79	NE			4		5		NE	0	0	Smooth		Fair	James S. Garvin.

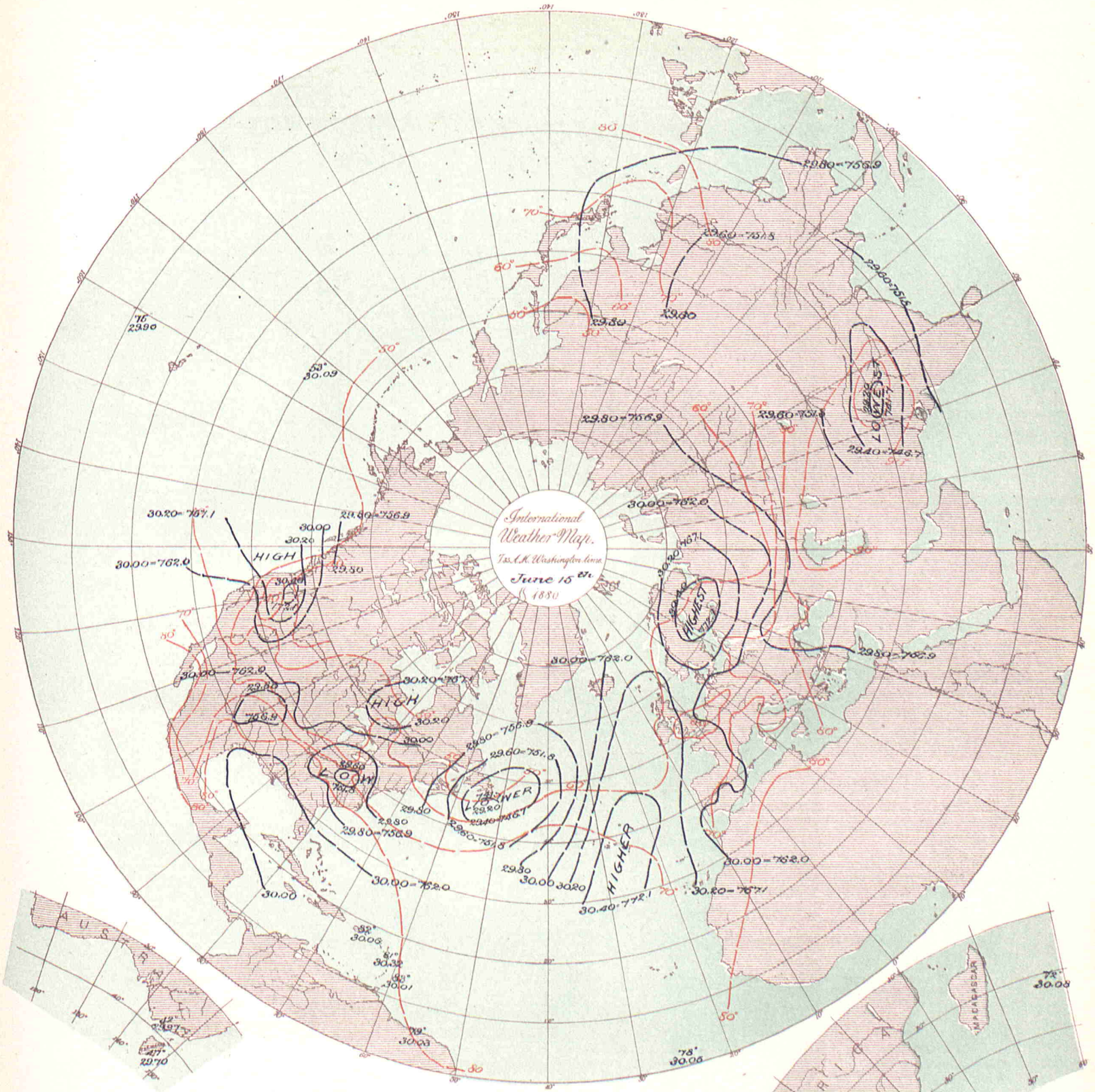
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Adjutant General, and
Acting Chief Signal Officer of the Army.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 16, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:58 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			29.99	761.8	77.0	25.0	69	N			1		4			0	0	Cloudy	Metge.
Algiers			29.95	760.8	71.6	22.0	82	W			3		8			Inap.	Inap.	Very cloudy	Nicolas.
La Calle			29.97	761.3	70.7	21.5	91	ENE			5		5			0	0	Cloudy	Fonfrède.
Tunis			30.02	762.4															Jacques.
Sfax			30.15	765.8															Gau.
Saida			29.98	761.6															Charon.
Tebessa			30.02	762.5	86.4	30.2	19	WSW			4		3			0	0	Pretty fair.	Watrin.
Geriville			30.03	762.8	81.5	27.5	31	N			6		0			0	0	Clear	Lonchamp.
Laghouat			30.00	762.0	94.3	34.6	14	S			5		5			Inap.	Inap.	Cloudy	Herlin.
Biskra			30.03	762.7	88.2	31.2	38	SE			4		0			Inap.	Inap.	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.31	744.5	29.84	758.0	68.5	20.3	71	NE			4		10			0.248	6.3		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.26	743.1	30.00	762.1	67.3	19.6	65	ENE	14.3	6.4			10			0	0		Dr. Wierzbicki.
Eperies	29.03	737.3	29.88	758.9	67.8	19.7	64	N			4		10k		S	0	0		Julius Mikolik.
Gratz	28.67	728.3	29.90	759.5	63.0	17.2	83	S			2		10			0.768	19.5		Andreas Rospini.
Hermannstadt	28.38	720.8	29.72	755.0	77.2	25.1	56	S			1		5			0.697	17.70	Thunder storm.	Prof. A. Gottschling.
Kremsmünster, Observatory	28.58	726.0	29.87	758.8	69.4	20.8	78	WSW			1		10			0.244	6.2		The Staff.
Lemberg	28.97	735.9	29.93	760.2	66.0	18.9	65	W			3		9			0.177	4.5		Dr. T. Stanecki.
Pola	29.78	756.3	29.88	759.0	71.6	22.0	72	WNW			2		8			0	0		I.R. Hydrographic Office.
Szathmar	29.39	746.4	29.83	757.7	73.8	23.2	73	SW			3		10			0.335	8.5		Pet. Pancsics, S. J.
Szegedin	29.50	749.4	29.77	756.2	69.8	21.0	81	Calm			0		10			0.831	21.10		Karl Stancel.
Trieste	29.80	756.8	29.90	759.4	71.8	22.1	76	Calm			0		10			0.059	1.5	Raining	P. Busin.
Vienna	29.20	741.6	29.93	760.1	69.3	20.7	76	N			2		8			0.071	1.8		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.82	757.3	30.01	762.3	62.8	17.1	74	ESE			1		10		S	0	0		Royal Observatory.
Furnes	30.00	761.9	30.02	762.5	61.8	16.3	79	SE			2		10			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.30	769.6	30.40	772.1	57.3	14.1		NE	19	8.5			2			0	0	Blue sky	W. Boswell.
Ardrossan	30.24	768.1	30.26	768.6	70	21.1		NE			4		3					Foggy	G. Carrick.
Armagh, (Observatory)	30.01	762.2	30.24	763.1	66.0	18.9		NNE	14	6.3			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.09	764.3	62	16.7		NE	25	11.2			8					Overcast	John Hartnup.
Bolton (Sharples)	29.55	750.6	30.06	763.5	58.2	14.6		ENE	47	21.0			10					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.77	756.1	30.16	766.1	54.9	12.7	91	NE			4		10			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	81	27.2		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.88	758.9	29.97	761.2	59.0	15.0		E			1		10			Blank	Blank	Overcast	H. Todd.
Cardington			29.94	760.5	60.0	15.6		NE			2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.82	757.4	29.94	760.5	56.1	13.4		NE			1		10k					Misty	Lance Crp'l Hocker, R.E.
Donaghadee	30.20	767.1	30.24	768.1	62	16.7		N			4		10					Overcast	J. Mac Gowan.
Dover	29.91	759.7	29.93	760.2	58	14.4		NE			0		10					Showery	J. Costello.
Falmouth (Observatory)	29.76	755.9	29.99	761.7	59.5	15.3		NNW			4		10					Foggy	The Staff.
Fort Napier, Natal	27.81	706.4	30.02	762.5	74.8	23.8		NW			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.71	754.6	29.95	760.7	81	28.9		SE			1		10					D. clouds	
Galway (Queen's College)			30.19	766.8	63	17.2		NNE			3		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean	29.89	759.2	29.94	760.5	72.6	22.6		S			1		3					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.08	764.0	30.28	769.1	68.0	20.0		ENE			5		0					Blue sky	D. G. Maclean.
Great Yarmouth	30.01	762.2	30.02	762.5	56	13.3		E			5		8					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.77	756.1	29.94	760.5	58.3	14.6		ENE			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.74	755.4	29.96	761.0	56	13.3		NNW			1		10					Raining	Dr. S. E. Hoskins, F.R.S.
Helston	30.26	768.6	30.30	769.6	61	16.1		N			4	4ck				0	0	Fine	M. P. Moyle.
Holyhead	30.09	764.3	30.13	765.3	56	13.3		NNE			5		10					Overcast	John Tilston.
Jersey	29.70	754.4	29.99	761.7	55.4	13.0		Calm			0		10			Blank	Blank	Misty	J. Fisher.
Kew (Observatory)	29.90	759.4	29.94	760.5	60.8	16.0		NE	12	5.4			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.75	755.6	30.01	762.2	56.6	13.7		SW			1		10					Raining	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.96	761.0	30.03	762.7	74.6	23.7		N			2		0					Blue sky	A. King.
Nairn	30.34	770.6	30.41	773.2	62	16.7		NE			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.02	762.5	83.2	28.4		SW			1		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.86	758.4	30.06	763.5	56.9	13.8		NNE			5		10d		NNE	0.048	1.22	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.50	749.3	30.02	762.5	55.9	13.3		NNE			4-5		10					Drizzling	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.73	755.1	29.99	761.7	57.2	14.0		NNE			1		10					Overcast	The Staff, for E. J. Stone, Esq.
Plymouth	29.90	759.4	29.97	761.2	59.6	15.3		N			2		10					Overcast	John Merrifield.
*Roche's Point	30.06	763.5	30.18	766.6	64	17.8		NNE			5		8					¾ clouded	Wm. Kennedy.
St. Ann's Head	29.88	758.9	30.04	763.0	60	15.6		N			5		6					Gloomy	John C. Walker.
Sandwick Manse, Orkneys			30.46	773.7	60	15.6		E	9	4.0			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.67	753.6	29.73	755.1	84.8	29.3		SW			1		0					Blue sky	Serg't W. H. Lyne.
Sheffield	29.84	757.9	30.12	765.0	55.1	12.8		NE			3		10			0.05	1.3	Overcast	W. F. Cooper.
Silloth Rectory	30.16	766.1	30.19	766.8	62.4	16.9	62	E			7		10			0.010	0.25	Overcast	Rev. F. Redford, A.M.
Stonyhurst (Observatory)			30.14	765.5	56.0	13.3		NE	16	7.2			10					Overcast	Rev. S. J. Perry.
Strathfield Turgiss	29.72	754.9	29.94	760.5	58.6	14.8		N			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.98	761.5	30.00	762.0	64	17.8		N			4		10					Raining	W. Newcombe.
Valencia (Observatory)	30.17	766.3	30.20	767.1	62.0	16.7		N	21	9.4			7					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	29.99	761.7	30.03	762.7	58.0	14.4	83	NNW	5.1	2.3		10	10			0.345	8.77	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			29.52	749.8	43.0	6.1	86	W			2		10kn			0.45	11.4	Squally	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			30.36	771.1	59.0	15.0		E			6					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.99	761.7	30.18	766.5	70.6	21.4	60.2	ESE	24.5	11.0		0	2		ESE	0.04	1.0	Squally	C. Meldrum.
Melbourne (Observatory)	29.87	758.7	29.96	761.0	45.0	7.2	87	W	27	12.1			9			0.03	0.8	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.42	772.7	56	13.3		NE			3	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.46	773.7				NE			1	5	6	Calm		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell
Iron Cross, N. 25° 35′, W. 85° 45′	1	S	Blue sky	Capt. W. Randall.
Ship Lochee, S. 27° 45′, E. 44° 45′			Showery	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N. 40° 25′, W. 37° 15′			Overcast	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 32° 29′, E. 29° 16′			Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	68.9	20.5	91	SE			1	10ks				0.16	4.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.26	768.5	30.30	769.7	63.1	17.3	66	E			2		0						
Fanöe	30.19	766.9	30.21	767.4	69.4	20.8	50	E			6		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.66	758.5	29.91	759.6	52.2	11.2	88	S			6		10					Raining	
Thorshavn (Färöe)	30.34	770.7	30.38	771.6	54.1	12.3	82	SW			3		7						
Vestervig	30.23	767.7	30.32	770.1	68.7	20.4	54	E			6		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.48	748.9	30.04	762.9	64.4	18	80	SW			1		8kn		SW	0.031	0.8	Very cloudy	Collignon, Director.
Amiens, Normal School	29.89	759.1	29.99	761.8	64.6	17.8	69	SW			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.84	757.9	30.10	764.4	58.5	14.7	99	E			1		4s	E		0.295	7.50		Klein, Commandant.
Avignon, Normal School	29.86	758.5	29.94	760.5	78.1	25.6	46	WNW			2		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.45	748.1	30.00	761.9	67.5	19.7	60	NE			1		8kn		W	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.78	755.1	29.99	761.7	66.0	18.9	69	S			1		10		SW	0.079	2.00	Covered	Frère Eugene Marie.
Besançon, Normal School	29.10	739.2	29.97	761.1	71.8	22.1	57	N			1		8		SW	0	0	Very cloudy	A. Carré, Director.
Bordeaux	29.77	756.2	29.97	761.2	70.5	21.4	48	WSW			1		8		SW	0.256	6.5	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.12	739.7	30.05	763.2	67.1	19.5	67	N			2		10n	S	S			Raining	Marlot, Director.
Bourges, Normal School	29.53	750.0	30.07	763.7	69.4	20.8	72	WNW			1		ck	WNW		0.016	0.4		M. Gence, Director.
Brest, Naval Observatory	29.74	755.3	29.98	761.4	56.8	13.8	88	N			2		10		N	0.049	1.25	Misty	Ch. de Kermaree, Dir
Caen, Normal School	29.88	758.9	29.95	760.8	59.5	15.3	96	WSW			1		8		W	0.04	1.	Very cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.56	750.8	29.96	761.0	72.0	22.2	51	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.71	754.6	30.02	762.5	70.2	21.2	54	SSE			2		2		WSW	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.47	748.4	30.02	762.6	65.3	18.5	57	NE			1		6		SW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.63	727.3	29.95	760.8	65.8	18.8	67	NE			1		8		NE	0.055	1.4		Allnard, Director.
Commercy, Normal School	29.16	740.6	29.99	761.7	67.6	19.8	67	SW			1		kn	SW	SW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.87	733.3	30.01	762.3	77.0	25.0	39	SW			2		5		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.16	740.7	29.90	759.5	71.6	22	71	NW			2		kn		NE	0.634	16.1		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.78	756.4	29.99	761.8	61.2	16.2	89	SW			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.69	754.2	29.99	761.8	65.3	18.5	72	S			1		8		WSW	0	0	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.63	737.4	29.93	760.2	61.7	16.5	90	S			1		10		S			Raining	M. Cadoret, Director
Lorient, Naval Observatory	29.89	759.2	29.99	761.7	59.7	15.4	80	WSW			1		10		SW			Raining	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.36	745.7	29.97	761.1	65.5	18.6	75	WNW			1		10		N			Light rain	Ch. André, Director.
Mâcon, Normal School																			Galxiu, Director.
Marseilles, Observatory	29.70	754.3	29.96	761.0	69.3	20.7	61	WSW			3-4		3		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.96	735.5	29.97	761.2	68.4	20.2	61	NNE			1		k		NNE	0	0		Barbier, Director.
Mont-Louis	24.82	630.4	29.94	760.4	58.1	14.5	52	SW	9.4	4.2			2		W	0	0		M. Cave, for Dr. Fines.
Nice	29.89	759.3	29.93	760.2	73.0	22.8	73	SE			1		1	SE	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.72	754.9	29.92	759.9	80.4	26.9	42	W			1		2		N	0.167	4.25	Slightly cld'y	M. Boyer, Director.
Perpignan	29.87	758.8	29.98	761.4	71.1	21.7	48	S	11.2	5.0			4	W	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.52	571.9			40.1	4.5							1		SW	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.91	734.4	29.94	760.4	74.5	23.6	35	N			1		5	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	25.17	639.2			46.9	8.3	94	NE			3		8			0.110	2.8	Misty	Allnard, Director.
Rochefort, Naval Obs'y	29.98	761.6	30.02	762.4	72.5	22.5	59	SSW			1		8	SSW	SSW	0	0	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.89	759.1	29.97	761.3	58.3	14.6	85	WSW			1		10		SW	0.256	6.5	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.93	760.3	29.96	761.0	57.0	13.9	91	WNW			1		10	WNW	WNW	0.217	5.52	Light rain	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.84	757.8	30.00	762.0	66.2	19.0	63	WSW			1		10		SW	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	29.02	737.2	30.10	764.4	60.8	16	70	W			1								T. Huguet, Director.
Toulouse, Observatory	29.35	745.5	30.08	763.9	65.5	18.6	66	NW			1		8			0	0	Very cloudy	B. Baillaud, Dir.
Tours	29.78	756.4	29.98	761.4	69.6	20.9	59	WSW			1		8		W	0.024	0.6	¾ covered	M. de Tastes.
Versailles, Observatory	29.51	749.6	30.00	762.0	62.2	16.8	70	W			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.26	743.3	29.99	761.8	68.7	20.4	65	NW			1		2		N	0	0	Slightly cl'dy	Nicot, Director.
SUN-SERIES.																			
Fort de France, Martinique	30.17	766.3	30.20	767.0	79.2	26.2										0.16	4.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.72	754.9			65.7	18.7	65	SW			1		10		WSW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.67	753.5	29.69	754.2	73.4	23.0	87	SE	11.9	5.3		10ck				0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,1[illegible] 14.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.31 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Hamberg	29.16	740.7	30.02	762.6	69.4	20.8	92	NW			4		7n	W		0.059	1.5	Raining	Prof. Dr. Hoh.
Berlin	29.93	760.2	30.10	764.4	74.8	23.8	48	NE			4		7			0	0		Prof. Dr. Arndt.
Breslau	29.57	751.9	30.10	764.5	69.1	20.6	50	ENE			2		5			0	0		Royal University Obs'y.
Carlsruhe	29.56	750.9	29.98	761.4	71.2	21.8	65	NE			2		1	NW		0.031	0.8	Raining	Albert Senz.
Cassel	29.41	747.0	30.02	762.4	74.8	23.5	44	E			0		6	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.72	754.8	30.08	764.0	72.5	22.5	42	NE			1		6			0.051	1.3		Physical Society.
Friedrichshafen	28.57	725.7	29.98	761.4	63.9	17.7	66	NE			4		10	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.67	753.7	29.74	755.5	71.1	21.7	66	NE			4		9			0.063	1.6		Dr. Reinhold Kleeman.
Kiel	30.14	765.5	30.15	765.9	64.8	18.2	67	E			4		1			0.066	1.69		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.18	766.5	30.26	768.5	70.7	21.5	37	E			4		2	NE		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.65	753.0	30.05	763.3	73.0	22.8	51	ENE			4		7	NE		0.012	0.3		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.56	758.5	30.09	764.3	72.1	22.3	63	NE			4		9k	ENE		0	0		Dr. Assmann.
Memel	30.23	767.9	30.28	769.0	71.4	21.9	27	ENE			4		4k						Reinbrecht & Issermann.
Munich	28.19	716.1	30.06	763.4	62.1	16.7	77	NW			2		10	W		0.161	4.1	Thunder-storm.	Dr. C. Lang.
Neufahrwasser	30.24	768.1	30.36	768.5	61.2	16.2	68	N			4		2			0	0		A. Lothes.
Neustadt (Palatinate)	29.43	747.6	29.96	760.9	72.9	22.7	54	SW			2		6	S		0.094	2.4		Reallehrer Dicknether.
Posen	29.85	758.1	30.13	765.3	70.2	21.2	42	NE			6		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.47	748.4	30.00	761.9	72.1	22.3	54	NE			4		9	SSE		0.009	0.24	Thunder-storm.	Imp. University Observatory.
Stuttgart	29.06	738.2	29.93	760.3	65.7	18.7	74	SW					10			0.339	8.6	Raining	Prof. Dr. Schoder.
Thorn	29.90	760.0	30.15	765.6	69.4	20.8	50	NE			4		4			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.54	724.7	30.11	764.8	66.6	19.2	71	WNW	0.7	0.3		9ck		SE		0.012	0.3		Reallehrer J. Hopfner.
Wustrow	30.19	766.8	30.22	767.5	67.6	19.8	62	NE			5		3k			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.43	747.4	29.84	757.8	87.4	30.8		SW			4.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published, occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.41	746.9	29.46	748.2	82.1	27.8	85	SW	36.4	16.3			10		SW	0	0	Overcast	
Deesa	28.98	736.2	29.44	747.8	90.1	32.3	53	SW	36.1	16.1			0			0	0		
Bombay	29.68	753.8	29.71	754.7	86.8	30.4	72	W	21.0	9.4			3	SW		0	0	D. clouds	
Poona (Yarrowda)	27.86	707.7	29.70	754.3	81.5	27.5	55	WSW	29.0	13.0			1		WNW	0	0	D. clouds	
Belgaum	27.25	692.1	29.80	756.8	73.1	22.8	81	WSW	9.0	4.0			7	NE	SW	0	0	D. clouds	
Lahore	28.52	724.5	29.22	742.1	105.3	40.7	26	W	2.2	1.0			0			0	0	Misty	
Roorkee	28.44	722.4	29.31	744.5	86.8	30.4	56	NE	6.0	2.7						0	0		
Agra	28.79	731.2	29.32	744.6	102.6	39.2	30	NW	5.8	2.6						0	0		
Nagpur	28.48	723.5	29.49	749.0	95.0	35.0	34	WSW	7.1	3.2			7		S	0	0	D. clouds	
Jubbulpore	28.11	714.1	29.44	747.7	89.9	33.2	40	SW	7.0	3.1			8			0	0	Overcast	
Lucknow	29.07	738.3	29.43	747.4	99.4	37.4	38	WNW	4.3	1.9			10	Calm		0	0	Overcast	
Allahabad	29.04	737.6	29.33	745.1	102.1	38.9	34	SW	4.7	2.1			2			0	0	D. clouds	
Patna	29.21	741.9	29.38	746.4	88.8	31.6	67	N	1.2	0.5			4	N	N	0	0	D. clouds	
Hazaribagh	27.45	697.2	29.41	746.9	85.8	29.9	59	WSW	9.9	4.4			6			0	0		
Cuttack	29.46	748.2	29.54	750.2	86.1	30.1	64	SW	3.4	1.5			8			0	0	D. clouds	
Calcutta (Alipore)	29.43	747.6	29.45	748.1	82.5	28.1	85	SSW	9.0	4.0			10		NNW	2.33	59.2	Overcast	
Goalpara	29.04	737.6	29.45	747.9	78.6	25.9	92	ESE	8.6	3.8			8			1.29	32.8	Gloomy	
Chittagong	29.46	748.2	29.55	750.5	75.8	24.3	97	NE	7.8	3.5			10			1.60	40.6	D. clouds	
Sibsagar	29.18	741.0	29.51	749.4	79.7	26.5	92	E	1.8	0.8			10	W	W	0.38	9.6	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,361 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.50	749.4	29.90	759.5	71.1	21.7	68	Calm	0	0			9			0.551	14.0		Prof. Giovanni Clodig.
Milan	29.39	746.4	29.89	759.1	73.8	23.2	49	WNW	1.8	0.8			8	NW		0.102	2.6		Prof. Schiaparelli.
Padua	29.83	757.6	29.94	760.4	69.3	20.7	64	N	3.1	1.4			10	NE		0.433	11.0		Prof. Dott. Lorenzoni.
Moncalieri	29.00	736.5	29.88	758.9	72.7	22.6	52	SSE	3.8	1.7			7	NE		0.039	1.0		Prof. P. F. Denza.
Genoa	29.78	756.3	29.97	761.1	68.0	20.0	75	S	5.6	2.5			4	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.02	711.7	29.89	759 1	70.7	21.5	46	SE			2		3			0	0		Prof. D. C. Bruno.
Pesaro	29.88	759.0	29.93	760.2	67.1	19.5	77	NW	9.4	4.2			9	WNW		0.142	3.6		Prof. Luigi Guidi.
Florence	29.69	754.1	29.94	760.5	71.6	22.0	66	WSW			4		6	W		0.142	3.6		Cav. F. Meucci.
Leghorn	29.93	760.2	30.01	762 3	70.5	21.4	73	W	9.8	4.4			6			0	0		Prof. P. Monte.
Rome	29.83	757.6	29.96	761.0	75.7	24.3	51	W					3			0	0		Prof. P. S. Ferrari.
Lecce	29.71	754.7	29.96	760.9	74.7	23.7	49	NE	8.1	3.6			4	NE		0	0		Prof. C. De Giorgi.
Cosenza	29.13	739.9	29.98	761.4	81.3	27.4	67	NW	5.6	2.5			6			0	0		Prof. D. Conti.
Cagliari	29.77	756.2	29.97	761.1	72.0	22.2	61	S			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.82	757.3	30.07	763.6	70.2	21.2	69	NE	4.3	1.9			1			0	0		Prof. G. Ciacciatore.
Syracuse	29.95	760.6	29.99	761.7	76.6	24.8	52	E	9.8	4.4			0			0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.51	749.5	30.02	762.5	69.1	20.6	68	WSW	3.8	1.7			7			0.024	0.6		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					69.6	20.9	76	WNW	4.8	2.1			9ck;ks			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.58	751.3	29.77	756.1	68.0	20.0	83	W	4.2	1.9			9s			0.020	0.51	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.57	751.1	29.64	752 8	61.6	16.4	97	N	11.2	5.0			10n			2.055	52.20	Raining	The Staff.
Wakayama	29.58	751.3	29.63	752.6	72.3	22.4	73	NW	3.5	1.6			10ck		N	0.022	0.56	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.01	635.2	30.00	762.1	58.1	14.5	75	Calm			0	8k	0			0.17	4.2	Cloudy	Prof. T. Perez.
Guanaxuato	23.68	600.3			59.9	15.5	80	Calm	0	0		5kn	5kn	E	NE	Inap.	Inap.	Covered	Vicente Fernandez.
Leon	24.37	619.0	29.97	761.1	64.9	18.3	87	N			2	2c	7k	N		0.04	1.0	Cloudy	Prof. M. Leal.
Mazatlan	29.65	753.0	29.90	759.5	77.8	25.4	86	W			2		10ks		SE	0	0	Covered.	F. Quijano, C. E.
Mexico, Central Observatory	28.03	584.9	29.97	761.1	56.8	13.8	92	NE	0.4	0.2			10n			0.06	1.5	Raining	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	28.58	606.5	29.83	757.7	60.8	16.0	82	NE			1	3c	4ks	NE	NE	Inap.	Inap.	Cloudy	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.89	594.2	30.09	764.3	56.8	13.8	43	Calm	0	0		3k	0	SE		1.51	38.3	Clear	Prof. P. Spina.
San Luis Potosi	24.19	614.4	30.13	765.3	59.4	15.2	62	E			1		10		E	0.46	10.5	Covered	G. Barroeta, M D.
Tlacotalpam	29.84	757.9	29.85	758.2	78.3	25.6	92	S			2	5	5	S		0.39	9.8	Covered	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.58	573.6	30.34	770.5	52.5	11.4	95	NE			1	2cs	0	NE		0.91	23.0	Clear	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,434.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.04	762.9	30.04	762.9	64.2	17.9		SE			3					0.315	8.0		
Groningen	30.03	762.7	30.08	764.1	68.9	20.5		E			1					0.004	0.1		
Helder	30.07	763.6	30.07	763.6	63.5	17.5		ENE			1					0	0		
Hellevoetsluis	30.03	762.8	30.03	762.8	63.9	17.7	76	ESE			1					0.283	7.2		
Utrecht	30.01	762.3	30.06	763.5	64.4	18.0	72	SE			1		10			0	0	Dull	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.27	768.9	30.33	770.3	69.1	20.6	41	W	10.3	4.6	.....	.....	1	.....	.....	0	0	.....	
Brönö	30.30	769.5	30.34	770.5	59.9	15.5	74	N	9	4	.....	.....	3	.....	.....	0	0	.....	
Christiania	30.22	767.5	30.36	771.1	74.3	23.5	33	SW	7	3	.....	.....	1	.....	.....	0	0	.....	
Tromsö	30.17	766.2	30.22	767.6	48.9	9.4	79	SW	7	3	.....	.....	10	.....	.....	0.205	5.2	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.21	767.2	30.41	772.5	70.9	21.6	91	W	.....	.....	3	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	28.91	734.3	29.86	758.5	79.7	26.5	23	NW	4.3	1.9	.....	.....	3	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.09	764.3	30.18	766.5	70.7	21.5	64	SW	3.8	1.7	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.64	752.8	29.99	761.8	67.3	19.6	50	NW	22.4	10.0	.....	.....	2	WSW	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.32	770.2	30.39	772.0	69.8	21.0	78	SW	1.3	0.6	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando	.....	.....	29.90	759.5	71.6	22.0	.....	NNE	.....	.....	1	.....	0	.....	.....	1	N	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela	.....	.....	30.09	764.2	68.0	20.0	.....	W	.....	.....	3	.....	1	.....	.....	2	WSW	.....	Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirá gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	30.11	764.9	30.13	765.4	68.0	20.0	73	Calm	0	0	.....	.....	4cs	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Astrakhan	29.72	754.9	29.64	752.8	77.7	25.4	64	Calm	0	0	.....	.....	10n	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Barnaul	29.31	744.4	29.80	756.8	60.3	15.7	48	N	2	1	.....	.....	5	.....	.....	.....	.....	.....	Meteorological Obs.
Dorpat	30.15	765.9	30.39	771.9	70.3	21.3	33	NE	6	3	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.95	735.3	29.91	759.7	51.1	10.6	44	NE	13	6	.....	ck	4k	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.81	757.1	30.08	764.0	55.0	12.8	45	NNW	9	4	.....	.....	9k	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.82	757.3	29.84	757.8	77.7	25.4	78	WNW	7	3	.....	.....	4	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.39	746.4	30.02	762.6	56.5	13.6	93	ENE	4	2	.....	.....	10ks;n	.....	.....	.....	.....	Rain & fog	Physical Cabinet.
Krotkowo*	29.47	748.4	29.93	760.3	55.8	13.2	37	N	9	4	.....	.....	6	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.65	753.1	29.85	758.2	57.4	14.1	90	NE	18	8	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Moscow	29.74	755.5	30.29	769.3	63.9	17.7	41	NNE	9	4	.....	.....	2k	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.80	756.9	29.87	758.7	81.1	27.3	57	N	5	2	.....	.....	6k;ks	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.85	758.3	29.94	760.5	45.7	7.6	83	Calm	0	0	.....	.....	10s	.....	.....	.....	.....	.....	.....
Nukuss	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.43	747.6	29.58	751.2	66.0	18.9	96	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	Raining	Physical Observatory.
St. Petersburg	30.35	770.9	30.37	771.3	65.8	18.8	50	NW	11	5	.....	.....	0	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.13	714.5	29.59	751.5	86.2	30.1	45	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.36	720.4	29.70	754.4	78.8	26.0	47	NW	31	14	.....	.....	1k	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.68	753.9	30.09	764.3	66.6	19.2	58	E	16	7	.....	.....	8ck	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.84	757.9	30.25	768.4	68.2	20.1	39	NE	7	3	.....	.....	8	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Yeniseisk	29.55	750.6	29.83	757.7	61.2	16.2	54	WNW	9	4	.....	.....	8	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.91	759.6	30.01	762.2	71.2	21.8	56	SSE	4.1	1.83	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	30.03	762.8	30.09	764.2	67.3	19.6	63	NW	2.6	1.14	.....	2	7	NE	.....	0.016	0.4	Rainy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.11	688.6	.....	.....	62.2	16.8	52	NE	7.3	3.28	.....	.....	2	.....	.....	0	0	Light clouds	Domingo Martin y Perez.
Madrid, Royal Observatory	27.71	703.7	29.84	757.9	78.1	25.6	45	SE	4.5	2.00	.....	0	9	.....	.....	0	0	Almost cov'd	The Staff.
Murcia, Met. Obs'y	29.83	757.6	29.97	761.3	77.0	25.0	63	E	6.1	2.72	.....	2	4	ENE	.....	0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.15	740.3	30.03	762.8	62.2	16.8	71	N	11.2	5.0	.....	.....	9	.....	.....	0	0	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.98	761.4	30.04	763.1	83.5	28.6	78	Calm	0	0	.....	0	ks	.....	.....	0	0	Clear	Benito Vines, S. J.
Manilla, Philippine Islands	29.78	756.4	29.83	757.7	84.3	29.1	77	SW	13.9	6.3	.....	3ck	4kn	N	S	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	29.92	760.0	30.02	762.4	70.5	21.4	62	SSW	5.2	2.3	.....	0	7	.....	S	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.6	30.08	763.9	81.7	27.6	84	S	2.6	1.16	.....	6s	5k	.....	SE	0.571	14.50	D. clouds	Enriquetiadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	30.17	766.3	30.21	767.3	64.8	18.2	.....	SW	.....	.....	4	.....	0	.....	.....	0	0	.....	
Umea	30.25	768.4	30.30	769.7	68.7	20.4	76	S	.....	.....	2	.....	2	.....	.....	0	0	.....	
Hernosand	30.32	770.0	30.37	771.3	74.5	23.6	44	S	.....	.....	4	.....	2	.....	.....	0	0	.....	
Stockholm	30.22	767.6	30.40	772.1	70.9	21.6	48	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Wisby	30.26	768.7	30.32	770.2	69.4	20.8	40	SE	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	30.28	769.2	30.37	771.4	74.5	23.8	32	WNW	3.4	1.5	.....	.....	0	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Observer.
Barque Australia	.....	.....	.....	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	Capt. A. C. Schonmeyr
Saga	.....	.....	.....	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.51	724.1	29.89	759.2	69.8	21.0	49	NNE	.....	.....	2	.....	3	.....	.....	0	0	Cloudy	The Observatory.
Zurich	28.38	720.9	29.97	761.8	68.7	20.4	65	E	.....	.....	4	.....	5	.....	.....	0	0	Lightly cl'dy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.4 mm.; Thermometer, +0.2 Cent. Relative Humidity, —6 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.79	756.6	88.7	31.5	33	ESE	4	2.0	.....	.....	0	.....	.....	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.09	764.3	75.6	24.2	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.82	757.3	85.5	29.7	62	W	.....	.....	2	.....	1s	.....	W	0	0	.....	Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	59.0	15.0	.....	N	7	3.1	.....	0	0	.....	.....	0	0	Clear	Hon. J. Ferguson.
Chatham, N. B.	29.89	759.2	29.95	760.7	58.1	14.5	66	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	G. A. Blair.
Charlottetown, P. E. Island	29.85	758.2	29.90	759.4	54.9	12.7	42	NW	10	4.5	.....	0	0	.....	.....	Inap.	Inap.	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.77	756.1	29.96	761.0	63.2	17.3	75	SW	.....	.....	1	2cs	0	.....	.....	0	0	Clear	James Smith, M. A.
Dalhousie, N. B.	29.77	756.1	29.93	760.2	59.0	15.0	.....	W	.....	.....	1	0	0	.....	.....	0	0	Clear	H. A. Johnson.
Father Point, Quebec	30.04	763.0	30.07	763.8	54.6	12.6	71	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	J. McWilliams.
Fredericton, N. B.	29.92	760.0	29.98	761.5	56.0	13.3	71	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Prof. Harrison.
Fort Garry, Manitoba	29.32	744.7	30.12	765.0	60.3	15.7	85	S	2	0.9	.....	5k	5ks	SW	.....	0	0	Cloudy	James Stewart.
Granton, Ontario	29.01	736.8	30.08	764.0	63.0	17.2	83	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	James Grant.
Halifax, N. S.	29.80	756.9	29.93	760.2	58.7	14.8	51	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	A. Allison.
Hamilton, Ontario	29.68	753.9	30.06	763.5	64.3	17.9	79	SW	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.66	753.4	29.99	761.7	63.9	17.7	77	W	5	2.2	.....	10ck	0	NW	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.74	755.4	29.78	756.4	50.6	10.3	67	N	10	4.5	.....	1k	0	N	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.78	756.4	29.98	761.5	66.1	18.9	54	N	6	2.7	.....	8c;cs	0	N	.....	0	0	Fair	C. H. McLeod, C. E.
Moose Factory, Ontario	30.39	771.9	30.42	772.7	59.2	15.1	91	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear	J. R. Nason.
Norwood, Ontario	29.32	744.7	29.99	761.7	65.5	18.6	63	N	3	1.3	.....	8k	0	N	.....	0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.41	747.0	30.09	764.3	65.0	18.3	55	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.31	744.5	30.04	763.0	66.7	19.3	68	W	.....	.....	1	0	0	.....	.....	0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.87	746.0	30.04	763.0	62.1	16.7	88	NW	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear	H. Morgan.
Port Stanley, Ontario	29.43	747.5	30.06	763.5	64.0	17.8	79	N	5	2.2	.....	0	0	.....	.....	0.19	4.8	Clear	M. Payne.
Quebec, Quebec	29.71	754.6	30.03	762.7	60.5	15.8	80	E	.....	.....	6	0	Haze	.....	.....	0	0	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.64	752.8	30.09	764.3	59.0	15.0	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.79	756.7	29.96	761.0	55.0	12.8	74	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.40	746.7	30.10	764.5	60.1	15.6	72	N	4	1.8	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stratford, Ontario	28.82	732.0	30.07	763.8	61.6	16.4	78	N	3	1.3	.....	0	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.74	755.4	29.78	756.4	52.2	11.2	55	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.68	753.9	30.05	763.3	67.2	19.6	63	N	10	4.5	.....	4ck	0	NW	.....	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.01	736.8	30.04	763.0	69.0	20.6	34	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.86	758.4	29.93	760.2	56.8	13.8	75	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.22	742.2	29.47	748.5	41	5.0	82	SW	2	0.9	.....	10k	10s	.....	.....	1.38	35.1	Fair	John Delany.
St. Pierre, N. F., Hospital Maritime	.....	.....	29.56	750.8	41.0	5.0	.....	NW	.....	.....	4	.....	.....	.....	.....	0	0	.....	The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.93	760.2	30.01	762.2	68	20.0	60	NE	4	1.8		0	0			0.07	1.8	Clear	
Alpena, Michigan	29.53	750.0	30.16	766.1	61	16.1	50	NW	8	3.6		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.75	730.2	29.84	757.9	71	21.7	57	NW	16	7.2		0	0			Inap.	Inap.	Clear	
Atlantic City, New Jersey	29.95	760.7	29.97	761.2	63	17.2	78	NE	18	8.0		8k	0	N		0.19	4.8	Fair	
Augusta, Georgia	29.66	753.4	29.85	758.2	79	26.1	66	NW			2	0	0			0.31	7.9	Clear	
Baltimore, Maryland	29.96	761.0	30.01	762.2	62	16.7	83	NE	5	2.2			10n		Calm	0.28	7.1	Light rain	
Barnegat, New Jersey	29.94	760.5	29.96	761.0	64	17.8	73	NE	15	6.7		8ck	0	NW		0.11	2.8	Fair	
Bismarck, Dakota	28.37	720.6	30.22	767.6	54	12.2	86	W	14	6.3			10s		Calm	0	0	Cloudy	
Boerne, Texas	28.59	726.2	29.86	758.4	73	22.8	95	Calm	0	0		5k	0	S		0	0	Fair	
Boise City, Idaho	27.16	689.8	30.12	765.0	49	9.4	51	NE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.82	757.4	29.97	761.2	69	20.6	56	W	1	0.4		Haze	Sm'e	Calm	Calm	0	0	Hazy	
Brackettville, Texas	28.85	732.8	29.86	758.4	75	23.9	86	E	6	2.7		0	0			0	0	Clear	
Breckenridge, Minnesota	29.20	741.7	30.18	766.6	59	15.0	88	S	8	3.6		5k	0	S		0	0	Fair	
Brownsville, Texas	29.95	760.7	29.99	761.7	76	24.4	91	Calm	0	0		8cs	0	Calm		0	0	Fair	
Buffalo, New York	29.35	745.5	30.03	762.7	61	16.1	82	NE	2	0.9		0	Sm'e		Calm	0	0	Light smoke	
Burkes, Arizona					82	27.8	21	Calm			0	5ck	0	Calm		0	0	Fair	
Burlington, Vermont	29.71	754.6	29.99	761.7	62	16.7	67	S	1	0.4		2c	0	W		Inap.	Inap.	Fair	
Cairo, Illinois	29.78	756.4	30.16	766.1	66	18.9	69	NE	13	5.8		0	0			Inap.	Inap	Clear	
Campo, California	27.36	694.9	29.93	760.2	36	2.2	71	S	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.78	756.4	29.79	756.7	70	21.1	95	NE	19	8.5			10n		N	3.10	78.7	Light rain	
Cape Henry, Virginia	29.86	758.4	29.88	758.9	67	19.4	84	NE	29	13.0			10s		NE	0.06	1.5	Cloudy	
Cape Lookout, N. Carolina	29.75	755.6	29.76	755.9	74	23.3	86	NE	22	9.8			10s		NE	0.85	21.6	Cloudy	
Cape May, New Jersey	29.93	760.2	29.96	761.0	62	16.7	71	NE	16	7.2			10s		NE	0.71	18.0	Cloudy	
Castroville, Texas	29.24	742.7	29.91	759.7	79	26.1	78	SE	4	1.8		0	5ks		SE	0	0	Fair	
Cedar Keys, Florida	29.91	759.7	29.94	760.5	83	28.3	79	W	20	8.9		0	5ks		W	0	0	Fair	
Charleston, South Carolina	29.72	754.9	29.77	756.1	81	27.2	78	W	7	3.1		0	5s		W	0	0	Fair	
Charlotte, North Carolina	29.01	736.8	29.79	756.7	69	20.6	80	NE	8	3.6			10s		NE	0.28	7.1	Cloudy	
Chattanooga, Tennessee	29.16	740.7	29.93	760.2	65	18.3	73	NW	10	4.5			10ks		NW	0	0	Cloudy	
Cheyenne, Wyoming	24.21	614.9	30.15	765.8	50	10.0	86	N	14	6.3			10s		N	0	0	Cloudy	
Chicago, Illinois	29.50	749.3	30.18	766.6	59	15.0	76	N	11	4.9		0	0			0.01	0.3	Clear	
Chincoteague, Virginia	29.80	756.9	29.82	757.4	68	17.2	59	NE	27	12.1		10k	0	NE		0.17	4.3	Cloudy	
Cincinnati, Ohio	29.43	747.5	30.07	763.8	63	17.2	72	N	10	4.5		0	0			Inap.	Inap.	Clear	
Cleveland, Ohio	29.38	746.2	30.08	764.0	62	16.7	83	NE	6	2.7		0	0			0.01	0.3	Clear	
Coleman City, Texas	28.27	718.0	29.88	758.9	71	21.7	85	S	4	1.8		10ck	0	Calm		1.32	33.5	Cloudy	
Columbus, Ohio	29.22	742.2	30.04	763.0	62	16.7	72	N	10	4.5		0	0			0	0	Clear	
Concho, Texas	28.16	715.3	29.78	756.4	73	22.8	85	NE	4	1.8		8k	0	E		2.27	57.7	Fair	
Corsicana, Texas	29.60	751.8	30.05	763.3	76	24.4	86	Calm	0	0		0	8ks		S	0.31	7.9	Cloudy	
Davenport, Iowa	29.58	751.3	30.21	767.3	63	17.2	72	NE	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					48	8.9	70	NE			1	5c	0	SW		0	0	Fair	
Deadwood, Dakota	25.59	650.0			49	9.4	78	Calm	0	0			10s		Calm	0.26	6.6	Cloudy	
Decatur, Texas	29.09	738.9	30.23	767.8	70	21.1	90	NE	11	4.9		5c	0	Calm		0.14	3.6	Clear	
Delaware Breakwater, Del.	29.93	760.2	29.95	760.7	63	17.2	83	NE	23	10.3			10s		NE	0.76	19.3	Cloudy	
Denison, Texas	29.29	744.0	30.06	763.5	68	20.0	90	NE	5	2.2		5cs	0	Calm		1.82	46.2	Fair	
Denver, Colorado	24.94	633.5	30.16	766.1	58	14.4	64	NW	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	29.38	746.2	30.26	768.6	59	15.0	76	Calm	0	0		0	Haze		Calm	0	0	Clear	
Detroit, Michigan	29.44	747.8	30.10	764.5	57	13.9	75	NE	7	3.1		2cs	0	Calm		0.10	2.5	Clear	
Dodge City, Kansas	27.58	700.5	29.83	757.7	60	15.6	82	SE	16	7.2		0	0			0	0	Clear	
Dubuque, Iowa	29.55	750.6	30.24	768.1	62	16.7	67	N	3	1.3		1cs	Haze	N	Calm	0	0	Fair	
Duluth, Minnesota	29.60	751.8	30.28	769.1	52	11.1	86	NE	1	0.4		0	0			0	0	Clear	
Eagle Pass, Texas	29.20	741.7	29.89	759.2	82	27.8	67	SE	1	0.4		0	0			0	0	Clear	
Eastport, Maine	29.87	758.7	29.94	760.5	53	11.7	73	N	10	4.5		0	Haze		Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.36	745.7	30.05	763.3	63	17.2	78	Calm	0	0		0	0			0.22	5.6	Clear	
Escanaba, Michigan	29.59	751.6	30.23	767.8	62	16.7	51	N	7	3.1		0	0			0	0	Clear	
Florence, Arizona					70	21.1	57	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.08	637.0	30.52	775.2	49	9.4	44	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.17	715.5	30.02	762.5	47	8.3	92	W	8	3.6		0	0			0.33	8.4	Clear	
Fort Custer, Montana	27.03	686.6			50	10.0	71	SW	2	0.9		0	0			0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	73	22.8	55	W	2	0.9		0	0			0	0	Clear	
Fort Elliot, Texas	27.07	687.6	29.24	742.7	65	18.3	73	E	6	2.7			Fog		E	0	0	Foggy	
Fort Gibson, Indian Ter	29.61	752.1	30.14	765.5	65	18.3	63	E	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.21	640.3	30.01	762.2	76	24.4	8	E	2	0.9		0	0			0	0	Clear	
Fort Griffin, Texas	28.60	726.4	29.82	757.4	71	21.7	95	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.50	698.5			48	8.9	77	Calm	0	0		0	0			0.03	0.8	Clear	
Fort McKavett, Texas	27.82	706.6	29.66	753.4	74	23.3	76	E	2	0.9		1c	4ks	E	SE	0	0	Fair	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.90	734.0	29.97	761.2	68	20.0	79	NE	9	4.0		0	0			0	0	Clear	
Fort Stevenson, Dakota	28.32	719.3			56	13.3	80	W	12	5.4			10s		W	0.49	12.4	Cloudy	
Fort Verde, Arizona					55	12.8	39	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	81	27.2	83	SW	5	2.2		0	0			0	0	Clear	
Grand Haven, Michigan	29.53	750.0	30.16	766.1	66	18.9	64	N	3	1.3		0	0			0.13	3.3	Clear	
Helena, Montana					44	6.7	68	S	3	1.3		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.35	745.5	30.11	764.8	64	17.8	78	N	6	2.7		0	0			0.01	0.3	Clear	
Indianola, Texas	30.00	762.0	30.02	762.5	82	27.8	75	S	2	0.9		0	0			0	0	Clear	
Jacksboro, Texas	28.93	734.8	30.02	762.5	70	21.1	75	SE	8	3.6			10s		SE	0.55	14.0	Cloudy	
Jacksonville, Florida	29.85	758.2	29.87	758.7	87	30.6	65	SW	12	5.4		0	0			0	0	Clear	
Keokuk, Iowa	29.57	751.1	30.17	766.3	66	18.9	74	N	3	1.3		1c	0	W		0	0	Clear	
Key West, Florida	30.00	762.0	30.04	763.0	85	29.4	68	Calm	0	0		1k	0	Calm		0	0	Clear	
Kittyhawk, North Carolina	29.84	757.9	29.86	758.4	68	20.0	90	NE	26	11.6			10s		NE	0.02	0.5	Cloudy	
Knoxville, Tennessee	28.95	735.3	29.92	760.0	64.5	18.1	76	N	15	6.7			10ks		N	0	0	Cloudy	
La Crosse, Wisconsin	29.52	749.8	30.25	768.3	59	15.0	88	Calm	0	0			Fog		Calm	0	0	Foggy	
La Mesilla, New Mexico	26.12	663.4	30.27	768.8	70	21.1	52	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.53	750.0	29.85	758.2	81	27.2	74	SE	2	0.9		0	5s		SE	0	0	Fair	
Leavenworth, Kansas	29.37	746.0	30.20	767.1	62	16.7	67	NE	4	1.8		0	0			0	0	Clear	
Lewiston, Idaho	29.19	741.4	29.84	757.9	49	9.4	71	Calm	0	0		2c	0	Calm		0	0	Clear	
Little Rock, Arkansas	29.81	757.2	30.13	765.3	67	19.4	69	N	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.69	751.8	29.93	760.2	59	15.0	94	SW	1	0.4			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.49	749.0	30.04	763.0	54	17.8	68	N	13	5.8		0	0			0.02	0.5	Clear	
Lynchburg, Virginia	29.23	742.4	29.90	759.4	62	16.7	88	NE	7	3.1			10n			0.27	6.9	Light rain	
Madison, Wisconsin	29.25	742.9	30.22	767.0	59	15.0	70	N	5	2.2		0	0			0	0	Clear	
Marquette, Michigan	29.57	751.1	30.27	768.8	53	11.7	67	W	1	0.4		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.41	721.6	30.09	764.3	78	25.6	78	SW	3	1.3		2k	0	SW		0	0	Fair	
Memphis, Tennessee	29.73	755.1	30.07	763.8	65	18.3	73	NW	10	4.5			10s		NW	0	0	Cloudy	
Milwaukee, Wisconsin	29.50	749.3	30.22	767.6	61	16.1	45	N	13	5.8		0	0			0	0	Clear	
Mobile, Alabama	29.93	760.2	29.98	761.5	78	25.6	78	N	6	2.7		5k	2s	NW	Calm	0.01	0.3	Fair	
Montgomery, Alabama	29.75	755.6	29.97	761.2	74	23.3	63	N	6	2.7		1c	0			0	0	Clear	
Morgantown, West Virginia	29.01	736.8	29.98	761.5	59	15.0	88	NE	6	2.7			10n		Calm	0.44	11.2	Light rain	
Mt Washington, N. H.	23.86	606.0	30.22	767.6	40	4.4	72	NE	10	4.5		0	Sm'e		NE	0	0	Clear	
Nashville, Tennessee	29.52	749.8	30.04	763.0	66	18.9	74	N	9	4.0			10ks		NW	0	0	Cloudy	
New Haven, Connecticut	29.87	758.7	29.98	761.5	67	19.4	74	NE	12	5.4		0	0			0.05	1.3	Clear	
New London, Connecticut	29.94	760.5	29.98	761.5	66	18.9	64	N	3	1.3		0	0			0	0	Clear	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	81	27.2	78	NW	11	4.9		2c	0	NW		0	0	Fair	
Newport, Rhode Island	29.92	760.0	29.96	761.0	65	18.3	68	E	4	1.8		0	0			0	0	Clear	
New River, North Carolina					70	21.1	95	N			1		10n		N			Light rain	
New York, New York	29.81	757.2	29.88	758.9	65	18.3	73	NW	1	0.4		5ck	Haze	W	Calm	0.19	4.8	Fair	
Norfolk, Virginia	29.82	757.4	29.88	758.9	65	18.3	84	NE	12	5.4			10n		NE	0.05	1.3	Light rain	
North Platte, Nebraska	27.30	693.4	29.85	758.2	57	13.9	91	E	11	4.9		5k	5s	E	E	0	0	Cloudy	
Olympia, Washington Ter.	30.04	763.0	30.08	764.0	46.0	7.8	88	SW	2	0.9			10ks		SW	0	0	Cloudy	
Omaha, Nebraska	29.10	739.1	30.17	766.3	64	17.8	68	Calm	0	0		1c	2s	Calm	Calm	0	0	Fair	
Oswego, New York	29.71	754.6	30.02	762.5	63	17.2	78	S	3	1.3		1c	0	NW		0	0	Clear	
Pembina, Dakota	29.24	742.7	30.05	763.3	57	13.9	87	S	8	3.6			8ks		S	0	0	Cloudy	
Pensacola, Florida	29.95	760.7	29.98	761.5	82	27.8	71	N	9	4.0		7k	0	N		0.01	0.3	Fair	
Philadelphia, Pennsylvania	29.95	760.7	30.00	762.0	61	16.1	71	NE	8	3.6		2k	5s	N	Calm	0.11	2.8	Cloudy	
Phœnix, Arizona	28.71	729.2	30.41	772.4	82	27.8	39	E	2	0.9		0	0			0	0	Clear	
Pike's Peak, Colorado	18.03	458.0	30.24	768.1	35	1.7	36	SW	25	11.2		0	0			0	0	Clear	
Pilot Point, Texas	29.30	744.2	30.12	765.0	69	20.6	90	NE	6	2.7		8c	0	S		1.93	49.0	Fair	
Pioche, Nevada	24.08	611.6	29.85	758.2	53	11.7	25	Calm	0	0		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.03	762.7	59	15.0	82	NE	8	3.6		5k	0	NE		0.31	7.9	Fair	
Port-Huron, Michigan	29.45	748.0	30.11	764.8	56	13.3	81	N	12	5.4		0	0			0	0	Clear	
Portland, Maine	29.90	759.4	29.95	760.7	63	17.2	57	NW	6	2.7		0	0			0	0	Clear	
Portland, Oregon	30.07	763.8	30.15	765.8	51	10.6	76	S	6	2.7			10ks		S	0	0	Cloudy	
Portsmouth, North Carolina					73	22.8	85	NE	27	12.1			10s		NE	0.78	19.8	Cloudy	
Prescott, Arizona	24.80	629.9	30.16	766.1	49	9.4	44	S	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	29.97	761.2	29.98	761.5	86	30.0	65	W	13	5.8		2k	0	W		0	0	Fair	
Red Bluff, California	29.58	751.3	29.93	760.2	61.0	16.1	45	NW	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas					78	25.6	86	S			1	5ck	0	Calm		0	0	Fair	
Rochester, New York	29.41	747.0	30.01	762.2	63	17.2	78	W	3	1.3		0	Haze			0	0	Clear	
Roseburg, Oregon	29.58	751.3	30.16	766.1	47	8.3	88	Calm	0	0			10s		Calm	0	0	Cloudy	
Sacramento, California	29.84	757.9	29.92	760.0	57	13.9	75	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.61	752.1	30.18	766.6	62	16.7	77	N	10	4.5		0	0			Inap.	Inap.	Clear	
St. Paul, Minnesota	29.40	746.7	30.22	767.6	59	15.0	76	Calm	0	0		0	0			0	0	Clear	
Salt Lake City, Utah	25.66	651.8	29.99	761.7	58	14.4	32	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.34	745.2	30.01	762.2	80	26.7	78	Calm	0	0		0	0			0	0	Clear	
San Diego, California	29.87	758.7	29.94	760.5	62	16.7	83	N	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.43	747.5	30.09	764.3	63	17.2	78	N	14	6.3		0	0			0.01	0.3	Clear	
Sandy Hook, New Jersey	29.95	760.7	29.98	761.5	63	17.2	83	N	6	2.7		5c	Haze	N	Calm	1.81	46.0	Fair	
San Francisco, California	29.91	760.5	30.00	762.0	51	10.6	86	SW	9	4.0		0	Fog		SW	0	0	Fair	
Santa Fé, New Mexico	28.41	594.6	29.95	760.7	67	19.4	46	SE	10	4.5		0	0			0	0	Clear	
Savannah, Georgia	29.75	755.6	29.84	757.9	85	29.4	61	W	10	4.5		8cs	0	W		0	0	Fair	
Shreveport, Louisiana	29.84	757.9	30.05	763.3	72	22.2	85	NE	10	4.5			10s		Calm	0.33	8.4	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	29.76	755.9	29.79	756.7	77	25.0	86	N	5	2.2		8k	2ks	NE	NE	0.11	2.8	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.53	750.0	30.20	767.1	62	16.7	72	N	8	3.6		0	0			0	0	Clear	
Springfield, Massachusetts	29.87	758.7	30.00	762.0	66	18.9	69	N	1	0.4			2s		N	0	0	Fair	
Stockton, Texas	27.00	685.8	30.00	762.0	75	23.9	68	SE	8	3.6		5cs	0	Calm		0.01	0.3	Fair	
Thatcher's Island, Mass	29.93	760.2	29.99	761.7	67	19.4	89	SW	4	1.8		5k	Haze	SW		0	0	Fair	
Toledo, Ohio	29.43	747.5	30.11	764.8	60	15.6	77	NE	6	2.7		0	0			0.13	3.3	Clear	
Tucson, Arizona	27.43	696.7	29.98	761.5	75	23.9	26	S	6	2.7		0	0			0	0	Clear	
Umatilla, Oregon	29.62	752.3	30.11	764.8	53	11.7	51	E	7	3.1		5cs	0	W		0	0	Fair	
Uvalde, Texas	29.08	738.6	29.87	758.7	75	23.9	81	SE	2	0.9		0	0			0	0	Clear	
Vicksburg, Mississippi	29.80	756.9	30.06	763.5	72	22.2	76	NE	8	3.6		2c	5s	Calm	NE	0.37	9.4	Fair	
Virginia City, Montana	24.39	619.5	29.87	758.7	43	6.1	67	S	1	0.4		0	0			0	0	Clear	
Visalia, California	29.51	749.5	29.87	758.7	56	14.4	58	SW	6	2.7		0	0			0	0	Clear	
Washington, D. C.	29.89	759.2	30.00	762.0	59	15.0	94	N	12	5.4			10n		N	0.41	10.4	Light rain	
Wickenburg, Arizona					64	17.8	48	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.71	754.6	29.79	756.7	72	22.2	95	NE	10	4.5			10s		Calm	1.05	26.7	Cloudy	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	48	8.9	29	NE	14	6.3		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.93	760.2	29.97	761.2	64	17.8	68	SE	8	3.6		2cs	0	Calm		0	0	Fair	
Yankton, Dakota	28.98	736.1	30.25	768.3	67	19.4	64	Calm	0	0		10k	0	Calm		0	0	Cloudy	
Yuma, Arizona	29.61	752.1	29.75	755.6	71	21.7	58	NE	3	1.3		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.02	559.3			54.0	12.2	82	Calm	0	0			10n			0.04	1.0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.02	762.5	30.07	763.8	82	27.8	78	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	29.99	761.7	30.00	762.0	80	26.7	79	Calm	0	0		2c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	82	27.8	75	NE	6	2.7		0	5cs		NE	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	80	26.7	82	E			2	5k	7ks	E		0.910	23.11	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.41	747.0	29.96	761.0	83	28.3	80	Calm			0		10ks;s			0.23	5.8		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25.		S					8k		S	0.04	1.		Earl Flint.
Santiago de Cuba, W. I.	30.01	762.2	30.03	762.7	83	28.3	74	Calm	0	0		2c	2ks		NE	0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.76	755.9	29.81	757.2	53.0	11.7	90	SW	9	4.0		1c	1s	S	SW	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 318 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,828 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126 0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.02	762.5	78	25.6	78	W	6	2.7			8		NW					Fair	
§ Navy Yard, Portsmouth, N. H.	29.98	761.5	62	16.7	72	SSW	2	0.9			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.65	753.1	62	16.7	94	NE			4		10n		NE	1.80	45.7			Light rain	
§ Adams, Payta, Peru	29.99	761.7	67	19.4	79	SE			1		10		SE				S	Cloudy	
§ Alaska, Callao, Peru *	29.94	760.5	62	16.7	88	SE			1		10					Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.50	749.3	65	18.3	94	N			5		10		N			Smooth		Rainy	
§ Alliance, St Pierre, Newfoundland	29.58	751.3	45	7.2	76	NNW			3		0					Smooth	E	Clear	
§ Ashuelot, Whanyuen, Yangtzekiang, China	29.64	752.8	79	26.1	78	W			1		10		Calm	0	0	None		Cloudy	
§ Colorado, New York, N. Y.	29.96	761.0	64	17.8	73	NNE	4	1.8			8							Misty	
§ Constellation, Annapolis Roads, Md.	29.88	758.9	62	16.7	88	NE			4-6		8		NE			Smooth		Cloudy	
§ Constitution, New York, N. Y.	29.92	760.0	65	18.3	73	N	4	1.8			2		N					Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	29.81	757.2	65	18.3	100	ENE	9.6	4.3			10		ENE	0.4	10.			Cloudy	
§ Independence, Mare I'd, Navy Yard, Cal.	30.00	762.0	54	12.2	??	SW	3.6	1.6			1		SW	0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.81	757.2	47	8.3	92	Calm			0		2					Smooth		Clear	
§ Kearsarge, Boston, Mass	29.95	760.7	67	19.4	74	W			1		0							Fair	
§ Lackawana, N. 11° 13', W. 86° 20' †	30.04	763.0	80	26.7	87	ENE			3		8		ENE			Smooth	ENE	Fair	
§ Marion, Port Stanley, Falkland I'ds	29.29	744.0	39	3.9	100	SSW			1		10					Smooth		Drizzling	
§ Michigan, Erie, Pa	30.00	762.0	64	17.8	89	NE			1		0							Clear	
§ Minnesota, Navy Yard, Brooklyn, N.Y.*	30.00	762.0	64	17.8	89	ENE			2		8		NNW					Cloudy	
§ Monocacy, Chefoo, China	29.63	752.6	70	21.1	85	S			2		10					Long	NE	Cloudy	
§ New Hampshire, Port Royal, S. C.	29.79	756.7	82	27.8	71	W	20	8.9			8		W	0	0			Cloudy	
Nipsic, Leghorn, Italy	29.95	760.7	70	21.1	75	WNW			3		5					Smooth		Hazy	
§ Onward, Chimbote, Peru	29.97	761.2	66	18.9	79	Calm			0		10		NW			Long	W	Cloudy	
§ Palos, Shanghai, China	29.80	756.9	70	21.1	100	SE			2		8							Cloudy	
§ Passaic, Washington, D. C.	29.98	761.5	63	17.2	89	NE			3		10		NE	2.8	46.			Light rain	
§ Pensacola, N. 5° 04', W. 123° 48'	29.98	761.5	49	9.4	93	NW			5		0					Rough	S	Blue sky	
§ Portsmouth, Fayal, Azore Islands	30.36	771.1	69	20.6	95	SSW			3		8					Smooth		Cloudy	
§ Powhatan, New York, N. Y.	29.96	761.0	63	17.2	89	N			2		5		NNE					Fair	
§ Quinnebaug, N. 52° 00', E. 3° 27'	30.01	762.2	58	14.4	88	ESE			4		8		ESE			Smooth		Cloudy	
§ Richmond, N. 33° —', E. 130° —'	29.77	756.1	71	21.7	85	WNW			3		8		WNW	0	0	Long		Fair	
Rio Bravo, Brownsville, Texas	30.14	765.5	75	23.9	100	E	1	0.4			8		Calm	0	0			Fair	
§ Saratoga N. 36° 07', W. 4° 07'	29.99	761.7	72	22.2	80	Calm			0		2			0	0	Smooth		Clear	
§ Shenandoah, Buenos Ayres, Argentine Republic	30.04	763.0	55	12.8	74	NW			4		8					Smooth		Fair	
§ St. Louis, League Island, Pa	29.99	761.7	63	17.2	94	NE	5	2.2			5		NNE	0.1	3.			Cloudy	
Swatara, N. 21° 09', E. 114° 00' †	29.70	754.4	85	29.4	80	SE			1		2		Calm			Smooth		Clear	
§ Tennessee, New York, N. Y.	29.98	761.5	75	23.9	64	N			1		2		W	1.3	32.	Smooth		Fair	
§ Ticonderoga, Nagasaki, Japan	29.75	755.6	72	22.2	90	SW			2		8		WSW			Smooth		Fair	
§ Trenton, N. 36° 13', W. 4° 53'	30.00	762.0	73	22.8	67	W			2		5			0	0	None		Cloudy	
§ Vandalia, New Bedford, Mass.	29.97	761.2	64	17.8	78	ESE			2		1		S					Clear	
§ Wabash, Boston, Mass	29.97	761.2	63	17.2	78	Calm	0	0			2			0	0			Foggy	
§ Wachusett, S. 35° 09', W. 76° 35'	29.96	761.0	59	15.0	100	NW			3		2		N	0	0	Smooth		Clear	
Wyoming, N. 43° 07', E. 6° 45'	29.92	760.0	60	20.6	75	WSW			3		2		W			Smooth	W	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 51° 32', W. 16° 17'	30.41	772.4	54	12.2		NE			3		2		NE			Smooth		Fair	
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent Liverpool, Eng	30.04	763.0	67	19.4	89	SE			2		8		SE	0	0			Fair	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 45° 04', W. 33° 46'.....*†	29.88	758.0	68	20.0	95	SSW			6		10		SSW	8 h'rs	8 h'rs	Mod'ate	SW	Raining	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger. N. 24° 13', W. 110° 19'.....†	29.81	757.2	67	19.4	89	SSE			3		5		SSE	0	0	Small	SSE	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch,																			C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 41° 31', W. 160° 14'.....†	30.24	768.1	61	16.1	94	E			4*		10		E			Light	E	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 31° 19', E. 131° 24'.....†	29.67	753.6	72	22.2	90	W			5		ks		SW	Light	Light	Mod'ate	W	Cloudy	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lachlan.																			J. M. Lachlan.
S. S. Oregon, E. Poleman n, N. 39° 36', W. 123° 54'.....†	30.12	765.0	60.0	10.0		NW			6		0					Rough	NW	Clear	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander San Pedro, Cal.....†	30.00	762.0	61	16.1		W			1		0					Mod'ate	W	Clear	
§ S. S. Idaho, E. Alexander.																			
S. S. Orizaba, C. B. Johnson,																			Harrison & Marshall.
§ S. S. State of California G. Dabney. San Francisco, Cal.....†	29.95	760.7	48	8.9		W			3		5		W					Fair	

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, La Libertad, San Salvador.....†	29.90	759.4	83	28.3	64	E			1		2		Calm			Mod'ate	SW	Clear	F. A. Johnston.
§S. S. Australia																			Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.01	762.2	48?	8.9?		SW			3		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 14° 30′ W. 93° 32′.....†	29.95	760.7	64	17.8	76	W			1		2		W	0	0	Smooth	S	Clear	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.58	751.3	63	17.2	83	NE			6		10		SW	Mod'ate	Mod'ate			Rainy	
§S. S. City of Sidney, B.C. Dearborn, N. 36° 36′, W. 123° 58′...*†	30.05	763.3	55	12.8		NNW			6		8		NW	0	0	Heavy	NNW	Hazy	E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, N. 15° 53′, W. 98° 14′.....†	29.93	760.2	83	28.3	100	ESE			3		10		SE	0.60	15.2	Smooth	S	Cloudy	
§S.S. Dakota, H. G. Morse.																			
§S.S. Granada, J. M. Cavardy																			C. T. Rode.
§S. S. Idaho, E. Alexander, Tacoma, Washington Ter.....†	30.14	765.5	61	16.1		Calm			0		0			0	0			Fair	E. Alexander.
§S.S. Zealandia, R. C. Ghest. N. 14° 54′, W. 169° 19	29.59	759.2	77	25.0		E			2		10		SE			Smooth	SE	Cloudy	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 46° 55′, W. 21° 07′.....†	30.37	771.4	61	16.1		S			2		2		S	0	0			Clear	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings. N. 48° 29′, W. 30° 17′.....†	29.87	758.7	61	16.1	94	S			5		Mist			8 h'rs	8 h'rs	Mod'ate	S	Overcast	
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic. B. Gleadell																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	29.73	755.1	85	29.4		SW			1		0			0	0			Fine	A. R. Mehaffey.
Schr. Adele Fuller, J. Jorgensen, Boston, Mass	29.93	760.2	68	20.0	60	NW					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 25° 43′, W. 69° 50′.....†	30.09	764.3	83	28.3		S			1		2		S	0	0	Mod'ate	S	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 4° 25′, W. 26° 20′.....*†	30.06	763.5	80	26.7		SSE			4		5		SSE			Smooth	SSE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 52° 56′, W 52° 52′.....†	29.69	754.1				NNE			8		8		NE					Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin.																			
Iron Cross, W. Randall, N. 25° 33′, W. 85° 43′.....*	30.02	762.5	81.6	27.6	83	SW			1-2		2			Slight	Slight	Smooth		Blue sky	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.84	757.9	64	17.8	78	NE			4		5		NE	0	0			Fine	James S. Garvin.

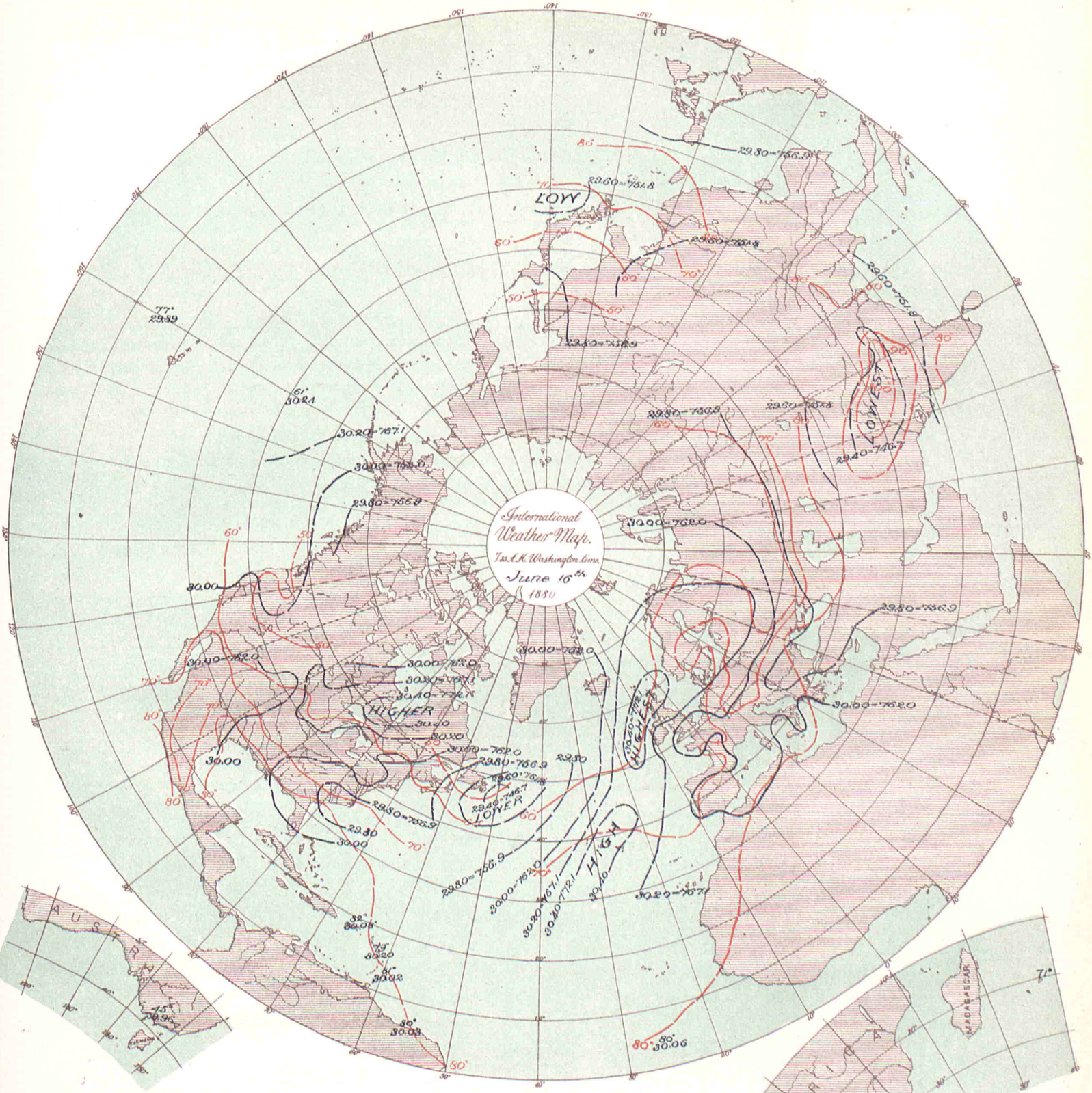
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

W. B. HAZEN,
CHIEF SIGNAL OFFICER.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 17, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco																			Dr. Ollive.
Nemours			30.06	763.4	77.0	25.0	68	WNW			1		4			0	0	Cloudy	Metge.
Algiers			30.04	762.9	72.0	22.2	70	NW			2		8			Inap.	Inap.	Very cloudy	Nicolas.
La Calle			29.97	761.3	70.7	21.5	96	NE			2		9			0	0	Very cloudy	Fonfrède.
Tunis			29.97	761.1															Jacques.
Sfax			30.12	765.0															Gau.
Saida			30.05	763.2															Charon.
Tebessa			29.97	761.3	92.5	33.6	85	W			6		8			0	0	Very cloudy	Watrin.
Geriville			30.03	762.8	79.7	26.5	48	NW			2		0			0	0	Clear	Lonchamp.
Laghouat			29.98	761.4	100.1	38.0	10	SSE			6		5			0	0	Cloudy	Herlin.
Biskra			29.95	760.6	98.2	33.8	23	E			5		7			0	0	Cloudy	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.46	748.3	29.99	761.7	74.1	23.4	64	W			2		9			0.059	1.5	Raining	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.35	745.6	30.11	764.9	60.8	16.0	87	NE	9.4	4.2			10			0.076	1.9		Dr. Wierzbicki.
Eperies	29.11	739.4	29.96	760.9	70.9	21.6	62	N			2		8ks		S	0.031	0.80		Julius Mikolik.
Gratz	28.72	729.5	29.93	760.1	70.9	21.6	67	SE			1		7			0.197	5.0		Andreas Rospini.
Hermannstadt	28.50	724.0	29.90	759.4	64.0	17.8	90	SSW			2		10			0.041	1.05	Raining	Prof. A. Gottschling.
Kremsmünster, Observatory	28.69	728.8	29.98	761.6	70.9	21.6	74	SE			6		8			0.331	8.4		The Staff.
Lemberg	29.10	739.0	30.07	763.8	60.3	15.7	79	SE			2		10			0	0		Dr. T. Stanecki.
Pola	29.94	760.5	30.05	763.2	72.9	22.7	73	SW			1		2			0	0		I.R. Hydrographic Office.
Szathmar	29.48	748.8	29.93	760.2	72.1	22.3	72	NW			2		10						Pet. Pancsics, S. J.
Szegedin	29.65	753.2	29.92	760.0	68.7	20.4	78	NW			4		10			0.085	2.15		Karl Stancel.
Trieste	29.96	760.9	30.06	763.5	73.8	23.2	78	W			1		4			0	0		P. Busin.
Vienna	29.33	744.9	30.06	763.4	70.9	21.6	55	N			2		4			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon																			Prof. M. Passau.
Brussels	29.87	758.6	30.07	763.6	68.9	20.5	73	E			1	8	2	E	E	0	0		Royal Observatory.
Furnes	30.09	764.3	30.11	764.9	65.1	18.4	88	WNW			2		10			0.016	0.4		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 20, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.34	770.6	30.44	773.2	56.6	13.7		ENE	9	4.0			1			0	0	Blue sky	W. Boswell.
Ardrossan	30.26	768.6	30.28	769.1	69	20.6		NE			4		0					Misty	G. Carrick.
Armagh, (Observatory)	30.04	763.0	30.28	769.1	65.2	18.4		ENE	11	4.9			7					D. clouds	S. Call.
Bidston (Liverpool Obs)			30.19	766.8	65	18.3		ENE	28	12.5			10					Overcast	John Hartnup.
Bolton (Sharples)	29.68	753.9	30.19	766.8	63.0	17.2		ENE	27	12.1			10					Overcast	Thomas Mackereth.
Bradford, Yorkshire	29.84	757.9	30.23	767.8	63.6	17.6	77	E			3		9			0	0	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	82	27.8		NE			2		4					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.05	763.3	30.14	765.5	73.0	22.8		E			1		7					D. clouds	H. Todd.
Cardington			30.10	764.5	70.0	21.1		E			1		9					Overcast	John McLaren.
Chatham (School M. E.)	30.00	762.0	30.13	765.3	60.0	15.6		Calm			0		10k					Overcast	Lance Crp'l Hocker, R.E.
Donaghadee	30.25	768.3	30.29	769.4	62	16.7		N			3		8					Overcast	J. Mac Gowan.
Dover	30.05	763.3	30.08	764.0	60	15.6		NNW			2		10					Raining	J. Costello.
Falmouth (Observatory)	29.88	758.9	30.10	764.5	63.1	17.3		E			4		9					Foggy	The Staff.
Fort Napier, Natal	27.70	703.6	29.91	759.7	68.4	20.2		W			3		2					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.70	754.4	29.93	760.2	86	30.0		SW			1		10					D. clouds	
Galway (Queen's College)			30.15	765.8	65	18.3		ENE			1		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.97	761.2	30.02	762.5	72.6	22.6		SW			4		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	30.11	764.8	30.31	769.9	66.9	19.4		NE			6		0					Blue sky	D. G. Maclean.
Great Yarmouth	30.18	766.6	30.18	766.6	60	15.6		ENE			4		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.94	760.5	30.11	764.8	61.1	16.2		NNW			1		10					Overcast	The Staff, for G. B. Airy.
Guernsey	29.85	758.2	30.07	763.8	57.5	14.2		ENE			1		8					Raining	Dr. S. E. Hoskins, F.R.S.
Helston	30.26	768.6	30.38	771.6	67	19.4		E			6	ck				0	0	Fine	M. P. Moyle.
Holyhead	30.17	766.3	30.20	767.1	65	18.3		ENE			4		10					Overcast	John Tilston.
Jersey	29.80	756.9	30.09	764.3	60.8	16.0		NE			3		8			Blank	Blank	Gloomy	J. Fisher.
Kew (Observatory)	30.08	764.0	30.12	765.0	59.9	15.5		NNE	4	1.8			10					Raining	The Met'g'l Office.
Leicester (Museum)	30.01	762.2	30.26	768.6	69.3	20.7		W			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	30.21	767.3	30.29	769.4	79.8	26.6		SE			2		2					Blue sky	A. King.
Nairn	30.32	770.1	30.41	772.4	57	13.9		NE			3		0					Clear	W. D. Penny.
Nassau, Bahamas			29.98	761.5	83.0	28.3		SW			1		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	30.00	762.0	30.18	766.6	71.2	21.8		ENE			3	3c		E		0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.64	752.8	30.15	765.8	62.2	16.8		NE			4		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.91	759.7	30.17	766.3	58	14.4		NNE			1		10					Threatening	The Staff, for R. J. Stone, Esq.
Plymouth	30.02	762.5	30.10	764.5	63.7	17.6		ENE			4		10					Overcast	John Merrifield.
*Roche's Point	30.06	763.5	30.18	766.6	67	19.4		ESE			4		8					Drizzling	Wm. Kennedy.
St. Ann's Head	29.99	761.7	30.14	765.5	61	16.1		E			1		7					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.45	773.7	62.6	17.0		SSE	11	4.9			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.76	755.9	29.83	757.7	81.0	27.2		N			2		6					D. clouds	Serg't W. H. Lyne.
Sheffield	29.97	761.2	30.25	768.5	65.8	18.8		NE			1		10			0	0	Overcast	W. F. Cooper.
Silloth Rectory	30.26	768.6	30.28	769.1	71.3	21.8	59	SE			6		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.24	768.1	65.1	18.4		NE	14	6.3			8					Misty	Rev. S. J. Perry.
Strathfield Turgiss	29.92	760.0	30.13	765.3	66.1	18.9		E			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.08	764.0	30.09	764.3	62	16.7		E			4		10					Raining	W. Newcombe.
Valencia (Observatory)	30.11	764.8	30.13	765.3	63.8	17.7		E	20	8.9			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.05	763.3	30.09	764.3	61.0	16.1	56	S	11.0	4.9		0	1			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			29.52	749.8	43.0	6.1	86	W			2		10kn			0.45	11.4	Squally	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			30.38	771.6	60.0	15.6		E			3					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	30.00	762.0	30.19	766.9	71.3	21.8	64	SSE	19.5	8.7		0	6		SE	0.02	0.5	Squally	C. Meldrum.
Melbourne (Observatory)	29.96	761.0	30.05	763.3	50.0	10.0	85	W	18	8.0			9			0.35	8.9	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.37	771.4	64	17.8		ENE			2	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.45	773.4				W			1	0	2			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—		
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Sommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 24° 05′, W. 83° 00′	0		Blue sky	Capt. W. Randall.
Ship Lochee, S. 29° 30′, E. 40° 15′	6		Showery	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N. 41° 41′, W. 25° 47′	3		D. clouds	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 33° 25′, E. 25° 38′	5		D. clouds	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.17	664.7	29.89	759.2	68.4	20.2	86	SE			2	6cs; ck				Inap	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.24	768.0	30.28	769.2	68.2	20.1	48	Calm			0		0						
Faröe	30.26	768.7	30.28	769.2	71.2	21.8	47	SE			4		0						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.93	760.2	29.97	761.3	54.3	12.4	94	S			8		8					Raining	
Thorshavn (Faröe)	30.39	771.8	30.42	772.7	60.4	15.8	65	W			5		0						
Vestervig	30.21	767.4	30.31	769.8	68.0	20.0	52	NNW			2		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.52	749.8	30.07	763.8	66.2	19	72	NE			1		5kn	NW	NE	0.496	12.6	Cloudy	Collignon, Director.
Amiens, Normal School	29.98	761.4	30.09	764.2	60.4	15.8	89	N			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.80	756.8	30.05	763.3	60.8	16.0	98						10n	E		0.224	5.70		Klein, Commandant.
Avignon, Normal School	30.00	761.9	30.08	763.9	65.1	18.4	86	ESE			1		10					Raining	Giraud, Director.
Bar-sur-Seine	29.50	749.2	30.04	762.9	69.8	21.0	61	SE			1		8kn		SE	0.327	8.3	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.80	756.9	30.06	763.5	70.0	21.1	66	E			1		8		SSE	0.236	6.00	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.17	741.0	30.02	762.6	72.9	22.7	60	S			1		5		NE	0.059	1.5	Cloudy	A. Carré, Director.
Bordeaux	29.80	756.9	30.00	761.9	71.6	22.0	50	S			1		10		SSW	0.142	3.6	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.19	741.5	30.12	765.0	69.1	20.6	80	N			2		8n	S	S	0.244	6.2	Very cloudy	Marlot, Director.
Bourges, Normal School	29.50	749.3	30.04	762.9	70.5	21.4	68	NE			2		kn		NE	0	0		M. Gence, Director.
Brest, Naval Observatory	29.79	756.6	30.03	762.8	64.0	17.8	82	ESE			1		10		ESE	0.059	2.25	Raining	Ch. de Rermaree, Dir
Caen, Normal School	29.91	759.6	29.98	761.4	63.1	17.3	84	E			1		5		S	0.146	3.70	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.58	751.3	29.97	761.3	77.0	25	53	NW			1		2		E	0.016	0.4	Slightly cl'dy	September, Director.
Châlons-sur-Marne, N. Sch'	29.79	756.7	30.10	764.6	73.0	22.8	58	SSE			1		5		SW	0.354	9.0	Cloudy	Jadot, Director
Chartres, Normal School	29.47	748.6	30.03	762.7	73.4	23	58	W			1		5		E	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.69	728.7	30.02	762.6	61.3	16.3	77	NE			1		5			0.067	1.7		Alluard, Director.
Commercy, Normal School	29.20	741.6	30.03	762.8	69.8	21	73	E			1		kn	E	E	0.720	18.3		Dr. Coullet, Director.
Commune de Gréasque*	28.98	736.2	30.13	765.2	71.6	22.0	50	NW			2		8		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.24	742.4	29.98	761.4	72.7	22.6	63	NW			2		ckn			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.85	758.1	30.06	763.5	64.4	18.0	78	SE			1		10			0	0	Covered	Mouillot, Director.
Le Mans, Normal School	29.74	755.3	30.04	763.0	68.5	20.3	68	E			3		5		S	1.035	26.3	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.19	741.5	30.09	764.3	66.7	19.3	83	W			1		2n		SW			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.97	761.1	30.07	763.7	65.8	18.8	84	S			3		8	S		0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.44	747.7	30.04	763.1	69.3	20.7	68	SE			1		10cn			0	0	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.80	756.9	30.07	763.6	70.7	21.5	70	WSW			1-2		8		SSW	Inap.	Inap.		E. Stephan, Director.
Mirecourt, Normal School	28.96	735.6	29.97	761.1	71.6	22	74	NW			1		s		NW	0.409	10.4		Barbier, Director.
Mont-Louis	24.89	632.1	30.12	765.1	55.8	13.2	67	W	5.6	2.5			2		N	0.264	6.7		M. Cave, for Dr. Fines.
Nice	30.02	762.5	30.05	763.3	72.3	22.4	63	E			4		1	W	E	0	0	Clear	Capt. Boissiere, Director.
Nismes, Normal School	29.86	758.4	30.08	763.9	72.1	22.3	74	E			1		2		E	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.94	760.4	30.04	763.0	69.4	20.8	67	SE	9.4	4.2			5		WSW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.58	573.5			44.6	7.0							10		SW	0.075	1.9	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.01	736.8	30.05	763.2	68.0	20	64	N			1		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Ob	25.22	646.7			49.8	9.9	83	S			1		5			0.138	3.5		Alluard, Director.
Rochefort, Naval Obs'y	30.04	763.0	30.07	763.8	68.9	20.5	77	WSW			1		8	WSW	WSW	1.34	34.	¾ covered	Lt. E. Devante, Director
Rouen, Normal School	29.97	761.1	30.01	762.3	68.0	20.0	68	WSW			1		2		SW	0.146	3.7	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.00	761.9	30.03	762.7	66.6	19.2	70	ENE			3		1	NE	NE	0.150	3.80	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.89	759.2	30.06	763.4	70.5	21.4	64	SE			1		5	SE	SE	0.181	4.6		E. Renou, Director.
Tarbes, Normal School	29.03	737.3	30.04	762.9	61.8	11	86	S			1								T. Huguet, Director
Toulouse, Observatory	29.34	745.1	30.06	763.5	73.0	22.8	52	SSE			1		0			0	0	Clear	B. Baillaud, Dir.
Tours											1		5		E	0.264	6.7	½ covered	M. de Tastes.
Versailles, Observatory	29.58	751.2	30.07	763.6	68.4	20.2	61	N			1					0.186	4.72		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.42	747.2	30.11	764.7	71.1	21.7	60	ENE			1		5			0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	78.8	26										0	0		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.78	756.5			67.5	19.7	65	N			1		7		S	0.122	3.1		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.64	752.9	29.67	753.5	70.7	21.5	95	SSE	6.3	2.8			10n			0.433	11.0	Raining	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 323 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.24	742.6	30.10	764.6	71.2	21.8	92	E			8		3k	E		0	0		Prof. Dr. Hoh.
Berlin	30.02	762.4	30.18	766.6	70.5	21.4	40	SE			4		6			0	0		Prof. Dr. Arndt.
Breslau	29.62	752.3	30.15	765.8	70.7	21.5	56	E			2		7			0	0		Royal University Obs'y
Carlsruhe	29.61	752.1	30.02	762.6	72.0	22.2	73	NE			2		10	NE		0.177	4.5	Raining	Albert Senz.
Cassel	29.53	750.0	30.14	765.5	72.7	22.6	53	NE			2		4	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.77	756.2	30.14	765.5	76.1	24.5	26	E			2		7			0	0		Physical Society
Friedrichshafen	28.61	726.8	30.01	762.2	68.4	20.2	68	SW			4		5	SW		0.08	0.2		Chief Telegrapher Wilhelm.
Hamburg	30.16	766.1	30.23	767.9	69.1	20.6	54	NE			4		4			0	0		Dr. Reinhold Kleeman.
Kiel	30.24	768.2	30.26	768.6	66.2	19.0	51	ENE			5		0			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.17	766.4	30.25	768.4	71.6	22.0	47	E			3		2	E		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.76	755.8	30.17	766.3	69.1	20.6	55	NE			1		6	NE		0.028	0.7		Prof. Dr. Bruhns, Privy Counselor.
Magdeburg	29.97	761.1	30.19	766.9	73.9	23.3	38	NE			4		5ks	NNW		0	0		Dr. Assmann.
Memel	30.23	767.9	30.28	769.1	69.4	20.8	44	NNW			3		1k						Reinbrecht & Issermann.
Munich	28.25	717.6	30.12	765.0	68.2	20.1	54	NE			4		6	NE		0	0		Dr. C. Lang.
Neufahrwasser	30.25	768.3	30.26	768.7	63.7	17.6	67	NNE			1		5			0	0		A. Lothes.
Neustadt (Palatinate)	29.53	750.0	30.06	763.4	72.9	22.7	62	NE			1		10			0	0		Reallehrer Dicknether.
Posen	29.91	759.7	30.19	766.9	64.6	18.1	63	N			6		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.52	749.9	30.06	763.5	69.4	20.8	69	NNE			2		9			0.345	8.76	Raining	Imp. University Observatory.
Stuttgart	29.10	739.2	29.97	761.3	68.0	20.0	77	N					10			0.091	2.3	Raining	Prof. Dr. Schoder.
Thorn	30.01	762.2	30.20	767.0	65.8	18.8	57	NE			2		10			0.035	0.9		Dr. Cunerth.
Weissenburg (Bavaria)	28.59	726.2	30.17	766.4	70.0	21.1	58	NE	2.0	0.9		8ck		NE		0.059	1.5		Reallehrer J. Hopfner.
Wustrow	30.24	768.2	30.27	768.9	66.9	19.4	57	ENE			3		2s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.52	749.7	29.89	759.2	88.9	31.6		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.47	748.5	29.52	749.7	83.5	28.6	81	SW					0			0	0	Misty	
Deesa	29.02	737.1	29.48	748.7	92.4	33.6	51	SW	34.7	15.5			0			0	0		
Bombay	29.70	754.4	29.74	755.3	86.2	30.1	74	W	20.0	8.9			10		WSW	0.04	1.0	Overcast	
Poona (Yarrowda)	27.88	708.1	29.72	754.9	81.0	27.2	56	WSW	27.0	12.1			2		W	0	0	D. clouds	
Belgaum	27.26	692.4	29.81	757.2	71.7	22.1	57	WSW	8.0	3.6			8	E	SW	0.08	2.0	D. clouds	
Lahore	28.59	726.2	29.29	744.0	103.1	39.5	34	E	4.4	2.0			10			0.05	1.3	Overcast	
Roorkee	28.46	722.8	29.31	744.5	96.5	35.8	42	Calm	5.0	2.2			10			0.22	5.6	Moist & muggy	
Agra	28.83	732.2	29.36	745.8	102.6	39.2	30	SW	7.2	3.2						0	0		
Nagpur	28.50	723.9	29.50	749.3	97.7	36.5	29	N	7.9	3.5			5	NW		0	0		
Jubbulpore	28.18	715.7	29.49	749.1	93.2	34.0	33	NW	6.2	2.8						0	0	Blue sky	
Lucknow	29.08	738.6	29.44	747.7	100.4	38.4	38	SW	3.8	1.7						0	0	Blue sky	
Allahabad	29.08	738.5	29.37	746.0	99.8	37.7	39	W	5.7	2.6			7		W	0	0	D. clouds	
Patna	29.18	741.1	29.35	745.4	95.3	35.2	54	Calm	1.4	0.6			6	NW	NW	0	0	D. clouds	
Hazaribagh	27.49	698.2	29.44	747.9	86.8	30.4	58	SW	12.3	5.5			1			0	0		
Cuttack	29.44	747.8	29.52	749.7	86.1	30.1	70	S	3.3	1.4			5			0.02	0.5	D. clouds	
Calcutta (Alipore)	29.47	748.5	29.49	749.0	86.7	30.4	88	SSW	12.0	5.4			8		W	0.03	0.8	D. clouds	
Goalpara	29.09	738.8	29.50	749.2	75.2	24.0	91	NW	3.9	1.7			10			1.40	35.6	Gloomy	
Chittagong	29.52	749.9	29.61	752.1	83.9	28.8	87	SSE	7.1	3.2			8			0	0	D. clouds	
Sibsagar	29.19	741.5	29.52	749.9	78.1	25.6	98	SW	2.0	0.9			10	SW	SW	2.20	55.9	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.63	752.7	30.03	762.8	73.6	23.1	64	SW	1.3	0.6			8			0.236	6.0		Prof. Giovanni Clodig.
Milan	29.51	749.5	30.00	762 0	78.4	25.8	47	SSW	6.3	2.8			6	SW		0.024	0.6		Prof. Schiaparelli.
Padua	29.93	760.1	30.04	762.9	75.4	24.1	53	SW	4.3	1.9			8	SW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.11	739.3	29.99	761.8	72.3	22.4	58	ESE	3.8	1.7			5	N		0.283	7.2		Prof. P. F. Denza.
Genoa	29.91	759.6	30.10	764.4	68.4	20.2	73	SW	4.9	2.2			2			0	0		Prof. G. M. Garibaldi
Mondovi	28.14	714.7	30.00	762.1	70.9	21.6	57	NE			2		5	W		0.327	8.3		Prof. D. C. Bruno.
Pesaro	30.00	762.0	30.05	763.2	70.9	21.6	68	NE	9.8	4.4			2	W		0	0		Prof. Luigi Guidi.
Florence	29.81	757.1	30.06	763.5	76.1	24.5	50	NW			2		3			0	0		Cav. F. Meucci.
Leghorn	30.03	762.8	30.11	764.9	72.9	22.7	69	S	3.8	1.7			3			0	0		Prof. P. Monte.
Rome	29.92	759.9	30.09	764.3	79.8	26.3	54	SW					6			0	0		Prof. P. S. Ferrari.
Lecce	29.83	757.6	30.08	763.9	76.1	24.5	50	ESE	7.4	3.3			3			0	0		Prof. C. De Giorgi.
Cosenza	29.17	740.9	30.02	762.5	84.2	29.0	65	SSW	0.7	0.3			0			0	0		Prof. D. Conti.
Cagliari	29.73	755.2	29.93	760.1	78.4	25.8	48	SE			4		8			0	0		Prof. A. Pacinotti.
Palermo	29.82	757.3	30.07	763.6	85.1	29.5	32	E	8.1	3.6			5			0	0		Prof. G. Ciacciatore.
Syracuse	30.00	762.0	30.04	763.1	81.1	27.3	52	SE	6.3	2.8			2	SW		0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.55	750.6	30.06	763.5	73.9	23.3	66	SW	0	0			3			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					70.4	21.3	83	N	1.9	0.8			10ck;s			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.52	749.8	29.72	754.9	63 0	18.3	95	ESE	5.4	2.4			10n			0.570	14.48	Raining	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.63	752.6	29.70	754.4	69.0	20.6	83	ESE	10.7	4.8			10s			0.030	0.76	Cloudy	The Staff.
Wakayama	29.69	754.1	29.74	755.4	70.1	21.2	85	S	2.8	1.3		7ck		NW		0.120	3.05	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.00	635.1	29.99	761.8	58.6	14.8	80	Calm			0		10n			0.91	23.0	Covered	Prof. L. Perez.
Guanaxuato	23.65	600.7			60.4	15.8	82	NE	2.2	1.0		10n	8kn	Calm	NE	0.13	3.4	Covered	Vicente Fernandez.
Leon	24.39	619.6	30.00	761.9	64.9	18.3	90	S			3		8kn			0.29	7.4	Threatening	Prof. M. Leal.
Mazatlan	29.65	753.2	29.91	759.8	77.5	25.4	84	SW			2		10ks		SW	0	0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.1	29.97	761.2	57.2	14.0	93	NW	0.7	0.3			10kn			0.38	9.7	Threatening	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.9	29.90	759.5	61.3	16.3	84	N			2		10n		NE	0.20	5.0	Covered	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.39	594.1	30.08	764.0	57.2	14.0	49	Calm	0	0		3ck	0	SW		0.68	17.3	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.2	30.13	765.2	59.0	15.0	68	E			1		10		E	0.09	2.4	Covered	G. Barroeta, M D.
Tlacotalpam	29.89	759.3	29.91	759.6	75.2	24.1	93	NW			1		10		NW	0.05	1.3	Overcast	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.59	573.7	30.19	766.8	58.6	12.0	92	NE			5		10n		NE	0.08	2.0	Foggy	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.11	764.7	30.11	764.7	73.2	22.9		E			4					0	0		
Groningen	30.16	766.0	30.21	767.4	72.1	22.3		ENE			4					0	0		
Helder	30.18	766.6	30.18	766.6	63.7	17.6		NE			4					0	0		
Hellevoetsluis	30.11	764.8	30.11	764.8	73.4	23.0	50	ENE			4					0	0		
Utrecht	30.09	764.3	30.14	765.5	76.3	24.6	42	ESE			4		5			0	0	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	30.25	768.3	30.30	769.7	68.7	20.4	47	NNW	14.8	6.6			3			0	0		
Brönö	30.15	765.7	30.19	766.7	50.0	10.0	91	W	18	8			10			1.142	29.0		
Christiania	30.08	764.1	30.22	767.6	79.5	26.4	29	SW	4	2			10			0	0		
Tromsö	29.87	758.6	29.92	760.0	46.0	7.8	71	W	9	4			10			0.220	5.6		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.11	764.8	30.32	770.1	69.8	21.0	94	W			2		6			0	0		Dr. J. A. Sampaio.
Campo Major	29.05	736.9	29.99	761.8	68.7	20.4	55	SW	3.8	1.7			4	WNW		0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.13	765.3	30.22	767.6	70.5	21.4	63	SE	3.4	1.4			9			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.76	755.6	30.11	764.7	64.9	18.3	53	NNW	16.1	7.2			2			0	0		The Staff.
Ponta Delgada (Azores)	30.25	768.3	30.32	770.1	73.8	23.2	74	SW	1.8	0.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.88	759.0	72.0	22.2		N			1		0			1	N		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			29.98	761.6	67.8	19.9		WNW			3		1			2	NW		Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.61	752.1	29.63	752.6	69.1	20.6	64	WNW	4	2			10						Capt. Sseliwerstow.
Astrakhan	30.02	762.4	29.93	760.3	60.6	15.9	53	N	16	7			5ks			Blank	Blank		Capt. Wisganow.
Barnaul	29.16	740.6	29.64	752.9	60.6	15.9	63	NE	2	1			10						Meteorological Obs.
Dorpat	29.96	760.9	30.19	766.8	75.9	24.4	35	W	7	3			1k						Prof. Dr. Weihrauch.
Ekaterinburg	28.86	733.0	29.20	757.0	58.6	14.8	30	NE	4	2			1k						Meteorological Obs.
Irkutsk																			
Kasan	29.68	753.8	29.94	760.5	66.9	19.4	34	NNW	2	1		1c							Physical Cabinet.
Kertch	29.95	760.6	29.97	761.1	67.3	19.6	57	ENE	11	5			1						Lagorio.
Kieff	29.53	750.0	30.15	765.9	63.7	17.6	43	E	5	2		6ck						Light clouds	Physical Cabinet.
Krotkowo*	29.59	751.5	30.05	763.3	62.1	16.7	36	N	7	3			7						Cand. Fatjanow.
Lugan	29.58	751.2	29.78	756.3	67.5	19.7	41	ENE	20	8			2						Meteorological Obs.
Moscow	29.65	753.0	30.18	766.5	70.3	21.3	41	NNW	7	3			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.98	761.5	30.05	763.3	75.2	24.0	34	ENE	22	10			2cs					Light clouds	Kurdakof.
Nikolaievsk, on the Amoor	29.93	760.1	30.01	762.3	47.3	8.5	89	Calm	0	0			8ns						
Nukuss	29.17	740.9	29.39	746.4	88.7	31.5	37	WNW	4.0	1.8			9k						
Orenburg																			
Pekin (China)	29.42	747.3	29.56	750.9	66.0	18.9	91	Calm	0	0									Physical Observatory.
St. Petersburg	30.06	763.4	30.07	763.8	67.3	19.6	56	WNW	22	10		ck	6cs						Central Physical Obs.
Tashkend	28.05	712.5	29.50	749.3	87.8	31.0	50	Calm	0	0			0						Teich, A. M.
Tiflis	28.34	719.8	29.68	753.8	78.1	25.6	47	NW	18	8			3s						Physical Observatory.
Vladivostock																			
Warsaw	29.76	755.8	30.17	766.3	64.4	18.0	72	ESE	11	5			10ks						Astronomical Obs.
Wilna	29.86	758.4	30.27	768.9	69.8	21.0	41	ESE	2	1			2						Astronomical Obs.
Yeniseisk	29.59	751.6	29.87	758.7	62.2	16.8	45	N	4	2			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.94	760.4	30.04	763.1	71.1	21.7	66	ESE	4.5	2.03			1			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	30.00	761.9	30.05	763.3	71.6	22.0	63	NW	1.4	0.65		2	3	SW		0.039	1.0	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.68	657.9			56.5	13.6	80	SE	6.6	2.93			10			0.236	6.0	Covered	Domingo Martin y Perez.
Madrid, Royal Observatory	27.78	705.6	29.91	759.6	79.5	26.4	41	SW	4.5	2.00		0	5			0.110	2.8	Cloudy	The Staff.
Murcia, Met. Obs'y	29.87	758.7	30.02	762.4	79.7	26.5	56	ESE	2.4	1.08		3	5	SE		0	0	Cloudy	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.12	739.6	30.00	762.1	62.2	16.8	68	NNW	11.2	5.0			10			0	0	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.94	760.5	30.01	762.2	84.5	29.2	74	ENE	1.1	0.5		0	0			0	0	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands.	29.84	758.0	29.89	759.3	85.5	29.7	79	SW	6.6	3.0		4ck	3k	E	W	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.00	762.0	30.10	764.5	70.0	21.1	62	S	9.6	4.3		0	7		SSW	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.96	760.9	30.05	763.2	81.3	27.4	77	E	6.9	3.10		2s	3k		E	0.246	6.25	Clear	Enriquetadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.78	756.3	29.82	757.3	63.0	17.2		N			4		7			0	0		
Umea	29.97	761.2	30.02	762.5	66.6	19.2	53	NW			7		10			0.028	0.7		
Hernosand	30.09	764.3	30.14	765.6	67.3	19.6	53	W			6		10			0	0		
Stockholm	30.03	762.8	30.21	767.3	78.8	26.0	26	SW			2		8			0	0		
Wisby	30.25	768.3	30.31	769.8	63.0	17.2	48	NNW			2		0			0	0		
Sub-Series.																			
Upsala	30.07	763.8	30.16	766.0	79.2	26.2	26	WSW	5.8	2.6			10			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	
Barque Australia				J. P. Pahlson.
H. M. Corvette Balder				Capt. A. C. Schonmeyr.
Saga				M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.62	727.0	30.01	762.3	66.2	19.0	61	NNE			2		7			0.295	7.5	Cloudy.	The Observatory.
Zurich	28.44	722.3	30.01	762.3	73.4	23.0	60	N			1		3			0.307	7.8	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +0.4 mm.; Thermometer, —1.9 Cent. Relative Humidity, +6 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.87	758.7	77.7	25.4	63	NNW	19	8.5			8		NNW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			30.17	766.2	74.3	23.5		NW			3		0			0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.78	756.4	86.9	30.5	65	WSW			2		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					62.0	16.7		W	1	0.4		0	0			0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	29.99	761.7	30.05	763.3	61.5	16.4	61	N	4	1.8		10c	0	NW		0	0	Fair.	G. A. Blair.
Charlottetown, P. E. Island	29.97	761.2	30.02	762.5	59.2	15.1	70	Calm	0	0		0	0			0	0	Clear	H. J. Cundall, C. E.
Cornwall, Ontario	29.91	759.7	30.10	764.5	62.2	16.8	77	SW			1	0	0			0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.89	759.2	30.05	763.3	63.5	17.5	70	W			1	1cs	0			0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.07	763.8	30.09	764.3	56.0	13.3	71	SW	2	0.9		1c	0	Calm		0	0	Clear.	J. McWilliams.
Fredericton, N. B.	30.02	762.5	30.08	764.0	63.0	17.2	41	NW	2	0.9		0	0			0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.30	744.2	30.11	764.8	58.0	14.4	98	Calm	0	0			Fog			0.030	0.76	Foggy	James Stewart.
Granton, Ontario	29.12	739.6	30.19	766.8	62.0	16.7	89	Calm			0	0	0			0	0	Clear	James Grant.
Halifax, N. S.	29.94	760.5	30.07	763.8	65.3	18.5	47	SW	7	3.1		0	0			0	0	Clear	A. Allison.
Hamilton, Ontario	29.78	756.4	30.17	766.3	64.1	17.8	73	W			1	0	0			0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.80	756.9	30.13	765.3	65.6	18.7	77	NE	3	1.3		0	0			0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.95	760.7	29.99	761.7	67.2	19.6	41	W	9	4.0		3k	0	W		0	0	Fair.	C. H. Rigby.
Montreal, Quebec	29.93	760.2	30.12	765.0	67.2	19.6	49	N	4	1.8		2c;cs	0			0	0	Clear.	C. H. McLeod, C. E.
Moose Factory, Ontario	30.29	769.4	30.32	770.1	67.5	19.7	49	SW			1	2c	0	SE		0	0	Clear.	J. R. Nason.
Norwood, Ontario	29.44	747.8	30.11	764.8	68.8	20.4	48	NE	2	0.9		0	0			0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.50	749.3	30.18	766.6	67.0	19.4	62	E	1	0.4		0	0			0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.48	747.5	30.15	765.8	71.7	22.1	76	W			1	0	0			0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.61	749.5	30.19	766.8	62.1	16.7	88	NW	3	1.3		0	0			Inap.	Inap.	Clear.	H. Morgan.
Port Stanley, Ontario	29.55	750.6	30.18	766.6	64.0	17.8	66	N	4	1.8		0	0			0	0	Clear.	M. Payne.
Quebec, Quebec	29.81	757.2	30.13	765.3	56.0	13.3	81	W			3	0	Haze			0	0	Hazy	Capt. Ashe, R. N.
Rockliffe, Ontario	29.75	755.6	30.20	767.1	55.0	12.8	68	W	3	1.3		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.88	758.9	30.05	763.3	62.0	16.7	51	N	5	2.2		0	0			0	0	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.50	749.3	30.20	767.1	61.1	16.2	72	SW	4	1.8		0	0			0	0	Clear.	K. Stewart.
Stratford, Ontario	28.93	734.8	30.19	766.8	61.9	16.6	68	NW	3	1.3		0	0			0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.95	760.7	29.99	761.7	68.0	20.0	88	W	11	4.9		0	0			0	0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.81	757.2	30.18	766.6	66.5	19.2	53	N	12	5.4		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	29.13	739.9	30.16	766.1	68.2	20.1	52	NW	5	2.2		0	0			0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	29.99	761.7	30.06	763.5	56.4	13.6	77	SW	3	1.3		0	0			0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.60	751.8	29.85	758.1	43	6.1	92	E	3	1.3		0	2s			0	0	Fair.	John Delany.
St. Pierre, N. F., Hôpital Maritime			29.84	757.9	51.1	10.6		NW			3					0	0		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR.

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.07	763.8	30.15	765.8	69	20.6	56	N	6	2.7		0	0			0	0	Clear	
Alpena, Michigan	29.57	751.1	30.20	767.1	64	17.8	53	NW	9	4.0		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.93	734.8	30.05	763.3	63	17.2	52	NE	20	8.9		0	0			0	0	Clear	
Atlantic City, New Jersey	30.11	764.8	30.13	765.3	64	17.8	78	N	4	1.8		0	0			0	0	Clear	
Augusta, Georgia	29.90	759.4	30.10	764.5	69	20.6	61	N			2	0	0			0.19	4.8	Clear	
Baltimore, Maryland	30.10	764.5	30.14	765.5	70	21.1	70	N	2	0.9		0	Haze		Calm	0.01	0.3	Clear	
Barnegat, New Jersey	30.09	764.3	30.11	764.8	65	18.3	54	N	6	2.7		0	0			0	0	Clear	
Bismarck, Dakota	28.29	718.6	30.14	765.5	63	17.2	88	E	9	4.0			10s		Calm	0	0	Cloudy	
Boerne, Texas	28.64	727.4	29.91	759.7	73	22.8	95	E	4	1.8			10s		E	0	0	Cloudy	
Boise City, Idaho	27.12	688.8	30.06	764.0	54	12.2	49	SE	4	1.8		2c	0	NW		0	0	Fair	
Boston, Massachusetts	29.95	760.7	30.10	764.5	62	16.7	83	NE	6	2.7		Haze	5s	Calm	Calm	0.16	4.1	Fair	
Brackettville, Texas	28.91	734.3	29.92	760.0	75	23.9	77	E	2	0.9		2k	0	SE		0	0	Fair	
Breckenridge, Minnesota	29.15	740.4	30.13	765.3	62	16.7	88	S	6	2.7			10s		S	0	0	Cloudy	
Brownsville, Texas	29.99	761.7	30.03	762.7	80	26.7	70	Calm	0	0		8cs	0	Calm		0.32	8.1	Fair	
Buffalo, New York	29.47	748.5	30.16	766 1	63	17.2	67	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Burkes, Arizona					72	22.2	38	Calm			0	5ck	0	Calm		0	0	Fair	
Burlington, Vermont	29.85	758.2	30.14	765.5	62	16.7	61	W	1	0.4		8cs	0	W		0	0	Fair	
Cairo, Illinois	29.87	758.7	30.25	768.3	69	20.6	65	NE	10	4.5		0	0			0	0	Clear	
Campo, California	27.33	694.2	29.90	759.4	38	3.3	81	S	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	29.95	760.7	29.96	761.0	67	19.4	79	NE	36	16.1		Haze	5s	Calm	NE	1.13	28.7	Cloudy	
Cape Henry, Virginia	30.05	763.3	30.06	763.5	67	19.4	79	N	24	10.7		0	0			0.03	0.8	Clear	
Cape Lookout, N. Carolina	29.94	760.5	29.95	760.7	67	19.4	79	NE	34	15.2		10k	0	N		0.01	0.3	Cloudy	
Cape May, New Jersey	30.07	763.8	30.10	764.5	62	16.7	71	NE	6	2.7		0	0			0	0	Clear	
Castroville, Texas	29.29	744.0	29.97	761.2	79	26.1	74	Calm	0	0			10s		E	0	0	Cloudy	
Cedar Keys, Florida	29.91	759.7	29.94	760.5	75	23.9	68	N	10	4.5		0	0			2.33	59.2	Clear	
Charleston, South Carolina	29.94	760.5	29.99	761.7	66	18.9	79	NE	11	4.9		0	0			Inap.	Inap.	Clear	
Charlotte, North Carolina	29.25	742.9	30.05	763.3	66	18.9	59	N	10	4.5		0	0			0.04	1.0	Clear	
Chattanooga, Tennessee	29.33	745.0	30.12	765.0	64	17.8	68	NE	16	7.2		1k	0	N		0	0	Clear	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	55	12.8	74	SW	2	0.9		0	0			0	0	Clear	
Chicago, Illinois	29.55	750.6	30.23	767.8	66	18.9	64	N	2	0.9		2cs	0	Calm		0	0	Clear	
Chincoteague, Virginia	30.08	764.0	30.10	764.5	66	18.9	83	NE	20	8.9		0	0			0	0	Clear	
Cincinnati, Ohio	29.60	751.8	30.24	768.1	66	18.9	59	Calm	0	0		1c	Sm'e	Calm	Calm	0	0	Clear	
Cleveland, Ohio	29.50	749.3	30.21	767.3	65	18.3	63	N	5	2.2		0	0			0	0	Clear	
Coleman City, Texas	28.33	719.6	29.95	760.7	70	21.1	90	E	5	2.2			10s		Calm	0.07	1.8	Cloudy	
Columbus, Ohio	29.38	746.2	30.20	767.1	63	17.2	58	N	3	1.3		0	Haze		Calm	0	0	Clear	
Concho, Texas	28.20	716.3	29.83	757.7	69	20.6	95	E	8	3.6		2k	2s	S	E	0.14	3.6	Fair	
Corsicana, Texas	29.71	754.6	30.17	766.3	70	21.1	70	NE	4	1.8		1cs	0	Calm		0	0	Clear	
Davenport, Iowa	29.63	752.6	30.26	768.6	67	19.4	79	Calm	0	0		8cs	0	NW		0	0	Fair	
Dayton, Washington T'y					50	10.0	71	Calm			0	10c	0	W		0	0	Cloudy	
Deadwood, Dakota	25.46	646.7			58	14.4	77	SW	16	7.2			10s		Calm	0	0	Cloudy	
Decatur, Texas	29.00	736.6	30.14	765.5	70	21.1	75	SE	8	3.6		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.10	764.5	30.12	765.0	66	18.9	84	NE	3	1.3		5c	0	W		0.01	0.3	Clear	
Denison, Texas	29.40	746.7	30.19	766.6	67	19.4	89	E	1	0.4		0	0			0	0	Clear	
Denver, Colorado	24.83	630.7	30.05	763.3	59	15.0	76	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.37	746.0	30.23	767.8	71	21.7	62	Calm	0	0		0	2s		NW	0	0	Clear	
Detroit, Michigan	29.56	750.8	30.22	767.6	60	15.6	55	NE	4	1.8		0	0			0	0	Clear	
Dodge City, Kansas	27.54	699.5	29.78	756.4	62	16.7	83	SE	16	7.2		10cs	0	Calm		0	0	Cloudy	
Dubuque, Iowa	29.57	751.1	30.26	768.6	65	18.3	73	NE	1	0.4		8c	Haze	Calm	Calm	0	0	Fair	
Duluth, Minnesota	29.51	749.5	29.19	766.8	58	14.4	88	Calm	0	0		10k	0	W		0	0	Cloudy	
Eagle Pass, Texas	29.27	743.4	29.97	761.2	80	26.7	66	SE	2	0.9		0	0			0	0	Clear	
Eastport, Maine	29.98	761.5	30.04	763.0	59	15.0	54	NW	4	1.8		0	Haze		Calm	0	0	Dense haze	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.48	748.8	30.18	766.6	66	18.9	69	W	4	1.8		0	0			0	0	Clear	
Escanaba, Michigan	29.55	750.6	30.19	766.8	60	15.6	82	N	4	1.8		5c	0	W		0.02	0.5	Fair	
Florence, Arizona					70	21.1	44	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.05	636.3	30.50	774.7	58	14.4	42	SE	3	1.3		2ck	0	SE		0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.98	710.7	29.78	756.4	59	15.0	81	E	9	4.0		5cs	0	SW		0	0	Fair	
Fort Custer, Montana	26.82	681.2			59	15.0	81	SE	2	0.9		0	0			0	0	Clear	
Fort Davis, Texas	25.32	643.1	30.28	769 1	68	20.0	65	Calm	0	0		0	0			0	0	Clear	
Fort Elliot, Texas	27.09	688.1	29.27	743.4	62	16.7	72	SE	8	3 6			10s		SE	0	0	Cloudy	
Fort Gibson, Indian Ter	29.67	753.6	30.20	767.1	68	20.0	65	E	6	2.7		0	0			0	0	Clear	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	84	28.9	17	N	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.99	736.3	30.14	765.5	68	20.0	90	E	4	1.8		0	0			0	0	Clear	
Fort Keogh, Montana	27.22	691.4			63	17.2	78	SE	4	1.8		0	0			0	0	Clear	
Fort McKavett, Texas	27.86	707.6	29.72	754.9	72	22.2	80	E	5	2.2			10s			0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.96	735.6	30.05	763.3	66	18.9	89	E	4	1.8		5cs	0	Calm		0	0	Fair	
Fort Stevenson, Dakota	28.27	718.0			57	13.9	87	E	8	3.6			10ks		Calm	0	0	Cloudy	
Fort Verde, Arizona					60	15.6	34	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.03	762.7	30.07	763.8	75	23.9	68	NE	18	8.0		0	5s		NE	Inap.	Inap.	Fair	
Grand Haven, Michigan	29.58	751.3	30.22	767.6	66	18.9	54	S	2	0.9		0	0			0	0	Clear	
Helena, Montana					52	11.1	41	S	6	2.7		2cs	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.46	748.3	30.22	767.6	68	20.0	74	N	2	0.9		10c	0	N		0	0	Cloudy	
Indianola, Texas	30.04	763.0	30.07	763.8	81	27.2	83	NE	10	4.5		5k	0	Calm		0	0	Fair	
Jacksboro, Texas	29.02	737.1	30.01	762.2	70	21.1	70	E	8	3.6		0	0			0	0	Clear	
Jacksonville, Florida	29.90	759.4	29.92	760.0	79	26.1	74	SE	11	4.9		5k	0	NE		0.76	19.3	Fair	
Keokuk, Iowa	29.61	752.1	30.21	767.3	66	18.9	74	SE	1	0.4		1cs	5s	W	W	0	0	Fair	
Key West, Florida	29.96	761.0	29.99	761.7	83	28.3	71	SW	8	3.6		2k	0	SW		0	0	Fair	
Kittyhawk, North Carolina	29.99	761.7	30.01	762.2	66	18.9	84	NE	36	16.1		8k	0	NE		0.08	2.0	Cloudy	
Knoxville, Tennessee	29.18	741.1	30.16	766.1	65	18.3	56	NE	5	2.2		0	0			0	0	Clear	
La Crosse, Wisconsin	29.50	749.3	30.22	767.6	65	18.3	84	SW	7	3.1		0	0			0	0	Clear	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	69	20.6	47	Calm	0	0		0	2s		Calm	Inap.	Inap.	Fair	
Laredo, Texas	29.60	751.8	29.93	760.2	78	25.6	82	Calm	0	0		0	2s		SE	Inap.	Inap.	Fair	
Leavenworth, Kansas	29.38	746.2	30.20	767.1	66	18.9	69	E	1	0.4		1cs	0	W		0	0	Clear	
Lewiston, Idaho	29.19	741.4	29.82	757 4	59	15.0	48	E	1	0.4			10s		Calm	0	0	Cloudy	
Little Rock, Arkansas	29.85	758.2	30.16	766.1	68	20.0	70	NE	6	2.7		0	0			0	0	Clear	
Los Angeles, California	29.55	750.6	29.88	758.9	56	13.3	81	N	3	1.3		0	0			0	0	Clear	
Louisville, Kentucky	29.65	753.1	30.20	767.1	66	18.9	64	N	7	3.1		2c	0	Calm		0	0	Clear	
Lynchburg, Virginia	29.46	748.3	30.13	765.3	66	18.9	74	Calm	0	0		0	0			0.25	6.3	Clear	
Madison, Wisconsin	29.26	743.2	30.23	767.8	64	17.8	83	S	3	1.3		8c	0	NW		0	0	Fair	
Marquette, Michigan	29.50	749.3	30.20	767.1	57	13.9	69	NW	2	0.9		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.46	722.9	30.16	766.1	76	24.4	77	E	6	2.7			10s		E	0	0	Cloudy	
Memphis, Tennessee	29.80	756.9	30.14	765.5	68	20.0	65	NE	8	3.6		0	0			0	0	Clear	
Milwaukee, Wisconsin	29.51	749.5	30.23	767.8	66	18.9	69	NW	6	2.7		5c	0	Calm		0	0	Fair	
Mobile, Alabama	30.01	762.2	30.05	763.3	68	20.0	74	N	9	4.0		0	0			0	0	Clear	
Montgomery, Alabama	29.84	757.9	30.07	763.8	68	20.0	69	N	10	4.5		0	0			0	0	Clear	
Morgantown, West Virginia	29.20	741.7	30.18	766.6	60	15.6	82	Calm	0	0		0	Fog		Calm	0.03	0.8	Clear	
Mt Washington, N. H.	23.96	608.6	30.32	770.1	41	5.0	48	N	18	8.0		2k	Sm'e	N	N	0.06	1.5	Clear	
Nashville, Tennessee	29.68	753.9	30.20	767.1	71	21.7	53	NE	6	2.7		0	0			0	0	Clear	
New Haven, Connecticut	30.00	762.0	30.11	764.8	68	20.0	60	NE	9	4.0		0	0			0	0	Clear	
New London, Connecticut	30.07	763.8	30.12	765.0	66	18.9	64	N	4	1.8		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	30.01	762.2	30.07	763.8	73	22.8	59	E	14	6.3		1c	0	Calm		0	0	Clear	
Newport, Rhode Island	30.04	763.0	30.08	764.0	65	18.3	63	NW	8	3.6		0	0			0	0	Clear	
New River, North Carolina					63	17.2	78	N			2		10ks		N			Cloudy	
New York, New York	29.95	760.7	30.12	765.0	66	18.9	64	NW	4	1.8		0	Haze		Calm	0	0	Clear	
Norfolk, Virginia	30.02	762.5	30.07	763.8	67	19.4	60	NE	13	5.8		0	0			Inap.	Inap.	Clear	
North Platte, Nebraska	27.19	690.1	29.72	754.9	57	13.9	84	SE	7	3.1		0	0			0.04	1.0	Clear	
Olympia, Washington Ter.	30.03	762.7	30.07	763.8	45.0	7.2	88	SW	2	0.9			10s		S	0.16	4.1	Cloudy	
Omaha, Nebraska	29.06	738.1	30.13	765.3	68	20.0	67	SE	4	1.8		10k	0	NW		0	0	Cloudy	
Oswego, New York	29.84	757.9	30.16	766.1	62	16.7	77	S	3	1.3		0	0			0	0	Clear	
Pembina, Dakota	29.25	742.9	30.06	763.5	57	13.9	94	W	2	0.9		0	0			0.23	5.8	Clear	
Pensacola, Florida	30.00	762.0	30.03	762.7	72	22.2	62	N	8	3.6		0	0			0	0	Clear	
Philadelphia, Pennsylvania	30.07	763.8	30.12	765.0	62	16.7	77	NE	5	2.2		0	Haze		Calm	0	0	Clear	
Phœnix, Arizona	28.66	728.0	30.35	770.9	82	27.8	49	E	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	18.04	458.2	30.25	768.3	38	3.3	45	SW	24	10.7		2cs	0	Calm		0	0	Clear	
Pilot Point, Texas	29.39	746.5	30.22	767.6	68	20.0	79	E	2	0.9		0	0			0	0	Clear	
Pioche, Nevada	24.07	611.4	29.84	757.9	54	12.2	21	SW	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.38	746.2	30.19	766.8	58	14.4	82	NW	5	2.2		0	Fog			0	0	Clearing	
Port Huron, Michigan	29.54	750.3	30.20	767.1	63	17.2	47	N	4	1.8		0	0			0	0	Clear	
Portland, Maine	30.04	763.0	30.09	764.3	63	17.2	62	N	1	0.4		0	Haze			0	0	Clear	
Portland, Oregon	30.04	763.0	30.11	764.8	52	11.1	73	NW	4	1.8			10s		SW	0	0	Cloudy	
Portsmouth, North Carolina					69	20.6	70	NE	40	17.9		10k	0	NE		0.32	8.1	Cloudy	
Prescott, Arizona	24.78	629.4	30.14	765.5	53	11.7	31	S	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	29.92	760.0	29.93	760.2	79	26.1	78	W	8	3.6			10s		W	0	0	Threatening	
Red Bluff, California	29.55	750.6	29.90	759.4	63.5	17.5	50	NW	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas					78	25.6	91	S			1	2c	0	Calm		0.21	5.3	Fair	
Rochester, New York	29.53	750.0	30.13	765.3	64	17.8	68	W	6	2.7		0	0			0	0	Clear	
Roseburg, Oregon	29.52	749.8	30.09	764.3	54	12.2	80	N	1	0.4			10s		Calm	0	0	Cloudy	
Sacramento, California	29.80	756.9	29.88	758.9	57	13.9	78	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.68	753.9	30.24	768.1	65	18.3	68	NE	6	2.7		5ck	0	W		0	0	Fair	
St. Paul, Minnesota	29.56	745.7	30.17	766.3	64	17.8	83	E	2	0.9		5ck	0	NW		0	0	Fair	
Salt Lake City, Utah	25.61	650.5	29.94	760.5	64	17.8	30	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.40	746.7	30.07	763.8	77	25.0	82	NE	2	0.9			8ks		Calm	0	0	Fair	
San Diego, California	29.82	757.4	29.80	759.2	58	14.4	94	N	5	2.2			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	29.56	750.8	30.22	767.6	66	18.9	64	N	6	2.7		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.08	764.0	30.11	764.8	69	20.6	61	NW	6	2.7		0	0			0	0	Clear	
San Francisco, California	29.90	759.4	29.97	761.2	50	10.0	93	SW	11	4.9			Fog		SW	0	0	Foggy	
Santa Fé, New Mexico	23.41	594.6	29.95	760.7	64	17.8	53	E	7	3.1		0	8ks		E	0	0	Cloudy	
Savannah, Georgia	29.92	760.0	30.02	762.5	70	21.1	61	NE	14	6.3		5k	0	NE		0	0	Fair	
Shreveport, Louisiana	29.93	760.2	30.14	765.5	69	20.6	75	NE	4	1.8		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	29.95	760.7	29.99	761.7	66	18.9	74	N	16	7.2		5k	0	Calm		0.62	15.7	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.61	752.1	30.28	769.1	65	18.3	58	NE	2	0.9		1c	1s	W	W	0	0	Fair	
Springfield, Massachusetts	30.00	762.0	30.13	765.3	67	19.4	60	N	5	2.2		0	0			0.06	1.5	Clear	
Stockton, Texas	27.06	687.3	30.06	763.5	71	21.7	71	SE	4	1.8		0	0			0	0	Clear	
Thatcher's Island, Mass	30.05	763.3	30.10	764.5	62	16.7	100	NE	8	3.6		10cs	0	N		Inap.	Inap.	Cloudy	
Toledo, Ohio	29.55	750.6	30.23	767.8	65	18.3	58	NW	2	0.9		0	0			0	0	Clear	
Tucson, Arizona	27.40	696.0	29.95	760.7	81	27.2	22	SE	2	0.9		0	1s		Calm	0	0	Clear	
Umatilla, Oregon	29.70	754.4	30.19	766.8	54	12.2	74	NW	4	1.8		8cs	0	W		0	0	Cloudy	
Uvalde, Texas	29.18	741.1	29.96	761.0	78	25.6	73	SE	2	0.9		1c	0	Calm		0	0	Clear	
Vicksburg, Mississippi	29.89	759.2	30.04	763.0	69	20.6	75	NE	6	2.7		0	0			0	0	Clear	
Virginia City, Montana	24.29	617.0	29.77	756.1	50	10.0	58	Calm	0	0		2c	0	SW		0	0	Fair	
Visalia, California	29.47	748.5	29.83	757.7	59	15.0	59	W	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.03	762.7	30.14	765.5	66	18.9	74	N	2	0.9		0	Haze			0.03	0.8	Clear	
Wickenburg, Arizona					70	21.1	40	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.92	760.0	30.00	762.0	64	17.8	73	N	11	4.9		8ck	0	Calm		0.53	13.5	Fair	
Winnemucca, Nevada	25.63	651.0	29.99	761.7	40	4.4	89	SW	8	3.6		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.04	763.0	30.07	763.8	65	18.3	73	SW	9	4.0		0	0			0	0	Clear	
Yankton, Dakota	28.90	734.0	30.17	766.3	64	17.8	83	SE	4	1.8		0	0			0	0	Clear	
Yuma, Arizona	29.57	751.1	29.71	754.6	75	23.9	48	Calm	0	0		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.00	558.8			54.5	12.5	72	Calm	0	0			10ks			0	0	Cloudy	Thomas Herran.
‖ Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	82	27.8	78	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	29.97	761.2	29.98	761.5	80	26.7	79	Calm	0	0		2c	2cs		Calm	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.91	759.7	29.99	761.7	81	27.2	74	E	10	4.5		8ck	8s	SE	E	0.20	5.1	Threatening	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	80	26.7	82	E			3	5k	8ks	E		0.610	15.49	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.39	746.5	29.95	760.7	75	23.9	89	Calm			0		10ks			0.58	14.7		Francesco J. Cisneros.
‖ Rivas, Nicaragua					75	24		SE					4k		SE	0	0	Cloudy	Earl Flint.
Santiago de Cuba, W. I.	29.99	761.7	30.01	762.2	83	28.3	70	SE	4.8	2.1		0	2s			0.280	7.11		Robert Mason.
St. Thomas, W. I.																			G. O. Gellich.
York Factory, B. A.	29.87	758.7	29.92	760.0	59.0	15.0	91	SW	11	4.9		2k	2s	SW	S	0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,208 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,888.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,835.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.07	763.8	68	20.0	74	N	6	2.7			0							Clear	
§Navy Yard, Portsmouth, N. H.	30.00	762.0	62	16.7	77	Calm	0	0			0			0.1	3.			Clear	
Naval Hospital, Yokohama, Japan	29.68	753.9	70.5	21.4	92	E			3	ck	7ks		SE	0.02	0.5			Cloudy	
§Adams, Payta, Peru	29.96	761.0	67	19.4	89	SE			1		10		SE					Cloudy	
§Alaska, Callao, Peru*	29.90	759.4	63	17.2	83	SSE			2		10					Long	SW	Cloudy	
§Alert, Yokohama, Japan	29.57	751.1	75	23.9	81	SSE			1		8		SSE			Smooth		Cloudy	
§Alliance, St Pierre, Newfoundland	29.89	759.2	54	12.2	49	NNW			2		5		NNW	0	0	Smooth		Fair	
§Ashuelot, Nankin, Yangtzekiang, China	29.61	752.1	78	25.6	82	WNW			1		10		Calm	0	0	None		Cloudy	
§Colorado, New York, N. Y.	30.07	763.8	66	18.9	59	NW	1	0.4			0							Hazy	
§Constellation, Annapolis Roads, Md.	30.00	762.0	67	19.4	84	N			2		0					Smooth		Clear	
§Constitution, New York, N. Y.	30.10	764.5	66	18.9	68	N	5	2.2			1		Calm					Clear	
§Franklin, Off Navy Yard, Norfolk, Va	29.97	761.2	67	19.4	79	NNE	14.4	6.4			0			0	0			Clear	
§Independence, Mare Isl'd, Navy Yard, Cal.	29.98	761.5	57	13.9	100	SW	2.4	1.1			0			0	0			Clear	
§Jamestown, Sitka, Alaska*	29.97	761.2	50	10.0	93	W			1		8		W			Smooth		Cloudy	
§Kearsarge, Boston, Mass.	30.04	763.0	61	16.1	82	NW			2		2		NW			Smooth		Fair	
§Lackawana, N. 10° 45′, W. 86° 07′	29.98	761.5	81	27.2	87	SE			2		8		SE			Smooth	SE	Fair	
§Marion, Port Stanley, Falkland I'ds	29.27	743.4	42	5.6	91	NNW			3		10			Blank	Blank	Smooth		Cloudy	
§Michigan, Erie, Pa.	30.18	766.6	65	18.3	89	WNW			1		0							Clear	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.09	764.3	66	18.9	89	NW			1		0							Misty	
§Monocacy, Chefoo, China	29.59	751.6	74	23.3	81	SSW			2		10							Overcast	
§New Hampshire, Port Royal, S. C.	29.98	761.5	69	20.6	75	NE	24	10.7			8		N	0	0			Cloudy	
Nipsic, N. 42° 50′, E. 10° 23′	30.10	764.5	72	22.2	76	S			3		2					Smooth		D. clouds	
§Onward, Chimbote, Peru	29.93	760.2	63	17.2	89	ESE			1		8		NW			Long	W	Fair	
§Palos, Shanghai, China	29.67	753.6	70	21.1	100	SSE			1		10							Rainy	
§Passaic, Washington, D. C.	30.15	765.8	64	17.8	89	N			1		0			0	0			Clear	
§Pensacola, N. 40° 06′, W. 124° 28′	29.94	760.5	53	11.7	80	SW			4		2		NW			Mod'ate	NW	Clear.	
§Portsmouth, Fayal, Azore Islands	30.26	768.6	69	20.6	85	SW			3		10					Smooth		Cloudy	
§Powhatan, New York, N. Y.	30.12	765.0	63	17.2	78	NNE			2		0							Clear	
§Quinnebaug, N. 54° 59′, E. 5° 30′	30.29	769.4	57	13.9	81	NE			3		0					Mod'ate	NE	Clear	
§Richmond, N. 33° 50′, E. 131° 46′	29.77	756.1	70	21.1	90	SE			2		10		SE					Rainy	
Rio Bravo, Brownsville, Texas	30.19	766.8	75	23.9	100	NE	2	0.9			8		Calm	0	0			Fair	
§Saratoga. N. 36° 02′, W. 3° 13′	30.08	764.0	71	21.7	95	N			2		2		N	0	0	Smooth		Misty	
§Shenandoah, Buenos Ayres, Argentine Republic.	30.05	763.3	55	12.8	74	NNW			4		0					Smooth		Clear	
§St. Louis, League Island, Pa.	30.09	764.3	64	17.8	59	Calm	0	0			0			0	0			Clear	
Swatara, Hong-Kong, China	29.70	754.4	84	28.9	87	NE			1		10		Calm			Smooth		Cloudy	
§Tennessee, New York, N. Y.	30.14	765.5	71	21.7	60	NNE			1									Hazy	
§Ticonderoga, Nagasaki, Japan	29.76	755.9	68	20.0	100	E			1		10		E			Smooth		Rainy	
§Trenton, Gibraltar, Mediterranean	30.05	763.3	74	23.3	72	Calm			0		0			0	0	None		Clear	
§Vandalia, Holme's Hole, Mass.	30.08	764.0	66	18.9	74	WSW			1		1		Calm					Clear	
§Wabash, Boston, Mass.	30.10	764.5	62	16.7	72	NNW	5	2.2			2			0.21	5.3			Fair	
§Wachusett, S. 34° 09′, W. 75° 08′	30.02	762.5	58	14.4	100	NNW			3		8		N;W	0	0	Long	SW	Cloudy	
Wyoming, N. 41° 09′, E. 4° 10′	30.04	763.0	73	22.8	59	ESE			2		0					Smooth	SE	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer. N. 51° 28', W. 9° 00'	30.11	764.8	58	14.4		ENE			3		2		E			Smooth	E	Hazy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent. Liverpool, Eng	30.11	764.8	68	20.0	84	E			5		8		E	Mod'ate	Mod'ate			Cloudy	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 47° 56', W. 27° 10'....*†	29.81	757.2	65	18.3	78	SSW			5		10		NW	10h'rs	10h'rs	Mod'ate	SSW	Raining	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger. N. 28° 22', W. 107° 23'....†	29.76	755.9	76	24.4	95	S			3		8		S	0	0	Gentle	SW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains. N. 40° 19', W. 69° 00'	29.86	758.4	68	20.0	74	NNE			1		2		NE	0	0	Smooth		Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch. N. 50° 36', E. 1° 03'	30.09	764.3	64	17.8	78	E			4		2		E	0	0	Mod'ate	E	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer. N. 41° 31', W. 154° 15'....†	30.41	772.4	64	17.8	94	E			4		2		E			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 29° 30', E. 127° 32'....†	29.70	754.4	74	23.3	90	W			3		8		SW	Heavy	Heavy	Mod'ate	SW	Misty	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lachlan. Portland, Oregon....†	30.15	765.8	50	10.0	93	W			5		2ks		WNW					Clear	J. M. Lachlan.
S. S. Oregon, E. Polemann. N. 43° 55', W. 124° 17'....†	30.07	763.8	53	11.7		NNW			1		5s		NNW			Smooth	NW	Fair	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander. N. 34° 11', W. 119° 24'....†	29.94	760.5	60	15.6		N			2		5		N			Heavy	W	Fair	
§ S. S. Idaho, E. Alexander																			
S. S. Orizaba, C. B. Johnson																			
§ S. S. State of California, G. Dabney. San Francisco, Cal....†	29.93	760.2	45	7.2		W			2		5		W					Fair	Harrison & Marshall.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—Continued.

Reported to the Office of the Chief Signal Officer of the Army.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, La Union, San Salvador.....†	29.82	757.4	82	27.8	87	NNE			1		2		NE			Light	SSW	Clear.....	F. A. Johnston.
§ S. S. Australia, S. 33° 50′. E. 152° 47′.....†	30.06	763.5				SW			4		8					High	SW	Cloudy.....	Banneman.
§ S. S. China, W. B. Seabury.																			J. M. Lacklan.
§ S. S. City of Chester, J. M. Lacklan																			
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30.01	762.2	49	9.4	100	SSW			3		0							Clear.....	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 15° 56′ W. 98° 00′...†	29.93	760.2	81	27.2	87	NW			2		2		NW	0	0	Mod'ate	S	Clear.....	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.70	754.4	72	22.2	90	SSE			2		8		E	0	0			Cloudy.....	
§ S. S. City of Sidney, H.C. Dearborn, San Francisco, Cal....*†	29.83	758.9	54	12.2		W			2		2		NW	0	0	Smooth		Blue sky.....	E. LeSack. F. S. Doane.
§ S.S. City of Tokio, J. Maury																			
§ S. S. Colima, R. R. Searle, N. 14° 40′, W. 94° 19′.... †	29.97	761.2	84	28.4	100	E			1		8		Calm	0.01	0.3	Smooth	SE	Fair.....	
§ S.S. Dakota, H. G. Morse.																			C. T. Rode.
§ S.S. Granada, J. M Cavarly																			
§ S. S. Idaho, E. Alexander, Nanaimo, Vancouver Id .†	30.24	768.1	62	16.7		Calm			0		0			0	0			Fair.....	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, N. 10° 19′, W. 162° 12′.....	29.88	758.9	79	26.1		Calm			0		2		Calm			Long	SE	Fine.....	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 45° 40′, W. 27° 25′.....†	29.82	757.4	62	16.7		WSW			3		10		W			Mod'ate	W	Heavy rain..	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imric & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 50° 00′, W. 21° 50′.....†	29.90	759.4	57	13.9	??	SSE			5		Mist			4 h'rs	4 h'rs	Mod'ate	S	Overcast.....	J. Jones.
S. S. Britanic, H. Perry.....																			
S. S. Celtic, B. Gleadell.....																			G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	29.85	758.2	80	26.7		NE			6		2		NE	1.25	31.7			Clearing.....	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.....	30.04	763.0				NNE					0							Clear.....	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 27° 24′, W. 70° 27′.....†	30.02	762.5	84	28.9		S			5		2		SSW	0	0	Mod'ate Cross	S;W	Clear.....	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 6° 40′, W. 26° 16′.....*†	30.01	762.2	81	27.2		SSE			1		2		SSE			Smooth	SSE	Fair.....	B. F. Woodbury.
Schr. Della Hodgkins, N. 52° 56′, W 52° 52′.....†	29.76	755.9				N			3		2		N					Clear.....	S. S. Miner.
Brigantine George, W. H Champlin..																			
Iron Cross, W. Randall, N. 24° 06′, W. 83° 00′.....	30.04	763.0	82	27.8	83	SW			1-2		3			0	0	Smooth		D. clouds.....	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	30.05	763.3	65	18.3	63	NW			3		5		WNW	0	0			Fine.....	James S. Garvin.

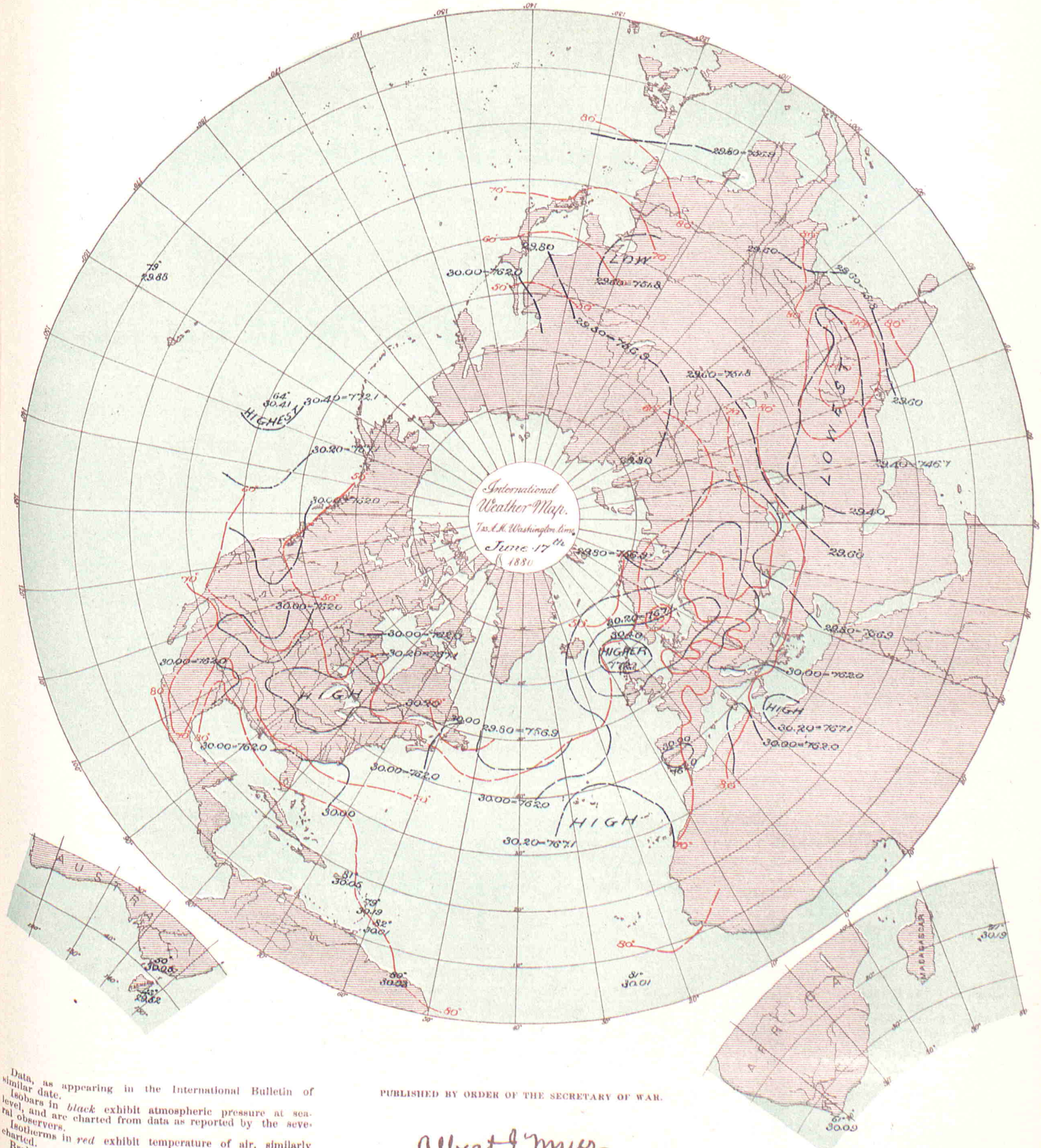
Note.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

Collated at the Office of the Chief Signal Officer of the Army, Washington, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

W. B. HAZEN,
CHIEF SIGNAL OFFICER.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 18, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:40 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:30 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.07	763.6	70.5	20.4	69	WNW			3		10			0	0	Covered	Metge.
Nemours			30.04	762.9	68.4	20.0	63	WSW			3		0			0	0	Clear	Nicolas.
Algiers			30.01	762.3	73.2	22.9	84	NNW			2		9			0	0	Very cloudy	Fonfrède.
La Calle			29.95	760.7															Jacques.
Tunis			30.06	763.5															Gau.
Sfax			30.06	763.5															Charon.
Saida			29.96	760.9	92.5	33.6	85	ESE			1		9			Inap.	Inap.	Very cloudy	Watrin.
Tebessa			30.04	763.1	85.1	29.5	85	NW			2		0			0	0	Clear	Lonchamp.
Geriville			29.99	761.8	95.7	35.4	17	S			5		9			0	0	Very cloudy	Herlin.
Laghouat			29.93	760.2	86.7	30.4	58	NW			3		10			0	0	Covered	Baudasse.
Biskra																			

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.38	746.3	29.91	759.6	78.4	25.8	58	SE			3		5			0.016	0.4	Thunder storm.	Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.28	743.6	30.02	762.6	68.7	20.4	63	SSW	3.1	1.4			10			0	0		Dr. Wierzbicki.
Eperies	29.08	738.5	29.91	759.7	77.7	25.4	53	SE			2		7cs;s			0	0		Julius Mikolik.
Gratz	28.73	729.8	29.95	760.7	65.3	18.5	82	W			2		10			0	0		Andreas Rospini.
Hermannstadt	28.54	725.0	29.93	760.2	68 2	20.1	76	S			2		6			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.41	726.8	29.93	760.2	61.0	16.1	90	Calm			0		10			0	0		The Staff.
Lemberg	28.97	735.8	29.92	760.0	68.5	20.3	62	S			2		0			0	0		Dr. T. Stanecki.
Pola	29.86	758.4	29.97	761.1	78.4	25.8	59	SSE			1		4			0	0		I.R. Hydrographic Office.
Szathmar	29.50	749.4	29.95	760.7	77.0	25.0	54	SE			3		3			0	0		Pet. Pancsics, S. J.
Szegedin	29.03	752.5	29.89	759.3	72.7	22.6	68	W			2		6			0	0		Karl Stancel.
Trieste	29.89	759.3	30.00	761.9	77.9	25.5	72	WSW			1		4			0	0		P. Busin.
Vienna	29.26	743.3	30.00	762.1	71.2	21.8	60	NE			1		8			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.72	755.0	29.92	759.9	74.8	23.8	42	E			2	0	6		SSE	0	0		Royal Observatory.
Furnes	29.93	760.3	29.96	760.9	77.5	25.3	49	SE			2		4			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 20 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	30.04	763.0	30.14	765.5	61.0	16.1		NE	22	9.8			4			0.030	0.76	Blue sky	W. Boswell.
Ardrossan	30.05	763.3	30.07	763.8	71	21.7		NE			3		3					Blue sky	G.Carrick.
Armagh, (Observatory)	29.82	757.4	30.05	763.3	68.1	20.1		ESE	9	4.0			1					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.98	761.5	71.5	21.9		E	15	6.7			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.47	748.5	29.98	761.5	69.3	20.7		E	26	11.6			3					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.61	752.1	30.00	762.0	60.2	15.7	71	SE			2		4			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	83	28.3		NE			3		6					Gloomy	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.88	758.9	29.98	761.5	72.9	22.7		E			1		1					D. clouds	H. Todd.
Cardington			29.96	761.0	72.0	22.2		E			1		5					D. clouds	John McLaren.
Chatham (School M. E.)	29.84	757.9	29.97	761.2	66.0	18.9		E			1		3ks					D. clouds	Lance Crp'l Hocker,R.E
Donaghadee	30.03	762.7	30.07	763.8	66	18.9		NNE			2		5					D. clouds	J. Mac Gowan.
Dover	29.91	759.7	29.94	760.5	66	18.9		NE			3		3					¾ clouded	J. Costello.
Falmouth (Observatory)	29.72	754.9	29.94	760.5	59.3	15.2		ESE			2		10					Foggy	The Staff.
Fort Napier, Natal	28.03	711.9	30.24	768.1	56.4	13.6		SW			0		10					Overcast	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.68	753.9	29.91	759.7	88	31.1		E			1		10					D. clouds	
Galway (Queen's College)			29.90	759.4	73	22.8		E			2		6					D. clouds	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.03	762.7	30.08	764.0	69.6	20.9		SW			5		6					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.88	758.9	30.09	764.3	66.9	19.4		ENE			2		0					Blue sky	D. G. Maclean.
Great Yarmouth	30.02	762.5	30.03	762.7	59	15.0		NE			3		3					Foggy	G. T. Watson.
Greenwich (Royal Obs'y)	29.78	756.4	29.94	760.5	74.1	23.4		ENE			1		3					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.68	753.9	29.90	759.4	60.5	15.8		ESE			1		3					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.11	764.8	30.22	767.6	64	17.8		E			4		k			0	0	Gloomy	M. P. Moyle.
Holyhead	29.97	761.2	29.93	761.7	64	17.8		NNE			4		0					Blue sky	John Tilston.
Jersey	29.65	753.1	29.94	760.5	63.9	17.7		W			1		5					Gloomy	J. Fisher.
Kew (Observatory)	29.90	759.4	29.94	760.5	71.2	21.8		E	23	10.3			3					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.74	755.4	29.99	761.7	68.8	20.4		NE			1		1					D. clouds	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.78	756.4	29.85	758.2	78.2	25.7		S			3		4					D. clouds	A. King.
Nairn	30.08	764.0	30.17	766.3	61	16.1		ENE			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.02	762.5	85.2	29.6		SW			0		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.82	757.4	30.00	762.0	71.5	21.9		ENE			2	3c		E		0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.46	748.3	29.97	761.2	71.0	21.7		ENE			3		5					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.72	754.9	29.98	761.5	72	22.2		ENE			3		4					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.85	758.2	29.92	760.0	68.4	20.2		E			4		2					D. clouds	John Merrifield.
*Roche's Point	29.93	760.2	30.05	763.3	60	15.6		SE			4		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.78	756.4	29.94	760.5	61	16.1		SE			2		4					Misty	John C. Walker.
Sandwick Manse, Orkneys			30.22	767.6	62.2	16.8		E	11	4.9			10					Rain & hail	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.79	756.7	29.86	758.4	78.6	25.9		NE			2		8					Showery	Serg't W. H. Lyne.
Sheffield	28.77	756.1	30.04	763.0	69.0	20.6		ENE			2		2			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	30.00	762.0	30.03	762.7	70.9	21.6	55	E			4		0			0	0	Blue sky	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.03	762.7	69.0	20.6		ENE	13	5.8			5					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.74	755.4	29.95	760.7	70.6	21.4		NE			3		5					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	29.91	759.7	29.92	760.0	66	18.9		SE			4		6					D. clouds	W. Newcombe.
Valencia (Observatory)	29.87	758.7	29.90	759.4	68.6	20.3		ESE	20	8.9			6					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.35	770.9	30.39	771.9	59.5	15.3	72	NNW	5.8	2.6		0	1			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			30.12	765.0	42.0	5.6	80	S			2		10kn			0.50	12.7	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Se'tl'd			30.14	765.5	61.5	16.4		E			3		8k			0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	30.02	762.5	30.21	767.3	72.6	22.6	65	ESE	20.0	8.9		0	4		ESE	0.03	0.8	Squally	C. Meldrum.
Melbourne (Observatory)	30.08	764.0	30.17	766.3	49.5	9.7	69	S	17	7.6			10			0.24	6.1	Rain-squalls	R. L. J. Ellery.
Monach Lt-house, Hebrides			30.16	766.1	67	19.4		ESE			2	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			30.13	765.3				NE			2	0	4			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points: the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction frbm—	Observer.
H. M. S Alert			Capt.J.P. Maclear, R.N.
City of Agra			Capt. Thos. Young.
City of Cashmere			Capt. W. M. Grieve.
Barque Commewyne			Capt. Jas. Buchan.
Ship British Commodore			Capt. J. W. Thorne.
Barque Decapolis			Capt. T. M. Almond.
Barque Dochra			Capt. H. Spalding.
S. S. Ethiopia, N. 40° 30′, W. 69° 45′	2	SE	Capt. A. Campbell.
Barque Fedalma			Capt. H. L. Fox.
Brig. Fylde			Capt. L. C. Dart.
S. S. German			Capt. C. D. Coxwell
S. S. Gordon Castle			Capt. Wm. Waring.
Barque Hope			Capt. Jas. Campbell.
Iron Cross, N. 24° 10′, W. 81° 05′	0		Capt. W. Randall.
Ship Lochee, S. 31° 00′, E. 37° 00′			Capt. J.Raeburn,R.N.R.
Barque Queen of Cambria, N. 41° 05′, W. 32° 42			Capt. M. Parry.
S. S. Richmond			Capt. W. H. Stuart.
Barque Royal Alexandra			Capt. W. P. Hughes.
S. S. Strathleven			Capt. C. W. Pearson.
S. S. Sunbeam			Capt. C. M. Dobson.
S. S. Wyberton, N. 34° 00′, E. 22° 28′			Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	70.7	21.5	78	NE			1	1d	8cs;ck			Inap.	Inap.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	30.03	762.7	30.08	763.9	68.4	20.2	51	Calm			0		1						
Faröe	30.06	763.5	30.08	764.0	71.8	22.1	52	W			2		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	30.01	762.3	30.06	763.4	68.0	20.0	57	S			2		5						
Thorshavn (Faröe)	30.23	767.7	30.26	768.6	56.1	13.4	83	Calm			0		0						
Vestervig	30.01	762.3	30.11	764.7	66.9	19.4	52	NW			2		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.39	746.5	29.94	760.5	72.3	22.4	64	ESE			1		5kn		ESE	0.012	0.3	Cloudy	Collignon, Director.
Amiens, Normal School	29.85	758.3	29.96	761.0	80.2	26.8	93	SW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.60	751.8	29.85	758.2	59.7	15.4	96					c	7kn	E		0.472	12.00		Klein, Commandant.
Avignon, Normal School	29.57	758.8	29.95	760.8	80.2	26.8	47	SE			1		0			0.08	2.	Very clear	Giraud, Director.
Bar-sur-Seine	29.39	746.4	29.93	760.2	69.4	20.8	71	NE			1		8kn		S	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.64	752.9	29.90	759.4	72.7	22.6	56	E			1		8		SE	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.09	738.9	29.95	760.6	73.8	23.2	60	E			1		2		SSE	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.73	755.2	29.93	760.2	60.3	15.7	93	W			1		10		WSW	0.217	5.5	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.04	737.6	30.01	762.2	75.2	24	66	S			2		5k	SW	SW	0.213	5.4	Cloudy	Marlot, Director.
Bourges, Normal School	29.40	746.8	29.93	760.2	74.1	23.4	58	E			2		n		E	0.177	4.5		M. Gence, Director.
Brest, Naval Observatory	29.67	753.6	29.91	759.7	64.4	18.0	74	Calm			0		9			0.295	7.50	Threatening	Ch. de Rermaree, Dir
Caen, Normal School	29.80	757.0	29.88	758.9	69.1	20.6	85	NE			1		k		E	0.028	0.70		M. Bietrix, Director.
Carcassonne, N. School	29.47	748.4	29.87	758.6	70.5	21.4	67	E			1		5		W	0	0	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch	29.42	747.2	29.76	756.0	75.0	23.9	61	SSE			1		5		E	0.098	2.5	Cloudy	Jadot, Director
Chartres, Normal School	29.35	745.6	29.89	759.2	77.0	25	58	SW			1		6		NE	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.57	725.6	29.86	758.5	74.3	23.5	40	SE			1		2			0.268	6.8		Alluard, Director.
Commercy, Normal School	29.10	739.0	29.93	760.2	69.1	20.6	71	NE			3		kn	NE	NE	0.031	0.8		Dr. Coullet, Director.
Commune de Gréasque*	28.80	733.7	30.03	762.7	77.0	25.0	42	SW			2		2		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.16	740.7	29.90	759.4	74.5	23.6	53	W			1		k		N	0.24	6.		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.76	755.9	29.97	761.3	62.6	17.0	88	NNW			1		10			0.197	5.0	Covered	Mouillot, Director.
Le Mans, Normal School	29.62	752.4	29.92	760.0	64.4	18	86	SSW			2		10		S	0.177	4.5	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. Schoo	29.04	737.6	29.91	759.7	73.6	23.1	63	W			1		2k		W			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.85	758.1	29.95	760.6	66.2	19.0	63	S			3		5		S	0	0	½ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.33	744.9	29.92	759.9	75.9	24.4	48	SE			1		kn			0.067	1.7		Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.72	754.8	29.98	761.5	73.0	22.8	53	SW			1		1		NE	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.89	733.8	29.90	759.4	70.5	21.4	72	SE			1		k		SE	0	0		Barbier, Director.
Mont-Louis	24.83	630.6	30.07	763.6	55.9	13.3	74	WSW	7.4	3.3			4		W	0.160	3.8		M. Cave, for Dr. Fines.
Nice	29.96	761.0	30.00	761.9	75.9	24.4	62	S			1		1	SW	S	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.75	755.7	29.95	760.8	78.3	25.7	55	S			1		2		E	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.84	757.8	29.94	760.4	66.6	19.2	77	S	9.4	4.2			9		SW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.52	572.1			40.5	4.7							10		SW	0.504	12.8	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.95	735.3	29.96	761.0	79.7	26.5	89	NW			1		5	NW	NW	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	25.16	639.0			54.9	12.7	72	SE			3		2		S	0.295	7.5		Alluard, Director.
Rochefort, Naval Obs'y	30.01	762.2	30.04	763.0	62.6	17.0	81	SW			1		10	SW	SW	0.55	14.	Raining	Lt. E. Devante, Director
Rouen, Normal School	29.80	757.0	29.89	759.2	75.4	24.1	52	SE			1		2		E	0.378	9.6	Slightly cl'dy	Platrier, Director.
Saint Malo (Port) Obs'y	29.86	758.5	29.89	759.3	63.0	17.2	78	NNE			1		8	NE	NE	0.049	1.25	Sprinkling	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.74	755.4	29.91	759.6	75.2	24.0	46	NE			1		6	S	SE	0	0		E. Renou, Director.
Tarbes, Normal School	28.89	733.8	29.95	760.7	62.6	17	80	W			1								T. Huguet, Director
Toulouse, Observatory	29.24	742.8	29.96	761.0	70.2	21.2	71	SSE			1		10			0.016	0.4	Covered	B. Bailland, Dir.
Tours	29.72	755.0	29.92	760.0	63.9	17.7	80	SW			1		10		S	0	0	Threatening	M. de Tastes.
Versailles, Observatory	29.42	747.2	29.91	759.7	77.7	25.4	44	NE			1					0.132	3.34		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.24	742.8	29.93	760.1	77.4	25.2	53	ESE			1		0			0.024	0.6	Clear	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.20	767.0	30.23	767.7	80.6	27										0.08	2.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.63	752.7			73.6	23.1	51	SSE			1		6		SW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.66	753.4	29.69	754.1	71.8	22.1	93	SSE	5.1	2.3		10ck		W		0.303	7.7	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,677 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.11	739.5	29.98	761.4	73.9	23.3	73	NE			4		4k	E		0	0		Prof. Dr. Hoh.
Berlin	29.88	758.9	30.04	763.1	74.5	23.6	49	E			1		7			0	0		Prof. Dr. Arndt.
Breslau	29.54	750.3	30.07	763.8	71.6	22.0	49	ESE			2		5			0	0		Royal University Obs'y
Carlsruhe	29.51	749.6	29.92	760.0	73.4	23.0	67	SW			0		8	SE		0.146	3.7	Thunder-storm.	Albert Senz.
Cassel	29.41	747.0	30.02	762.6	75.6	24.2	64	NE			2		5	E		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.67	753.6	30.03	762.8	76.1	24.5	39	E			1		6			0	0		Physical Society.
Friedrichshafen	28.56	725.4	29.95	760.6	68.0	20.0	72	SW			2		3	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.00	762.0	30.08	763.9	72.5	22.4	59	ESE			3		5			0	0		Dr. Reinhold Kleeman.
Kiel	30.06	763.4	30.07	763.8	69.2	20.7	55	NE			4		1			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	29.98	761.6	30.07	763.6	72.1	22.3	53	NE			2		2	NE		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.63	752.7	30.04	763.0	71.2	21.8	56	ENE			2		6	ENE		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.83	757.6	30.06	763.4	73.6	23.1	49	NE			2		5k	NE		0.024	0.6		Dr. Assmann.
Memel	30.02	762.5	30.07	763.7	63.2	17.3	56	NW			4		6ks						Reinbrecht & Issermann.
Munich	28.17	715.6	30.04	762.9	68.2	20.1	63	Calm			0		7	SW		0.004	0.1		Dr. C. Lang.
Neufahrwasser	30.07	763.8	30.09	764.2	63.9	17.7	57	NNE			1		3			0	0		A. Lothes.
Neustadt (Palatinate)	29.41	747.0	29.94	760.4	75.0	23.9	55	NW			1		6	N		0	0		Reallehrer Dickmether.
Posen	29.79	756.6	30.07	763.7	70.5	21.4	54	NE			4		10			0.071	1.8		Prof. Dr. Magener.
Strassburg (in Alsace)	29.44	747.8	29.97	761.3	71.8	22.1	68	SE			2		5	S		0.111	2.83		Imp. University Observatory.
Stuttgart	29.00	736.6	29.86	758.4	71.2	21.8	57	N					4	W		0	0		Prof. Dr. Schoder.
Thorn	29.89	759.3	30.08	764.1	71.6	22.0	51	NE			2		6			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.49	723.7	30.07	763.8	72.9	22.7	56	ENE	1.8	0.8			9k		W	0	0		Reallehrer J. Hopfner.
Wustrow	30.08	764.1	30.11	764.8	70.5	21.4	46	NE			2		4s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.54	750.3	29.91	759.7	86.0	30.0		SW			2.5		k					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.55	750.6	29.60	751.9	84.3	29.1	87	SSW	42.4	19.0			3	ESE	W	0	0	Misty	
Deesa	29.12	739.7	29.58	751.3	94.0	34.4	42	SW	27.8	12.4			1	SW		0	0	D. clouds	
Bombay	29.75	755.6	29.79	756.6	87.0	30.6	70	W	14.0	6.3			4		WSW	0.02	0.5	D. clouds	
Poona (Yarrowda)	27.93	709.5	29.77	756.2	82.0	27.8	58	W	25.0	11.2			2		W	0	0	D. clouds	
Belgaum	27.30	693.2	29.85	758.1	72.9	22.7	83	WSW	10.0	4.5			7	E	SW	0.03	0.8	D. clouds	
Lahore	28.67	728.2	29.37	746.0	106.3	41.3	28	Calm	2.5	1.1			3			0	0	D. clouds	
Roorkee	28.56	725.3	29.42	747.3	92.4	33.6	44	SW	4.0	1.8			0			0.01	0.3	Misty	
Agra	28.90	733.9	29.43	747.5	101.6	38.7	33	NW	6.3	2.8						0	0		
Nagpur	28.56	725.5	29.56	750.9	97.5	36.4	29	NW	6.1	2.7			3	W		0	0	D. clouds	
Jubbulpore	28.23	717.0	29.54	750.4	95.5	35.3	36	W	6.3	2.8			6			0	0	D. clouds	
Lucknow	29.06	738.2	29.42	747.4	99.4	37.4	40	WNW	3.3	1.5						0	0	Blue sky	
Allahabad	29.14	740.1	29.43	747.6	101.6	38.7	37	SW	6.0	2.7			3			0	0	Misty	
Patna	29.25	742.9	29.42	747.3	95.6	35.3	57	NE	1.5	0.7			4	NE	NE	0	0	D. clouds	
Hazaribagh	27.55	699.8	29.50	749.3	89.8	32.1	57	Calm	9.7	4.3			4			0	0		
Cuttack	29.49	748.9	29.56	750.9	90.9	32.7	57	S	20.0	8.9			7			0	0	D. clouds	
Calcutta (Alipore)	29.52	749.8	29.54	750.3	86.2	30.1	79	S	2.0	0.9			5	SW	Calm	0	0	D. clouds	
Goalpara	29.14	740.2	29.55	750.5	76.0	24.4	93	ESE	3.2	1.4			10			2.44	62.0	Overcast	
Chittagong	29.57	751.1	29.66	753.4	82.9	28.3	79	SSW	6.0	2.7			7			0	0	D. clouds	
Sibsagar	29.24	742.7	29.57	751.1	83.0	28.3	85	NW	3.0	1.3			10	SW	SW	0.25	6.4	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.58	751.4	29.98	761.5	75.4	24.1	51	SW	1.8	0.8			4			0.390	9.9		Prof. Giovanni Clodig.
Milan	29.45	748.1	29.95	760.8	75.4	24.1	46	ENE	3.8	1.7			6	SE		0	0		Prof. Schiaparelli.
Padua	29.88	758.9	29.99	761.7	72.0	22.2	63	N	4.9	2.2			6	E		0.063	1.6		Prof. Dott. Lorenzoni.
Moncalieri	29.06	738.0	29.94	760.5	72.7	22.6	59	E	3.8	1.7			5	NE		0.268	6.8		Prof. P. F. Denza.
Genoa	29.79	756.6	29.98	761.4	73.0	22.8	46	SW	4.3	1.9			0			0	0		Prof. G. M. Garibaldi
Mondovi	28.10	713.6	29.96	760.9	68.5	20.8	53	NW			4		0			0.224	5.7		Prof. D. C. Bruno.
Pesaro	29.91	759.7	29.96	760.9	73.4	23.0	74	E	8.1	3.6			3	E		0	0		Prof. Luigi Guidi.
Florence	29.67	753.7	29.93	760.1	80.6	27.0	44	NW			2		4			0	0		Cav. F. Meucci.
Leghorn	29.91	759.6	29.99	761.7	73.4	23.0	70	W	3.8	1.7			3			0	0		Prof. P. Monte.
Rome	29.75	755.6	29.92	760.0	81.9	27.7	44	WSW					0			0	0		Prof. P. S. Ferrari.
Lecce	29.78	756.5	30.01	762.2	75.2	24.0	57	SE	3.1	1.4			8	WNW		0.008	0.2		Prof. C. De Giorgi.
Cosenza	29.11	739.3	29.95	760.8	85.3	29.6	67	SW	0	0			8			0.012	0.3		Prof. D. Conti.
Cagliari	29.70	754.3	29.89	759.2	77.0	25.0	63	SE			4		7			0	0		Prof. A. Pacinotti.
Palermo	29.72	754.8	29.97	761.1	75.2	24.0	67	ENE	6.3	2.8			6			0	0		Prof. G. Ciacciatore
Syracuse	29.89	759.1	29.93	760.2	81.3	27.4	78	E	8.7	3.9			10	SW		0	0		Prof. V. G. Guliano
SUB-SERIES.																			
Naples, S. R.	29.45	748.1	29.95	760 7	80.6	27.0	46	SW	1.3	0.6			0			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.1	20.1	67	NNE	7.5	3.3			1 ck:ks			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.56	750.8	29.75	755 6	68.8	20.4	83	NNE	5.7	2.5		ck	10s			0.015	0.38	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.63	752.6	29.69	754.1	64.9	18.3	93	NE	4.4	2.0			10ck			0.085	2.16	Cloudy	The Staff.
Wakayama	29.65	753.1	29.70	754.4	68.0	20.0	91	SW	0.8	0.4		ck	9cs			0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.05	636.5	30.07	763.8	57.6	14.2	77	Calm			0		10k			0.75	19.0	Covered	Prof. L. Perez.
Guanaxuato	23.70	602.0			59.0	15.0	82	ENE	4.5	2.2		10n	8n	Calm	ENE	0.08	2.0	Covered	Vicente Fernandez.
Leon	24.44	620.7	30.06	763 5	64.0	17.8	90	N			1	3c	5ks	NE	NE	0.02	0.5	Cloudy	Prof. M. Leal.
Mazatlan	29.67	753.5	29.92	760.0	75.8	24.3	95	SW			2		10ks		SE	0.24	6.0	Covered	F. Quijano, C. E.
Mexico, Central Observatory	23.10	586.7	30.04	763.1	57.6	14.2	88	Calm	0	0			10k			0.24	6.0	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.96	608.6	29.87	758.7	63.5	17.5	78	W			1		10n		SE	0.05	1.2	Covered	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	595.1	30.17	766.4	54.5	12.5	42	Calm	0	0		3c	0	SE		0.19	4.8	Clear	Prof. P. Spina.
San Luis Potosi	24.26	616.1	30.22	767.6	58.8	14.9	45	E			1		10		E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpam	29.94	760.5	29.95	760.8	76.8	24.9	92	W			2	1	6	E	NW	0	0	Cloudy	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.63	574.9	30.25	768.4	53.8	12.1	91	E			2		10n		E	0.12	3.0	Covered	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,756.20 ft.; Leon, 1,793.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.3 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.97	761.1	29.97	761.1	73.8	23.2		ESE			3					0	0		
Groningen	29.97	761.2	30.02	762.6	71.8	22.1		E			2					0	0		
Helder	30.01	762.2	30.01	762.2	69.1	20.6		E			2					0	0		
Hellevoetsluis	29.97	761.1	29.97	761.1	72.9	22.7	60	ESE			2					0	0		
Utrecht	29.95	760.7	30.00	761.9	75.9	24.4	43	SSE			2		2			0	0	Lt'ly cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	30.04	763.0	30.10	764.4	72.3	22.4	58	NNW	3.6	1.6	.....	.....	2	.....	.....	0	0	.....	
Brönö	30.04	762.9	30.08	763.9	50.0	10.0	87	NNW	18	8	.....	.....	10	.....	.....	0.803	20.4	.....	
Christiania	29.84	757.8	29.97	761.3	82.4	28.0	35	WSW	7	3	.....	.....	7	.....	.....	0	0	.....	
Tromsö	29.91	759.6	29.96	761.0	43.3	6.3	72	NE	7	3	.....	.....	10	.....	.....	0.150	3.8	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.92	759.9	30.13	765.2	71.1	21.7	80	W	.....	.....	5	.....	4	.....	.....	0.453	11.5	.....	Dr. J. A. Sampaio.
Campo Major	29.05	737.8	30.03	762.7	69.1	20.6	44	WNW	8.1	3.6	.....	.....	7	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.21	767.3	30.30	769.6	67.6	19.8	59	SW	6.3	2.8	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.80	756.8	30.15	765.9	61.0	16.1	65	SW	16.1	7.2	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.08	763.9	30.15	765.7	68.0	20.0	94	W	16.8	7.5	.....	.....	10	.....	.....	0.205	5.2	Raining	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando	.....	.....	29.88	758.6	71.2	21.8	.....	N	.....	.....	1	.....	0	.....	.....	1	N	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela	.....	.....	30.06	763.5	67.5	19.7	.....	NW	.....	.....	3	.....	1	.....	.....	2	NW	.....	Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.39	746.4	29.41	746.9	43.7	6.5	90	NNW	22	10	.....	.....	10	.....	.....	.....	.....	Raining	Capt. Sselilwerstow.
Astrakhan	29.86	758.5	29.78	756.4	72.1	22.3	33	E	2	1	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.15	740.5	29.63	752.6	66.9	19.4	64	NE	11	5	.....	.....	7	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.52	749.8	29.75	755.7	68.0	20.0	57	WNW	13	6	.....	.....	10k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.47	723.0	29.39	746.5	59.4	15.2	37	E	4	2	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.06	738.0	29.32	744.6	62.4	16.9	59	WSW	9	4	.....	.....	10n	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.85	758.3	29.87	758.8	67.3	19.6	57	NNE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.28	743.8	29.90	759.4	70.0	21.1	45	NW	7	3	.....	2c	.....	.....	.....	.....	.....	Light clouds	Physical Cabinet.
Krotkowo*	29.06	738.1	29.51	749.5	69.4	20.8	54	NW	2	1	.....	.....	9	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.60	751.7	29.75	756.7	73.9	23.3	36	W	18	8	.....	.....	4	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.02	737.1	29.54	750.4	64.4	18.0	63	W	11	5	.....	.....	9ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikoltiev	29.91	759.6	29.98	761.4	77.5	25.3	36	N	4	2	.....	.....	0	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	30.02	762.6	30.11	764.8	51.6	10.9	70	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	.....
Nukuss	29.54	750.3	29.77	756.1	71.8	22.1	22	WNW	5.6	2.5	.....	.....	0	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.55	750.5	29.69	754.1	71.2	21.8	90	Calm	0	0	.....	.....	3k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.59	751.6	29.61	752.0	59.2	15.1	63	NW	16	7	.....	.....	10n	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.21	716.5	29.69	754.2	78.8	26.0	47	Calm	0	0	.....	.....	8	.....	.....	.....	.....	Heavy clouds	Teich, A. M.
Tiflis	28.54	724.8	29.93	760.3	60.1	15.6	75	SE	4	2	.....	.....	10	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.61	752.2	30.03	762.7	71.6	22.0	44	ESE	4	2	.....	8ck	.....	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.56	750.8	29.96	761.0	72.1	22.3	44	WNW	7	3	.....	.....	7	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.54	750.4	29.82	757.5	63.3	17.4	48	ENE	2	1	.....	.....	1	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.87	758.7	29.97	761.3	74.3	23.5	59	SSW	4.7	2.08	.....	1ck	.....	.....	.....	0	0	Clear	Antonio Rave, Director
Bilbao, Met. Obs'y	29.95	760.6	30.00	762.0	72.3	22.4	64	NW	1.5	0.68	.....	3	2	SE	.....	0.378	9.6	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.06	687.2	.....	.....	67.6	19.8	60	SE	11.4	5.10	.....	.....	5	.....	.....	0	0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.77	705.3	29.91	759.8	73.6	23.1	31	SW	17.2	7.67	.....	0	1	.....	.....	0	0	Almost clear	The Staff.
Murcia, Met. Obs'y	29.82	757.5	29.97	761.2	84.4	29.1	46	SSW	2.0	0.89	.....	1	4	NE	.....	0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.10	739.2	30.00	761.9	57.7	14.3	74	SW	13.7	6.1	.....	.....	10	.....	.....	0.169	4.3	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.98	761.4	30.04	763.1	81.2	27.3	77	S	4.9	2.2	.....	5c;ck	1k	NW	.....	0.047	1.2	Fair	Benito Vines, S. J.
Manila, Philippine Islands	29.86	758.5	29.91	759.8	79.3	26.3	87	E	4.8	2.2	.....	2cs	2s	E	W	0.16	4.0	Cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	763.9	30.17	766.4	66.0	18.9	56	WNW	9.1	4.1	.....	3	4	E	W	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	761.9	30.09	764.2	81.3	27.4	82	E	7.7	3.44	.....	2s	3k	E	E	0.591	15.00	Clear	Enriquetadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.75	755.6	29.79	756.6	55.4	13.0	.....	N	.....	.....	4	.....	10	.....	.....	0.118	3.0	.....	
Umea	29.84	758.0	29.89	759.3	53.6	12.0	84	S	.....	.....	4	.....	7	.....	.....	0	0	.....	
Hernosand	29.87	758.6	29.92	759.9	65.8	18.8	62	NNW	.....	.....	6	.....	10	.....	.....	0	0	.....	
Stockholm	29.74	755.3	29.91	759.8	77.7	25.4	34	WNW	.....	.....	2	.....	3	.....	.....	0	0	.....	
Wisby	29.93	760.2	29.99	761.7	66.2	19.0	61	W	.....	.....	2	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.80	756.9	29.89	759.1	80.1	26.7	39	NW	7.4	3.3	.....	.....	1	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Observer.
Barque Australia	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	Capt. A. C. Schonmeyr.
Saga	.....	.....	.....	M. von Krusenstierna.
.....	.....	.....	.....	
.....	.....	.....	.....	
.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.56	725.4	29.06	760.8	65.3	18.5	61	NNE	.....	.....	2	.....	2	.....	.....	0.142	3.6	Clear.	The Observatory.
Zurich	28.37	720.6	29.05	760.7	72.0	22.2	56	W	.....	.....	2	.....	2	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.2 mm.; Thermometer, —2.5 Cent. Relative Humidity, +6 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.91	759.8	72.3	22.4	69	N	17	7.5	.....	.....	5	.....	N	0.039	1.0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.09	764.2	78.1	25.6	.....	E	.....	.....	1	.....	5	.....	.....	0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.68	753.8	85.6	29.8	58	SW	.....	.....	4	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	65.0	18.3	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	30.10	764.5	30.16	766.1	62.1	16.7	77	S	1	0.4	.....	0	0	.....	.....	0	0	Clear.	G. A. Blair.
Charlottetown, P. E. Island	30.12	765.0	30.16	766.1	58.0	14.4	79	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	30.00	762.0	30.18	766.6	65.3	18.5	64	SW	.....	.....	2	4cs	0	.....	.....	0	0	Fair.	James Smith, M. A.
Dalhousie, N. B.	29.98	761.5	30.14	765.5	61.5	16.4	60	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.12	765.0	30.14	765.5	59.6	15.3	71	SW	0	4.0	.....	Haze	Haze	.....	.....	0	0	Hazy.	J. McWilliams.
Fredericton, N. B.	30.13	765.3	30.19	766.8	64.7	18.2	55	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.30	744.2	30.19	764.5	67.0	19.4	84	SW	5	2.2	.....	2cs	Haze	W	.....	0	0	Hazy.	James Stewart.
Granton, Ontario	29.20	741.7	30.28	769.1	63.0	17.2	83	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	30.08	764.0	30.21	767.3	59.9	15.5	71	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	A. Allison.
Hamilton, Ontario	29.89	759.2	30.28	769.1	65.3	18.5	75	NW	.....	.....	1	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.88	758.9	30.20	767.1	66.0	18.9	79	SW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	30.15	765.8	30.18	766.6	55.6	13.1	77	NW	7	3.1	.....	4c	0	NW	.....	0	0	Fair.	C. H. Rigby.
Montreal, Quebec	29.99	761.7	30.19	766.8	67.1	19.5	60	SW	7	3.1	.....	0	0	.....	.....	0	0	Clear.	C. H. McLeod, C. E.
Moose Factory, Ontario	30.34	770.6	30.38	771.6	60.3	15.7	63	N	.....	.....	1	.....	9n	.....	.....	0	0	Cloudy.	J. R. Nason.
Norwood, Ontario	29.54	750.3	30.22	767.6	66.2	19.0	67	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.60	751.8	30.27	768.8	65.0	18.3	73	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.54	750.3	30.26	768.6	69.7	20.9	56	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.59	751.6	30.27	768.8	62.1	16.7	83	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.63	752.6	30.26	768.6	66.0	18.9	74	N	4	1.8	.....	0	0	.....	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.89	759.2	30.21	767.3	61.0	16.1	71	S	.....	.....	3	0	0	.....	.....	0	0	Clear.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.80	756.9	30.25	768.3	55.0	12.8	77	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	W. H. McIntyre.
St. John, N. B.	30.02	762.5	30.18	766.6	61.0	16.1	63	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.67	751.1	30.26	768.6	55.7	13.2	71	SE	1	0.4	.....	0	0	.....	.....	0	0	Clear.	K. Stewart.
Stratford, Ontario	29.02	737.1	30.28	769.1	61.7	16.5	72	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	30.14	765.5	30.18	766.6	62.5	16.9	49	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	T. C. Hill, C. E.
Toronto, Ontario	29.92	760.0	30.29	769.4	69.0	20.6	56	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear.	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	.....	.....	.....	.....	.....	.....	.....	W	1	0.4	.....	0	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	30.12	765.0	30.19	766.8	52.4	11.3	88	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.88	758.9	30.13	765.3	57	13.9	58	W	3	1.3	.....	0	0	.....	.....	0	0	Fair.	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	30.06	763.5	58.3	14.6	.....	NW	.....	.....	3	.....	.....	.....	.....	0	0	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.20	767.1	30.28	769.1	67	19.4	55	E	4	1.8		0	Sm'e		Calm	0	0	Clear.	
Alpena, Michigan	29.62	752.3	30.26	768.6	63	17.2	62	Calm	0	0		0	Haze		Calm	0	0	Clear.	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.08	738.6	30.21	767.3	65	18.3	52	NE	8	3.6		0	0			0	0	Clear.	
Atlantic City, New Jersey	30.25	768.3	30.26	768.6	66	18.9	74	S	4	1.8		2k;Hz	Haze	Calm	Calm	0	0	Light haze.	
August., Georgia	30.07	763.8	30.26	768.6	70	21.1	53	N			1	0	1s		Calm	0	0	Clear.	
Baltimore, Maryland	30.23	767.8	30.28	769.1	71	21.7	66	W	4	1.8		0	Haze		Calm	0	0	Clear.	
Barnegat, New Jersey	30.23	767.8	30.25	768.3	68	20.0	60	NW	6	2.7		2ck	Haze	NE	Calm	0	0	Clear.	
Bismarck, Dakota	28.29	718.6	30.15	765.8	61	16.1	94	SE	11	4.9			10s		SE	0	0	Cloudy.	
Boerne, Texas	28.67	728.2	29.95	760.7	70	21.1	95	E	3	1.3		2k	8ks	Calm	SW	0	0	Cloudy.	
Boise City, Idaho	26.91	683.5	29.87	758.7	54	12.2	49	NW	2	0.9		0	0			0	0	Clear.	
Boston, Massachusetts	30.07	763.8	30.22	767.6	68	20.0	65	Calm	0	0		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.91	734.3	29.93	760.2	75	23.9	90	E	3	1.3			10s		S	0	0	Cloudy.	
Breckenridge, Minnesota	29.12	739.6	30.09	764.3	67	19.4	84	SE	10	4.5		5k	0	S		Inap.	Inap.	Fair.	
Brownsville, Texas	30.01	762.2	30.06	763.5	79	26.1	87	Calm	0	0		2k	0	Calm		0	0	Clear	
Buffalo, New York	29.67	751.1	30.26	768.6	64	17.8	70	SW	6	2.7		0	0			0	0	Clear.	
Burkes, Arizona					80	26.7	34	Calm			0	5ck	0	Calm		0	0	Fair.	
Burlington, Vermont	29.95	760.7	30.23	767.8	68	20.0	47	S	5	2.2		5ck	0	W		0	0	Fair.	
Cairo, Illinois	29.87	758.7	30.25	768.3	70	21.1	61	E	4	1.8		2ck	0	E		0	0	Fair.	
Campo, California	27.34	694.4	29.91	759.7	43	6.1	75	SW	3	1.3		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.15	766.6	30.19	766.8	68	20.0	74	NE	23	10.3		Haze	Haze	Calm	Calm	0	0	Light haze.	
Cape Henry, Virginia	30.22	767.6	30.24	768.1	68	20.0	70	NE	12	5.4		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.16	766.1	30.18	766.6	69	20.6	75	NE	23	10.3		0	0			0.09	2.3	Clear.	
Cape May, New Jersey	30.24	768.1	30.27	768.8	67	19.4	69	SW	8	3.6		0	0			0	0	Clear.	
Castroville, Texas	29.32	744.7	30.00	762.0	78	25.6	65	SE	6	2.7			10s		SE	0	0	Cloudy.	
Cedar Keys, Florida	30.05	763.3	30.08	764.0	74	23.3	72	NE	16	7.2		1ck	0	Calm		0	0	Clear.	
Charleston, South Carolina	30.11	764.8	30.16	766.1	71	21.7	53	NE	13	5.8		0	0			0	0	Clear.	
Charlotte, North Carolina	29.38	746.2	30.18	766.6	66	18.9	64	N	4	1.8		2cs	0	NW		0	0	Clear.	
Chattanooga, Tennessee	29.45	748.0	30.24	768.1	67	19.4	79	SE	1	0.4		5k	0	NE		0	0	Fair.	
Cheyenne, Wyoming	24.19	614.4	30.13	765.3	56	13.3	81	Calm	0	0		0	0			0.26	6.6	Clear.	
Chicago, Illinois	29.69	751.6	30.27	768.8	69	20.6	52	Calm	0	0		2cs	0	Calm		0	0	Clear.	
Chincoteague, Virginia	30.25	768.3	30.26	768.6	67	19.4	83	NE	6	2.7		0	0			0	0	Clear.	
Cincinnati, Ohio	29.63	752.6	30.27	768.8	67	19.4	74	Calm	0	0		0	Sm'e		Calm	0	0	Clear.	
Cleveland, Ohio	29.59	751.6	30.30	769.6	64	17.8	63	E	2	0.9		0	Fog			0	0	Clear	
Coleman City, Texas	28.56	720.3	29.99	761.7	68	20.0	74	E	4	1.8			10s		S	0	0	Cloudy.	
Columbus, Ohio	29.45	748.0	30.28	769.1	67	19.4	55	N	2	0.9		0	Sm'e		Calm	0	0	Clear.	
Concho, Texas	28.21	716.5	29.84	757.9	70	21.1	90	NE	6	2.7		10k	0	S		0.09	2.3	Cloudy.	
Corsicana, Texas	29.72	754.9	30.18	766.6	67	19.4	74	Calm	0	0		0	0			0	0	Clear.	
Davenport, Iowa	29.61	752.1	30.24	768.1	66	18.9	74	E	6	2.7		8c	0	Calm		0	0	Fair.	
Dayton, Washington T'y					50	10.0	64	SW			1	8c	0	SW		0	0	Fair.	
Deadwood, Dakota	25.50	647.7			65	18.3	40	SW	8	3.6		0	0			0	0	Clear.	
Decatur, Texas	29.02	737.1	30.16	766.1	70	21.1	75	SE	7	3.1		0	0			0	0	Clear.	
Delaware Breakwater, Del.	30.23	767.8	30.26	768.6	66	18.9	79	W	6	2.7		Haze	Haze	Calm	Calm	0	0	Light haze.	
Denison, Texas	29.40	746.7	30.18	766.6	68	20.0	79	Calm	0	0		0	Haze			0	0	Hazy.	
Denver, Colorado	24.94	633.5	30.16	766.1	56	13.3	48	S	4	1.8		0	0			0	0	Clear.	
Des Moines, Iowa	29.38	746.2	30.24	768.1	69	20.6	70	SW	4	1.8			10n		SW	0.03	0.8	Light rain.	
Detroit, Michigan	29.61	752.1	30.27	768.8	65	18.3	68	Calm	0	0		0	Fog		Calm	0	0	Clear.	
Dodge City, Kansas	27.47	697.7	29.69	754.1	64	17.8	82	S	14	6.3		0	0			0.99	25.1	Clear	
Dubuque, Iowa	29.57	751.1	30.26	768.6	65	18.8	78	E	3	1.3			10s		Calm	0	0	Cloudy.	
Duluth, Minnesota	29.52	749.8	30.18	766.6	64	17.8	94	NE	3	1.3		5cs	5ks	Calm	SW	0.04	1.0	Cloudy.	
Eagle Pass, Texas	29.30	744.2	30.01	762.2	79	26.1	70	SE	6	2.7		0	0			0	0	Clear.	
Eastport, Maine	30.11	764.8	30.17	766.3	59	15.0	59	SW	2	0.9		0	Sm'e		Calm	0	0	Fair	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.58	751.3	30.28	769.1	68	20.0	51	Calm	0	0		0	0			0	0	Clear.	
Escanaba, Michigan	29.58	751.3	30.23	767.8	64	17.8	73	Calm	0	0			10ks		SW	0.02	0.5	Cloudy.	
Florence, Arizona					79	26.1	47	Calm	0	0		0	8ks		E	0	0	Fair.	
Fort Apache, New Mexico	25.06	636.5	30.50	774.7	62	16.7	56	SE	2	0.9		10ck	0	Calm		Inap.	Inap.	Cloudy.	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.96	710.2	29.78	756.4	68	20.0	60	E	8	3.6		0	0			0	0	Clear.	
Fort Custer, Montana	26.73	678.9			71	21.7	60	SE	2	0.9		0	0			0	0	Clear.	
Fort Davis, Texas	25.32	643.1	30.28	769.1	74	23.3	36	W	3	1.3		2cs	0	W		0	0	Fair.	
Fort Elliot, Texas	27.07	687.6	29.24	742.7	65	18.3	73	E	16	7.2			10s		E	0	0	Cloudy.	
Fort Gibson, Indian Ter.	29.66	753.4	30.19	766.8	65	18.8	78	Calm	0	0		5cs	0	S		0	0	Fair.	
Fort Grant, Arizona	25.22	640.6	30.02	762.5	76	24.4	27	NW	2	0.9		5ck	5k	NE	N	0	0	Cloudy.	
Fort Griffin, Texas	28.66	728.0	30.12	765.0	63	17.2	91	Calm	0	0		0	0			0	0	Clear.	
Fort Keogh, Montana	27.19	690.6			68	20.0	68	SE	4	1.8		0	0			0	0	Clear.	
Fort McKavett, Texas	27.87	707.9	29.73	755.1	71	21.7	80	SE	3	1.3			10ks		SE	Inap.	Inap.	Cloudy.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.99	736.3	30.08	764.0	67	19.4	79	N	8	3.6		5cs	0	Calm		0	0	Fair.	
Fort Stevenson, Dakota	28.23	717.0			60	15.6	80	SE	4	1.8		0	0			0	0	Clear.	
Fort Verde, Arizona					64	17.8	25	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.06	763.5	30.11	764.8	78	25.6	69	NE	11	4.9		0	2ks		E	0	0	Clear.	
Grand Haven, Michigan	29.63	752.6	30.27	768.8	66	18.9	79	S	1	0.4		0	0			0	0	Clear.	
Helena, Montana					56	13.3	63	S	5	2.2		0	0			0	0	Clear.	
Henrietta, Texas																			
Indianapolis, Indiana	29.48	748.8	30.24	768.1	69	20.6	70	N	2	0.9		5k	0	N		0	0	Fair.	
Indianola, Texas	30.08	764.0	30.11	764.8	80	26.7	78	NE	12	5.4		1k	0	Calm		0	0	Clear.	
Jacksboro, Texas	29.02	737.1	30.01	762.2	69	20.6	80	SE	4	1.8		0	0			0	0	Clear.	
Jacksonville, Florida	30.08	764.0	30.10	764.5	77	25.0	57	NE	12	5.4		2k	0	NE		0	0	Fair.	
Keokuk, Iowa	29.60	751.8	30.20	767.1	66	18.9	79	SE	3	1.3			10s		W	0	0	Cloudy.	
Key West, Florida	30.00	762.0	30.03	762.7	83	28.3	71	SW	8	3.6		2k	0	SW		0	0	Fair.	
Kittyhawk, North Carolina	30.22	767.6	30.25	768.3	67	19.4	69	NE	19	8.5		0	Haze		Calm	0	0	Clear.	
Knoxville, Tennessee	30.28	769.1	30.26	768.6	70	21.1	60	Calm	0	0		10k	0	NE		0	0	Cloudy.	
La Crosse, Wisconsin	29.49	749.0	30.21	767.3	68	20.0	84	S	2	0.9			10s		Calm	0	0	Cloudy.	
La Mesilla, New Mexico	26.14	663.9	30.29	769.4	67	19.4	63	Calm	0	0		0	2s		Calm	0	0	Fair.	
Laredo, Texas	29.63	752.6	29.96	761.0	78	25.6	78	SE	4	1.8		1cs	0	Calm		0	0	Clear.	
Leavenworth, Kansas	29.32	744.7	30.13	765.3	69	20.6	65	S	1	0.4			10s		SW	0	0	Cloudy.	
Lewiston, Idaho	28.96	735.6	29.59	751.6	55	12.8	73	E	1	0.4		2cs	0	Calm		0	0	Clear.	
Little Rock, Arkansas	29.86	758.4	30.17	766.8	69	20.6	70	NE	4	1.8		0	0			0	0	Clear.	
Los Angeles, California	29.53	750.0	29.87	758.7	52	11.1	86	Calm	0	0		0	0			0	0	Clear.	
Louisville, Kentucky	29.68	753.9	30.23	767.8	66	18.9	74	N	2	0.9		2cs	Sm'e	Calm	Calm	0	0	Clear.	
Lynchburg, Virginia	29.58	751.3	30.26	768.3	71	21.7	80	NE	1	0.4		0	0			0	0	Clear.	
Madison, Wisconsin	29.26	743.2	30.22	767.6	68	20.0	74	Calm	0	0		5ck	2s	E	E	0	0	Fair.	
Marquette, Michigan	29.51	749.5	30.19	766.8	69	20.6	65	SW	4	1.8		5k	0	SW		0	0	Fair.	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.48	723.4	30.19	766.8	72	22.2	71	SE	5	2.2	.....	2k	5s	S	S	0.02	0.5	Fair	
Memphis, Tennessee	29.82	757.4	30.16	766.1	71	21.7	68	E	5	2.2	.....	Haze	Haze	.....	.....	0	0	Hazy	
Milwaukee, Wisconsin	29.54	750.3	30.26	768.6	67	19.4	64	SE	2	0.9	.....	5c	Haze	Calm	.....	0	0	Fair	
Mobile, Alabama	30.10	764.5	30.14	765.5	73	22.8	62	N	6	2.7	.....	0	Haze	.....	Calm	0	0	Clear	
Montgomery, Alabama	29.97	761.2	30.20	767.1	72	22.2	50	NE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Morgantown, West Virginia	29.29	744.0	30.27	768.8	64	17.8	78	Calm	0	0	.....	1ck	Fog	NW	Calm	0	0	Clear	
Mt Washington, N. H.	24.11	612.4	30.47	773.9	46	7.8	47	N	11	4.9	.....	0	Sm'e	.....	N	0	0	Clear	
Nashville, Tennessee	29.72	754.9	30.25	768.3	72	22.2	58	Calm	0	0	.....	5ck	0	NE	.....	0	0	Fair	
New Haven, Connecticut	30.13	765.3	30.25	768.3	69	20.6	61	N	6	2.7	.....	0	0	.....	.....	0	0	Clear	
New London, Connecticut	30.18	766.6	30.22	767.6	67	19.4	69	NE	2	0.9	.....	0	Haze	.....	Calm	Inap.	Inap.	Clear	
New Orleans, Louisiana	30.06	763.5	30.11	764.8	76	24.4	59	E	3	1.3	.....	1c	0	Calm	.....	0	0	Clear	
Newport, Rhode Island	30.18	766.0	30.23	767.8	67	19.4	74	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
New River, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
New York, New York	30.08	764.0	30.26	768.6	69	20.6	52	NW	2	0.9	.....	1ck	Haze	Calm	Calm	0	0	Clear	
Norfolk, Virginia	30.19	766.8	30.25	768.3	71	21.7	58	E	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.22	691.4	29.74	755.4	60	15.6	88	SE	5	2.2	.....	.....	10s	.....	SE	0.37	9.4	Cloudy	
Olympia, Washington Ter.	29.86	758.4	29.90	759.4	47.0	8.3	96	SW	1	0.4	.....	.....	10n	.....	S	0.01	0.3	Light rain	
Omaha, Nebraska	29.61	756.8	30.08	764.0	67	19.4	79	SE	7	3.1	.....	.....	10s	.....	Calm	0.17	4.3	Cloudy	
Oswego, New York	29.97	761.2	30.29	769.4	64	17.8	73	S	3	1.3	.....	Haze	0	.....	.....	0	0	Clear	
Pembina, Dakota	29.24	742.7	30.04	763.0	64	17.8	83	S	7	3.1	.....	2c	0	Calm	.....	0	0	Clear	
Pensacola, Florida	30.11	764.8	30.14	765.5	75	23.9	64	NE	12	5.4	.....	0	0	.....	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.22	767.6	30.28	769.1	69	20.6	56	SW	4	1.8	.....	0	Haze	.....	Calm	0	0	Dense haze	
Phœnix, Arizona	28.72	729.5	30.42	772.7	82	27.8	33	E	2	0.9	.....	1k	0	Calm	.....	0	0	Clear	
Pike's Peak, Colorado	18.07	459.0	30.28	769.1	40	4.4	48	S	12	5.4	.....	5k	0	S	.....	0	0	Fair	
Pilot Point, Texas	29.40	746.7	30.22	767.6	70	21.1	70	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	23.98	609.1	29.75	755.6	58	14.4	17	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.47	748.5	30.28	769.1	60	15.6	82	NW	3	1.3	.....	0	Fog	.....	.....	0	0	Clearing	
Port Huron, Michigan	29.62	752.3	30.26	768.6	66	18.9	69	Calm	0	0	.....	0	Sm'e	.....	.....	0	0	Fair	
Portland, Maine	30.16	766.1	30.21	767.3	64	17.8	73	SW	2	0.9	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	29.89	759.2	29.96	761.0	51	10.6	79	SE	5	2.2	.....	.....	10ks	.....	SW	0	0	Cloudy	
Portsmouth, North Carolina	.....	.....	.....	.....	68	20.0	79	NE	24	10.7	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.78	629.4	30.14	765.5	60	15.6	29	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.00	762.0	30.01	762.2	75	23.9	86	NE	10	4.5	.....	10ck	0	W	.....	0.33	8.4	Cloudy	
Red Bluff, California	29.52	749.8	29.87	758.7	62.0	16.7	51	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.88	758.9	30.10	764.5	76	24.4	86	E	4	1.8	.....	0	0	.....	.....	0.40	10.2	Clear	
Rochester, New York	29.64	752.8	30.24	768.1	63	17.2	57	W	5	2.2	.....	0	Haze	.....	Calm	0	0	Clear	
Roseburg, Oregon	29.44	747.8	30.01	762.2	46.5	8.1	88	NW	1	0.4	.....	.....	10ks	.....	SW	0	0	Cloudy	
Sacramento, California	29.82	757.4	29.89	759.2	54	12.2	74	SE	8	3.6	.....	0	6	.....	.....	0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.23	767.8	69	20.6	61	SE	7	3.1	.....	1c	0	.....	.....	0	0	Clear	
St. Paul, Minnesota	29.35	745.5	30.16	766.1	67	19.4	84	Calm	0	0	.....	.....	10ks	.....	S	0	0	Cloudy	
Salt Lake City, Utah	25.52	648.2	29.85	758.2	69	20.6	23	SE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.43	747.5	30.11	764.8	75	23.9	81	E	2	0.9	.....	.....	10s	.....	NW	0	0	Cloudy	
San Diego, California	29.82	757.4	29.89	759.2	60	15.6	88	NW	2	0.9	.....	.....	Fog	.....	Calm	0	0	Foggy	
Sandusky, Ohio	29.63	752.6	30.28	769.1	67	19.4	64	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Sandy Hook, New Jersey	30.21	767.3	30.24	768.1	73	22.8	59	W	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.92	760.0	29.98	761.5	51	10.6	79	W	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	61	16.1	50	NE	3	1.3	.....	4cs	0	Calm	.....	0.09	2.3	Fair	
Savannah, Georgia	30.08	764.0	30.17	766.3	72	22.2	50	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Shreveport, Louisiana	29.93	760.2	30.14	765.5	70	21.1	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.14	765.5	30.18	766.6	68	20.0	70	N	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.61	752.1	30.27	768.8	67	19.4	64	E	6	2.7	.....	2ck	2s	W	E	0	0	Fair	
Springfield, Massachusetts	30.18	765.3	30.26	768.6	68	20.0	56	N	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.04	686.8	30.04	763.0	71	21.7	71	S	8	3.6	.....	0	2s	.....	Calm	0	0	Fair	
Thatcher's Island, Mass	30.10	766.8	30.24	768.1	69	20.6	80	NE	4	1.8	.....	Sm'e	Sm'e	.....	.....	0	0	Smoky	
Toledo, Ohio	29.58	751.3	30.26	768.3	68	20.0	60	NE	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
Tucson, Arizona	27.42	696.5	29.97	761.2	84	28.9	31	S	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.48	748.8	29.96	761.0	57.5	14.2	50	SW	16	7.2	.....	2ck	5s	S	SW	0	0	Cloudy	
Uvalde, Texas	29.11	739.4	29.90	759.4	73	22.8	90	SE	1	0.4	.....	.....	10s	.....	SE	0.08	2.0	Cloudy	
Vicksburg, Mississippi	29.91	759.7	30.16	766.1	74	23.3	63	E	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.18	614.2	29.66	753.4	58	14.4	82	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.50	749.3	29.86	758.4	57.5	14.2	46	NW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.17	766.3	30.28	769.1	69	20.6	75	S	2	0.9	.....	5k	Sm'e	N	.....	0	0	Fair	
Wickenburg, Arizona	.....	.....	.....	.....	70	21.1	17	W	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.11	764.8	30.19	766.8	68	20.0	56	NE	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.47	646.9	29.83	757.7	40	4.4	39	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	30.19	766.8	30.22	767.6	68	20.0	84	Calm	0	0	.....	0	Haze	.....	.....	0	0	Clear	
Yankton, Dakota	28.87	733.3	30.14	765.5	62	16.7	88	E	4	1.8	.....	2ck	5ks	SW	.....	0.32	8.1	Fair	
Yuma, Arizona	29.02	752.3	29.76	755.9	81	27.2	42	E	16	7.2	.....	2k	0	SW	.....	0	0	Fair	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3	.....	.....	54.5	12.5	70	Calm	0	0	.....	0	5ks	.....	.....	0	0	Fair	Thomas Herran.
‖ Havana, Cuba, W. I.	30.01	762.2	30.06	763.5	82	27.8	74	Calm	0	0	.....	8cs	0	Calm	.....	0	0	Cloudy	Chas. Hasselbrink.
‖ Kingston, Jamaica, W. I.	29.92	760.0	29.93	760.2	80	26.7	79	Calm	0	0	.....	2c	0	Calm	.....	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.91	759.7	29.99	761.7	81	27.2	71	E	8	3.6	.....	8	5s	SE	E	0	0	Hazy	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.04	763.0	30.04	763.0	80	26.7	82	E	.....	.....	2	3c	5k	E	.....	0.070	1.78	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.38	746.2	29.93	760.2	83	28.3	80	Calm	.....	.....	0	.....	5ks:s	.....	.....	0	0	.....	Francesco J. Cisneros
‖ Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	E	.....	.....	.....	.....	2k	.....	E	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I.	30.02	762.5	30.04	763.0	79	26.1	74	Calm	0	0	.....	8cs	0	.....	.....	0.800	20.32	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gellich.
York Factory, B. A.	29.82	757.4	29.87	758.7	63.0	17.2	80	S	5	2.2	.....	2k	1s	S	S	0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,209 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,336.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.10	764.5	75	23.9	64	NE	10	4.5			d							Clear	
§Navy Yard, Portsmouth, N. H.	29.95	760.7	62	16.7	83	Calm	0	0			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.66	753.4	66	18.9	94	NE			2		10s		NE	0.17	4.3			Overcast	
§Adams, Payta, Peru	29.98	761.5	67	19.4	89	ESE			0-1		10		SE				S	Cloudy	
§Alaska, Callao, Peru.*	29.98	761.5	61	16.1	94	Calm			0		10					Long	SW	Misty	
§Alert, Yokohama, Japan	29.57	751.1	69	20.6	90	NNE			2		10		Calm			Smooth		Cloudy	
§Alliance, St Pierre, Newfoundland	30.23	767.8	57	13.9	81	NW			2-4		5?		NNW	0	0	Smooth		Clear?	
§Ashuelot, Bate Point, Yangtzekiang, China	29.68	753.9	82	27.8	56	SE			2		10		ENE	0	0	None		Cloudy	
§Colorado, New York, N. Y.	30.22	767.6	68	20.0	51	NW	3	1.3			0							Hazy	
§Constellation, Annapolis Roads, Md.	30.09	764.3	74	23.8	81	WSW			2		2					Smooth		Fair	
§Constitution, Off Ellis Isl'd., N. Y.	30.22	767.6	74	23.8	47	NW	3	1.3			1		Calm					Clear	
§Franklin, Off Navy Yard, Norfolk, Va	30.21	767.3	68	20.0	79	E	2.4	1.1			0			0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal.	29.91	759.7	54	12.2	??	W	1.2	0.5			0			0	0			Clear	
§Jamestown, Sitka, Alaska.*	30.03	762.7	49	9.4	85	WNW			1		10					Smooth		Cloudy	
§Kearsarge, Boston, Mass.	30.21	767.3	67	19.4	74	ENE			1		2		WSW			Smooth		Fair	
§Lackawanna, Punta Arenas, Costa Rica†	30.01	762.2	79	26.1	86	NE			1-2		5		NE					Fair	
§Marion, S 50° 41′, W. 57° 35′	29.55	750.6	41	5.0	82	S			6		8			Blank	Blank	Rough	WSW	Cloudy	
§Michigan, Erie, Pa.	30.23	767.8	65	18.3	73	S			1		0							Hazy	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.23	767.8	70	21.1	66	NNW			1		0							Clear	
§Monocacy, Chefoo, China	29.70	754.4	69	20.6	90	E			0-1		0							Clear	
§New Hampshire, Port Royal, S. C.	30.18	766.6	70	21.1	57	NE	24	10.7			1		Calm	0	0			Clear	
Nipsic, N. 40° 22′, E. 13° 01′	29.88	758.9	76	24.4	73	Calm			0		0					Smooth		D. clouds	
§Onward, Chimbote, Peru †	29.93	760.2	66	18.9	84	Calm			0		10					Long	W	Cloudy	
§Palos, Shanghai, China	29.71	754.6	77	25.0	77	S			1		8							Cloudy	
§Passaic, Washington, D. C.	30.25	768.3	67	19.4	95	E			1		0			0	0			Clear	
§Pensacola, N. 42° 28′, W. 124° 51′	29.97	761.2	52	11.1	73	WSW			1		8		WNW			Smooth	NW	Raining	
§Portsmouth, Fayal, Azore Islands	30.12	765.0	68	20.0	95	WNW			3		8		NW			Mod'ate	SW	Cloudy	
§Powhatan, New York, N. Y.	30.22	767.6	68	20.0	74	Calm			0		2							Hazy	
§Quinnebaug, N. 57° 08′, E. 8° 30′	30.08	764.0	63	17.2	78	Calm			0		2					Smooth		Hazy	
§Richmond, Kobe, Japan	29.69	754.1	72	22.2	90	N			1		8		Calm	0.2	5.			Fair	
Rio Bravo, Brownsville, Texas †	30.23	767.8	74	23.3	100	N	1	0.4			5?		N	0	0			Cloudy	
§Saratoga N. 36° 23′, W. 1° 35′	30.08	764.0	70	21.1	75	W			4		2		E	0	0	Light	W	Clear	
§Shenandoah, Buenos Ayres, Argentine Republic.	30.19	766.8	56	13.3	87	NW			2		2					Smooth		Fair	
§St. Louis, League Island, Pa.	30.21	767.3	64	17.8	94	Calm	0	0			0			0	0			Clear	
Swatara, Hong-Kong, China †	29.73	755.1	85	29.4	83	SE			1		10		Calm			Smooth		Cloudy	
§Tennessee, New York, N. Y.	30.25	768.3	67	19.4	69	N			1		2		Calm	0	0	Smooth		Hazy	
§Ticonderoga, Nagasaki, Japan	29.73	755.1	73	22.8	95	N			1		8		S			Smooth		Cloudy	
§Trenton, N. 35° 41′, W. 7° 36′	30.17	766.3	65	18.3	63	WNW			3		5?			0	0	None		Cloudy?	
§Vandalia, Edgartown, Mass.	30.25	768.3	65	18.3	59	N			1		1		Calm					Clear	
§Wabash, Boston, Mass.	30.21	767.3	66	18.9	73	Calm	0	0			0			0	0			Clear	
§Wachusett, S. 33° 47′, W. 74° 34′	29.91	759.7	56	13.3	94	NNW			2		10		NW			Long	W	Cloudy	
Wyoming, N. 39° 26′, E. 1° 17′	29.97	761.2	72	22.2	71	SSW			3		2		SW			Smooth	SW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer.																			
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent Liverpool, Eng	30.04	763.0	74	23.3	86	SE			6		4		SE	Mod'ate	Mod'ate			Fair	
S. S. Ohio, Henry Morrison.																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge. N. 49° 27', W. 20° 41'....*†	29.45	748.0	60	15.6	94	SE			6		10		SE	10h'rs	10h'rs	Heavy	SE	Raining	Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger. N. 23° 05', W. 107° 55'....†	29.80	756.9	75	23.9	86	SW			3		10		WSW	Light	Light	Gentle	SW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 40° 20', W. 62° 30'	29.92	760.0	69	20.6	80	NE			3		5		NE	Light	Light	Mod'ate	ENE	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 50° 02', W. 3° 59'	29.90	759.4	67	19.4	79	NE			1		2		NE	0	0	Mod'ate	E	Misty	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 41° 26', W. 148° 28'....†	30.49	774.4	57	13.9	87	E			4		2		ENE			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley. N. 27° 32', E. 124° 06'....†	29.70	754.4	80	26.7	91	SW			3		8s		SW	Light	Light	Mod'ate	SW	D. clouds	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lachlan, N. 44° 35', W. 124° 23'....†	29.93	760.2	51	10.6	86	S			5		10n		SSE			Light & cross.	SSE	Raining	J. M. Lachlan.
S. S. Oregon, E. Polemann, Astoria, Oregon....†	29.92	760.0	54.5	12.5		Calm			0		10ks					Smooth	NW	Cloudy	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§S. S. Ancon, E. Alexander N. 35° 34', W. 122° 12'....†	29.96	761.0	51	10.6		NW			3		0					Heavy	NW	Clear	
S. S. Orizaba, C. B. Ainson. N. 35° 20,' W. 121° 10'...†	29.90	759.4	48	8.9		NW			9		1		NW	0	0	Rough	WNW	Clear	Harrison & Marshall.
§ S. S. State of California, G. Dobney. San Francisco, Cal....†	29.93	760.2	48	8.9		W			2		5		W					Fair	
S. S. Victoria, H. M. Haywood. N. 38° 46', W. 123° 28'....†	29.96	761.0	48	8.9	70	NW			4		0					Mod'ate	NW	Clear	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, La Union, San Salvador.....†	29.84	757.9	81	27.2	91	Calm			0		8		E			Smooth		Cloudy	F. A. Johnston.
§S. S. Australia, S. 34° 18′ E. 158° 49′.....†	29.83	756.7				SW			5		0					High	SW	Clear	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb. Sydney, N. S. W.....†	29.97	761.2	50	10.0	100	W			2		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly. N. 16° 50′ W. 100° 00′...†	29.95	760.7	81	27.2	96	S			1		2		S	0	0	Mod'ate	S	Clear	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, Yokohama Japan.....†	29.69	754.1	68	20.0	100	NNE			2		10		NE	Light	Light			Rainy	
§S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, San José, Guatemala...†	29.89	759.2	80	26.7	100	NE			2		10		Calm	0.02	0.5	Mod'ate	SE	Cloudy	
§S.S. Dakota, H. G. Morse.																			
§S.S. Granada, J. M. Cavarly																			C. T. Rode.
§S. S. Idaho. E. Alexander, Nanaimo, Vancouver Id.†	30.24	768.1	61	16.1		Calm			0		0			0	0			Fair	E. Alexander.
§S.S. Zealandia, R. O. Ghest, N. 5° 26′, W. 163° 55′.....	29.89	759.2	78	25.6		ESE			4		5		ESE			Long	S	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 44° 39′, W. 32° 38′.....†	29.84	757.9	61	16.1		W			6		8		W	6 h'rs	6 h'rs	High	W	Squally	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings, N. 51° 02′, W. 13° 29′.....†	29.82	757.4	58	14.4	94	SE			2				E	0	0	Mod'ate	E	D. clouds	
S. S. Britanic, H. Perry.....																			J. Jones.
S. S. Celtic, B. Gleadell.....																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.08	762.7	78	25.6		ENE			6		1		NE	0	0			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.....	30.18	766.6	72	22.2	90	Calm	0	0			0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 30° 02′, W. 71° 22′.....†	30.05	763.3	78	25.6		SSW			5		10		N	Heavy	Heavy	Heavy Cross	S;NW	Threatening	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 8° 27′, W. 27° 00′.....*†	30.06	763.5	82	27.8		WSW			1		8		WSW			Smooth	S;NE	Threatening	B. F. Woodbury.
Schr. Delia Hodgkins, N. 52° 56′, W 52° 52′.....†	29.91	759.7				S			2		2		S					Clear	S. S. Miner.
Brigantine George, W. H. Champlin.																			
Iron Cross, W. Randall, N. 24° 12′, W. 81° 05′.....	30.06	763.5	82	27.8	82	SW			1-2		4			0	0	Smooth		D. clouds	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	30.11	764.8	58	14.4	94	Calm			0		0			0	0			Very fine	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 19, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.06	763.4	77.4	25.2	69	WNW			2		3					Pretty fair...	Dr. Ollive.
Nemours			30.00	762.0	78.1	25.6	46	W			4		0			0	0	Clear	Metge.
Algiers			29.98	761.6	73.2	22.9	86	NW			2		5			0.047	1.2	Cloudy	Nicolas.
La Calle			29.94	760.4															Fonfrède.
Tunis			29.98	761.6															Jacques
Sfax			30.04	763.1															Gau.
Saida			29.97	761.1	87.3	30.7	33	Calm			0		9				0	Very cloudy	Charon.
Tebessa			30.07	763 6	87.8	31.0	54	W			2		0			0	0	Clear	Watrin.
Geriville			30.03	762.7	90.0	32.2	17	S			3		0			0	0	Clear	Lonchamp.
Laghouat			29.95	760.8	95.4	35.2	13	WNW			5		3			0	0	Pretty fair...	Herlin.
Biskra																			Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Agram	29.22	742.3	29.74	755.5	77.2	25.1	55	S			4		4			0.224	5.7		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.02	737.1	29.79	756.6	76.3	24.6	55	NNE	3.4	1.5			9			0	0		Dr. Wierzbicki.
Eperies	28.88	733.5	29.72	754.8	72.7	22.6	67	S			2		8ks			0	0		Julius Mikolik.
Gratz	28.50	725.4	29.76	755.9	69.8	21.0	70	NE			3		7			0	0		Andreas Rospini.
Hermannstadt	28.34	719.7	29.68	753.9	76.3	24.6	63	S			2		6			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.46	722.8	29.74	755.3	71.1	21.7	68	Calm			0		5			0.063	1.6		The Staff.
Lemberg	28.73	729.7	29.67	753.6	72.3	22.4	58	NW			1		6			0	0		Dr. T. Stanecki.
Pola	29.71	754.5	29.81	757.2	75.4	24.1	62	WNW			2		3			0	0		I.R. Hydrographic Office.
Szathmar	29.32	744.8	29.76	756.0	76.6	24.8	57	SW			2		6			0	0		Pet. Pancsics, S. J.
Szegedin	29.47	748.6	29.74	755.4	74.1	23.4	72	SW			1		7			0.130	3.30		Karl Stancel.
Trieste	29.72	754.9	29.82	757.5	77.2	25.1	66	Calm			0		0			0	0		P. Busin.
Vienna	29.08	738.5	29.81	757.1	74.1	23.4	51	NE			1		6			0.035	0.9		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall. Inches.	Rain-fall. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.56	750.8	29.75	755.7	69.3	20.7	68	WSW			1	4	3	S	S	0	0		Royal Observatory.
Furnes	29.76	755.9	29.78	756.5	73.0	22.8	66	SW			1		6			0.004	0.1		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.81	757.2	29.91	759.7	51.7	10.9		SE	14	6.3			10			0	0	Overcast	W. Boswell.
Ardrossan	29.75	755.6	29.76	755.9	70	21.1		NE			3		3					Blue sky	G.Carrick.
Armagh, (Observatory)	29.50	749.3	29.72	754.9	65.6	18.3		E	12	5.4			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.70	754.4	60.3	15.7		ENE	15	6.7			10					Misty	John Hartnup.
Bolton (Sharples)	29.15	740.4	29.66	753.4	59.8	15.4		ENE	10	4.5			10					Raining	Thomas Mackereth.
Bradford, Yorkshire	29.35	745.5	29.74	755.4	59.2	15.1	88	NW			4		10			0.26	6.6	Overcast	J McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	81	27.2		NE			2		9					Raining	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.61	752.1	29.70	754.4	68.5	20.3		S			1		7						H. Todd.
Cardington			29.68	753.9	68.6	20.0		W			0.4		8					Overcast	John McLaren.
Chatham (School M. E.)	29.61	752.1	29.74	755.4	66.6	18.9		Calm			0		7k					D. clouds	Lance Crp'l Hocker,R.E
Donaghadee	29.71	754.6	29.75	755.6	62	16.7		NNE			2		0					Blue sky	J. Mac Gowan.
Dover	29.72	754.9	29.74	755.4	63	17.2		SW			2		1					¾ clouded	J. Costello.
Falmouth (Observatory)	29.40	746.7	29.63	752.6	58.5	14.7		SSE			2		10					Foggy	The Staff.
Fort Napier, Natal	27.94	709.7	30.15	765.8	66.4	19.1		NE			1		0					Blue sky	Corp'l H.Coombs,A.H.C
Free Town, Sierra Leone	29.73	755.1	29.96	761.0	82	27.8		SE			1		8					Drizzling	
Galway (Queen's College)			29.60	751.8	65	18.3		SE			2		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean	30.02	762.5	30.06	764.0	68.6	20.3		SW			6		8					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.58	751.3	29.78	756.4	63.9	17.7		NNE			2		0					Blue sky	D. G. Maclean.
Great Yarmouth	29.75	755.6	29.75	755.6	62	16.7		S			2		4					Showery	G. T. Watson.
Greenwich (Royal Obs'y)	29.54	750.3	29.71	754.6	69.3	20.7		SSW			1		6					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.49	749.0	29.70	754.4	61	16.1		SE			2		7					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	29.81	757.2	29.93	760.2	69	20.6		ESE			2		k			0.15	3.8	Fair	M. P. Moyle.
Holyhead	29.65	753.1	29.68	753.9	57	13.9		ENE			3		5					Raining	John Tilston.
Jersey	29.42	747.3	29.71	754.6	61.0	16.1		S			2		9					Gloomy	J. Fisher.
Kew (Observatory)	29.67	753.6	29.71	754.6	66.6	18.9		S	12	5.4			7					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.44	747.8	29.69	754.1	59.1	15.1		NE			1		10					Raining	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.76	755.9	29.83	757.7	76.2	24.6		NW			2		6					D. clouds	A. King.
Nairn	29.72	754.9	29.82	757.4	63	17.2		E			2		0					Clear	W. D. Penny.
Nassau, Bahamas			30.06	763.5	87.0	30.6		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.55	750.6	29.73	755.1	60.0	15.6		N			1		10n			0.300	7.62	Raining	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.18	741.1	29.70	754.4	56.5	13.6		ENE			1		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.46	748.3	29.72	754.9	65	18.3		SSE			1		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.57	751.1	29.65	753.1	60.5	15.8		SE			4		10					Overcast	John Merrifield.
*Roche's Point	29.56	750.8	29.67	753.6	59	15.0		ESE			4		10					Raining	Wm. Kennedy.
St. Ann's Head	29.47	748.5	29.83	752.6	57	13.9		ESE‖			1		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys			29.89	759.2	56	13.3		SE	17	7.6			10					Misty	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.76	755.9	29.82	757.4	77.2	25.1		SW			1		2					D. clouds	Serg't W. H. Lyne.
Sheffield	29.42	747.3	29.70	754.4	57.9	14.4		ENE			1		10			0.18	4.6	Overcast	W. F. Cooper.
Silloth Rectory	29.71	754.6	29.74	755.4	71.8	22.1	62	E			6		2			0.033	0.84	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.72	754.9	60.0	15.6		NE	8	3.6			10					Raining	Rev. S. J. Perry.
Stratfield Turgiss	29.49	749.0	29.70	754.4	67.3	19.6		NE			2		4					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	29.64	752.8	29.65	753.1	63	17.2		SE			2		9					Gloomy	W. Newcombe.
Valencia (Observatory)	29.56	750.8	29.58	751.5	59.7	15.4		NE			3		10					Raining	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	30.36	771.1	30.40	772.1	60.2	15.7	77	WNW	6.7	3.0		10	9n			0	0		The Staff, for D. Gill.
Hobart Town, Tasmania			30.12	765.0	43.0	6.1	74	S			2		10kn			0.30	7.6	Showery	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.86	758.4	55.8	13.2		E			3		10s			0.22	5.6	Overcast	Andrew Gibb.
Mauritius (Observatory)	30.01	762.2	30.20	767.1	70.4	21.3	74	ESE	18.5	8.3		0	8		ESE	0.06	1.5	Squally	C. Meldrum.
Melbourne (Observatory)	30.12	765.0	30.21	767.3	47.0	8.3	86	W	9	4.0			8			0.03	0.8	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.80	756.9	65	18.3		Calm			0	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.90	759.4				NE			2		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction.	Wind. Velocity.	Wind. Force.	Clouds. Amount.	Clouds. Direction.	Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert																Capt.J.P. Maclear, R.N.
City of Agra																Capt. Thos. Young.
City of Cashmere																Capt. W. M. Grieve.
Barque Commewyne																Capt. Jas. Buchan.
Ship British Commodore																Capt. J. W. Thorne.
Barque Decapolis																Capt. T. M. Almond.
Barque Dochra																Capt. H. Spalding.
S. S. Ethiopa, N. 40° 40′, W. 63° 30′			30.28	769.1	67	19.4		N			4	2	W	4	E:NE	Blue sky	Capt. A. Campbell.
Barque Fedalma																Capt. H. L. Fox.
Brig. Fylde																Capt. L. C. Dart.
S. S. German																Capt. C. D. Coxwell
S. S. Gordon Castle																Capt. Wm. Waring.
Barque Hope																Capt. Jas. Campbell.
Iron Cross, N. 25° 05′, W. 80° 00′			30.10	764.5	83	28.3		N			1	3		4	N	D. clouds	Capt. W. Randall.
Ship Lochee, S. 31° 10′, E. 35° 20′			30.32	770.1	65.9	18.8		Calm			0	0				D. clouds	Capt. J.Raeburn,R.N.R.
Barque Queen of Cambria, N 45° 35′, W. 28° 50′			29.65	753.1	59.1	15.1		WSW			6	9				Squally	Capt. M. Parry.
S S. Richmond																	Capt. W. H. Stuart.
Barque Royal Alexandra																	Capt. W. P. Hughes.
S. S. Strathleven																	Capt. C. W. Pearson.
S. S. Sunbeam																	Capt. O. M. Dobson.
S. S, Wyberton, N. 35° 09′, E. 18° 20′			29.77	756.1	77.5	25.3		WSW			3	2				Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.23	666.2	29.95	760.7	68.9	20.5	86	SE			2	2c	1d			0	0	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.83	757.6	29.87	758.8	69.6	20.9	52	E			2		1						
Fanöe	29.84	757.9	29.86	758.4	72.1	22.3	58	W			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.93	760.3	29.98	761.4	59.9	15.5	79	Calm			0		5						
Thorshavn (Faröe)	29.93	760.2	29.97	761.1	55.0	12.8	78	E			2		10						
Vestervig	29.80	757.0	29.90	759.4	67.8	19.9	52	NW			2		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.21	741.8	29.76	755.8	71.6	22	66	SW			1		8kn		SW	0.08	2.	Very cloudy	Collignon, Director.
Amiens, Normal School	29.78	756.3	29.88	759.0	77.0	25	97	ESE			1		0			0.614	15.6	Clear	Vaillant, Director.
Arras, Engineer School	29.44	747.7	29.69	754.0	63.9	17.7	76					c	5n		E	0.146	3.70		Klein, Commandant.
Avignon, Normal School	29.76	756.0	29.84	758.0	75.2	24	60	SSE			2		8		SSE	0	0	Very cloudy	Giraud, Director.
Bar-sur-Seine	29.24	742.6	29.76	756.0	72.2	22.9	62	SSE			1		8kn		SW	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.50	749.4	29.76	755.8	73.2	22.9	52	S			1		8		S	0.079	2.00	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.94	735.0	29.79	756.7	78.4	23	56	W			1		2		S	0	0	Slightly cl'dy	A. Carré, Director.
Bordeaux	29.52	749.7	29.71	754.7	59.0	15.0	93	WSW			3		10		SW	0.713	18.1	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.93	734.9	29.86	758.4	74.1	23.4	65	S			3	5c		S	S	0.08	2.	Cloudy	Marlot, Director.
Bourges, Normal School	29.21	741.9	29.74	755.5	67.5	19.7	85	ESE			1	ck		ESE		0.252	6.4		M. Gence, Director.
Brest, Naval Observatory	29.43	747.5	29.67	753.7	65.1	18.4	80	S			1		10		S	0.010	0.25	Raining	Ch. de Rermaree, Dir
Caen, Normal School	29.61	752.1	29.69	754.0	67.3	19.6	67	SE			1		8		SE	0.173	4.4	Very cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.31	744.5	29.71	754.7	68.0	20	80	E			2		5		E	0.067	1.7	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.48	748.9	29.79	756.7	74.5	23.6	52	SW			1		2		WNW	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.27	743.4	29.82	757.3	68.0	20	87	W			1		5		E	0.20	5.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.40	721.4	29.69	754.2	71.1	21.7	58	SE			1		10			0.201	5.1		Alluard, Director.
Commercy, Normal School	28.95	735.3	29.78	756.3	69.8	21	65	WSW			1		kn	WSW	WSW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.78	730.9	29.92	759.9	71.2	21.8	62	SE			2		8		SE	0	0		L. Kina, Director.
Grenoble, Normal School	29.04	737.5	29.76	756.0	75.6	24.2	60	WNW			1	ck				0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.41	752.2	29.83	757.6	63.0	17.2	92	SE			1		10			0.059	1.5	Covered	Mouillot, Director.
Le Mans, Normal School	29.43	747.5	29.74	755.5	66.7	19.3	70	SSE			3		10		SE	0.307	7.8	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.04	737.6	29.77	756.1	74.7	23.7	65	SW			1		2kn		SW			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	29.58	751.3	29.68	753.8	60.1	15.6	85	SSE			3		10		S	0.260	6.60	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.15	740.5	29.74	755.4	77.4	25.2	45	S			1		5n			0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.66	751.9	29.87	758.6	70.5	21.4	71	SE			1		10		S	Inap.	Inap.	Covered	E. Stephan, Director.
Mirecourt, Normal School	28.82	732.1	29.82	757.5	72.9	22.7	64	SSW			1		kn		SSW	0	0		Barbier, Director.
Mont-Louis	24.66	626.4	29.90	759.4	51.4	10.8	75	W	26.2	11.7			6		NW	0.075	1.9		M. Cave, for Dr. Fines.
Nice	29.85	758.2	29.88	759.0	75.2	24.0	72	SW			3		10	E	SW	0	0	Covered	Capt. Boissière, Director.
Nismes, Normal School	29.62	752.3	29.82	757.4	70.7	21.5	70	SE			3		10		SE	0	0	Covered	M. Boyer, Director.
Perpignan	29.64	752.9	29.74	755.5	65.5	18.6	81	E	5.6	2.5			10		SE	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.39	568.7			42.4	5.8							10		SW	0.354	9.0	Rainy	M. Baylac, for Geu'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.77	730.8	29.80	756.8	70.7	21.5	65	S			1		5	S	S	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Ob	24.99	634.7			52.9	11.6	93	ESE			2		10		S	0.197	5.0	Misty	Alluard, Director.
Rochefort, Naval Obs'y	29.69	754.1	29.72	754.9	68.2	20.1	63	SW			3		10	SW	SW	0	0	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.66	753.4	29.75	755.6	66.2	19.0	67	SE			1		10		SE	0.063	1.6	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.64	752.8	29.67	753.6	62.8	17.1	76	SSE			3		8	SSE	SSE	0.150	3.80	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.61	752.6	29.77	756.2	72.7	22.6	52	SSW			2		9	SSW	S	0.035	0.9	Very cloudy	E. Renou, Director.
Tarbes, Normal School	28.72	729.4	29.80	756.8	53.6	12	76	W			1								T. Huguet, Director
Toulouse, Observatory	29.07	738.3	29.79	756.6	67.6	19.8	72	SSE			3		10			0	0	Covered	B. Baillard, Dir.
Tours	29.53	750.0	29.72	755.0	66.9	19.4	76	SE			1		10		S	0.071	1.8	Covered	M. de Tastes.
Versailles, Observatory	29.28	743.8	29.78	756.3	71.6	22.0	50	SW			3					0.181	4.60		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S'	29.01	736.9	29.71	754.5	64.8	18.2	88	SE			1		5		S	0	0	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.25	768.3	30.28	769.0	78.8	26										0.67	17.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.50	749.2			71.1	21.7	53	SSE			1		9		SSW	0.048	1.1		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.77	756.2	29.80	756.8	73.2	22.9	91	ESE	6.3	2.8		ck	10k	W	ESE	0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upper 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.96	735.5	29.82	757.3	78.6	25.9	57	E			4		4k	E		0	0		Prof. Dr. Hoh.
Berlin	29.66	753.3	29.82	757.5	76.1	24.5	47	E			1		8			0	0		Prof. Dr. Arndt.
Breslau	29.32	744.8	29.85	758.2	73.8	23.2	47	NNW			1		8			0	0		Royal University Obs'y
Carlsruhe	29.39	746.6	29.80	757.0	72.0	22.2	78	S			0		5	SW		0	0		Albert Senz.
Cassel	29.18	741.2	29.78	756.5	77.2	25.1	50	E			3		4	E		0.009	0.24		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.47	748.5	29.83	757.7	78.1	25.6	40	SE			1		7			0	0		Physical Society.
Friedrichshafen	28.38	720.9	29.76	755.8	70.9	21.6	55	SW			1		1	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.77	756.2	29.85	758.1	73.9	23.3	62	SE			3		7			0	0		Dr. Reinhold Kleeman.
Kiel	29.84	758.0	29.86	758.4	70.7	21.5	51	NE			2		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.71	754.6	29.79	756.6	67.8	19.9	60	NW			5		1	NW		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.42	747.2	29.82	757.4	75.9	24.4	52	NE			1		4			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.61	752.2	29.84	757.9	75.4	24.1	57	ENE			2		7k	ENE		0	0		Dr. Assmann.
Memel	29.76	755.8	29.80	757.0	64.2	17.9	54	NNW			3		4k						Reinbrecht & Issermann.
Munich	28.02	711.7	29.87	758.7	73.2	22.9	45	W			1		5			0	0		Dr. C. Lang.
Neufahrwasser	29.84	757.8	29.85	758.2	61.9	16.6	74	NW			3		1			0	0		A. Lothes.
Neustadt (Palatinate)	29.26	743.2	29.78	756.5	68.0	20.0	82	WSW			1		7	W		0.669	17.0	Heavy rain.	Reallehrer Dicknether.
Posen	29.51	749.6	29.79	756.6	75.6	24.2	42	N			2		5			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.27	743.5	29.80	756.9	73.9	23.3	60	NE			1–2		7	NW		0.060	1.52		Imp. University Observatory.
Stuttgart	28.83	732.2	29.67	753.7	76.1	24.5	49	S					5	W		0	0		Prof. Dr. Schoder.
Thorn	29.60	751.9	29.79	756.6	77.7	25.4	26	NW			4		9			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.35	720.0	29.92	759.9	71.6	22.0	62	NW	2.5	1.1			5ks		NW	0.146	3.7	Raining	Reallehrer J. Hopfner.
Wustrow	29.85	758.3	29.88	759.0	67.3	19.6	70	NE			2		2s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.50	749.4	29.88	759.0	77.2	25.1		SW			2.0		8			Inap.	Inap.	¾ covered	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.55	750.5	29.60	751.8	84.1	28.9	78	SW	38.2	17.1			4		WSW	0	0	Misty	
Deesa	29.09	738.9	29.55	750.4	96.6	35.9	44	SW	23.3	10.4			0			0	0	Misty	
Bombay	29.72	754.9	29.76	755.8	86.6	30.3	72	WNW	16.0	7.2			2		WNW	0	0	D. clouds	
Poona (Yarrowda)	27.89	708.5	29.73	755.1	82.8	28.2	54	W	25.0	11.2			1		W	0	0	D. clouds	
Belgaum	27.28	692.9	29.83	757.8	72.2	22.3	81	W	13.0	5.8			9	SW	SW	0	0	D. clouds	
Lahore	28.60	726.5	29.30	744.1	107.3	41.8	27	W	2.3	1.0			0			0	0	Misty	
Roorkee	28.51	724.1	29.37	745.9	95.2	35.1	36	SW	3.0	1.3						0	0		
Agra	28.87	733.2	29.40	746.7	104.6	40.3	29	SW	8.3	3.7						0	0		
Nagpur	28.54	725.0	29.55	750.5	96.7	35.9	32	W	6.3	2.8			5	W		0	0		
Jubbulpore	28.21	716.6	29.52	749.9	96.2	35.7	33	W	6.6	3.0			6			0	0	D. clouds	
Lucknow	29.08	738.5	29.43	747.6	100.4	38.0	41	SSW	2.7	1.2			10	Calm		0.10	2.5	Overcast	
Allahabad	29.14	740.2	29.44	747.7	101.2	38.4	40	W	4.8	2.2			4			0.01	0.3	Misty	
Patna	29.32	744.6	29.49	749.0	90.3	32.4	69	E	2.6	1.2			6	E	E	0.04	1.0	D. clouds	
Hazaribagh	27.56	699.9	29.52	749.7	87.3	30.7	60	Calm	8.5	3.8			5			0.16	4.1	Showery	
Cuttack	29.46	748.4	29.54	750.4	94.9	34.9	47	S	1.6	0.7			8			0	0	D. clouds	
Calcutta (Alipore)	29.53	749.9	29.55	750.5	84.7	29.3	79	SE	5.0	2.2			10	E	E	0.04	1.0	Overcast	
Goalpara	29.15	740.3	29.55	750.7	77.7	25.4	92	Calm	3.7	1.6			5	W	W	2.92	74.4	D. clouds	
Chittagong	29.56	750.8	29.65	753.0	82.7	28.2	87	SW	5.6	2.5			8			0	0	D. clouds	
Sibsagar	29.29	744.0	29.62	752.4	81.8	27.7	88	NNE	2.1	0.9			8	SSW	SSW	0.06	1.5	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,016 ft., or 614 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.43	747.4	29.82	757.5	76.1	24.5	49	W	1.3	0.6			3			0	0		Prof. Giovanni Clodig.
Milan	29.32	744.8	29.82	757.5	78.1	25.6	45	WSW	5.6	2.5			3	W		0.102	2.6		Prof. Schiaparelli.
Padua	29.82	757.3	29.93	760.1	76.8	24.9	54	SW	1.3	0.6			7	SW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.94	735.0	29.82	757.5	74.1	23.4	61	ESE	3.5	1.1			8	NNE		0.567	14.4		Prof. P. F. Denza.
Genoa	29.69	754.2	29.88	759.0	71.6	22.0	69	SW	4.9	2.2			2	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	27.95	710.0	29.82	757.4	73.4	23.0	52	NW			2		7	W		0	0		Prof. D. C. Bruno.
Pesaro	29.78	756.4	29.83	757 6	73.0	22.8	70	NE	8.1	3.6			7	W		0	0		Prof. Luigi Guidi.
Florence	29.57	751.1	29.82	757.5	79.7	26.5	41	W			2		2			0	0		Cav. F. Meucci.
Leghorn	29.83	757.7	29.92	759.9	73.4	23.0	66	WSW	4.3	1.9			3	WSW		0	0		Prof. P. Monte.
Rome	29.63	752.7	29.81	757.1	84.9	29.4	35	WSW					6			0	0		Prof. P. S. Ferrari.
Lecce	29.56	750.7	29.80	756.9	81.5	27.4	27	W	11.2	5.0			4			0	0		Prof. C. De Giorgi.
Cosenza	28.95	735.2	29.80	756.8	85.3	29.6	67	NW	3.1	1.4			6			0.031	0.8		Prof. D. Conti.
Cagliari	29.67	753.6	29.86	758.5	78.1	25.6	57	S			2		8			0	0		Prof. A. Pacinotti.
Palermo	29.65	753.0	29.89	759.3	76.8	24.9	63	ENE	6.9	3.1			8			0	0		Prof. G. Ciacciatore.
Syracuse	29.78	756.3	29.82	757.4	79.7	26.5	60	NE	4.9	2.2			7	SW		0	0		Prof. V. G. Guliano
SUB-SERIES.																			
Naples, S. R.	29.31	744.5	29.82	757.3	76.6	24.8	68	SW	1.3	0.6			4			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.6	20.3	68	NE	10.5	4.7			8ck;cs;s			0	0	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.61	752.1	29.81	757.2	63.1	18.9	86	N	3.3	1.5			1cs			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.69	754.1	29.76	755.9	64.1	17.8	93	ENE	5.5	2.6			10n			0.215	5.46	Raining	The Staff.
Wakayama	29.71	754.6	29.76	755.9	67.6	19.8	78	NW	0.3	0.1			6ck;ks	W		0	0	Fair	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.11	637.9	30.13	765.2	58.6	14.8	76	SE			1		9ks		E	0.12	3.0	Very cloudy	Prof. L. Perez.
Guanaxuato																0.008	0.20		Vicente Fernandez.
Leon	24.49	622.0	30.17	766.4	60.1	15.6	89	SW			2	1c	0			0.85	21.6		Prof. M. Leal.
Mazatlan	29.73	755.0	29.98	761.6	78.0	25.6	91	NE			2	6ck	1k	SE		0.41	10.4	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.13	587.6	30.12	765.1	55.6	13.1	81	Calm	0	0		2k	0	NE		0.07	1.8		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	24.03	610.4	30.02	762.6	59.5	15.3	88	NE			1	2c	1s	NE		0.34	8.6	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	596.4	30.30	769.6	50.7	10.4	42	Calm	0	0		1c	0	E		Inap.	Inap.	Clear	Prof. P. Spina.
San Luis Potosi	24.30	617.3	30.25	768.4	60.8	16.0	42	E			1		10		E	0	0	Covered	G. Barroeta, M. D.
Tlacotalpam	30.00	762.0	30.01	762.3	76.3	24.6	97	Calm			0	3	1	SW	NW	0	0	Fair	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.68	576.0	30.30	769.5	55.4	13.0	86	SE			2		9n		SE	0	0	Very cloudy	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.78	756.4	29.78	756.4	67.3	19.6		WNW			2					0	0		
Groningen	29.74	755.3	29.79	756.7	75.2	24.0		E			4					0	0		
Helder	29.76	755.9	29.76	755.9	73.2	22.9		E			1					0.016	0.4		
Hellevoetsluis	29.76	756.0	29.76	756.0	69.8	21.0	75	W			1					0	0		
Utrecht	29.71	754.6	29.76	755.8	77.0	25.0	56	SSE			1		5			0.122	3.1	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.84	758.0	29.90	759.4	62.6	17.0	70	WNW	9.2	4.1			3			0	0		
Brönö	30.02	762.4	30.06	763.4	54.0	12.2	66	NNW	18	8			2			0	0		
Christiania	29.75	755.6	29.89	759.1	75.4	24.1	46	ENE	11	5			2			0	0		
Tromsö	30.03	762.7	30.08	764.1	45.7	7.6	72	SSE	4	2			10			0.071	1.8		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	29.86	758.5	30.07	763.8	69.8	21.0	91	W			3		9			0	0		Dr. J. A. Sampaio.
Campo Major	28.99	733.9	29.88	758.9	64.4	18.0	94	SSW	9.4	4.2			10			0.335	8.5	Heavy rain	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.09	764.2	30.17	766.4	73.0	22.8	70	SW	3.8	1.7			3			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.61	752.2	29.97	761.2	65.1	18.4	77	WSW	18.6	8.3			10			0.886	22.5		The Staff.
Ponta Dèlgada (Azores)	30.03	762.7	30.10	764.5	66.9	19.4	90	W	4.9	2.2			10			0.248	6.3	Light rain	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd t.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.87	758.8	71.6	22.0		NW			2		0			1	NW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sâ da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			30.03	762 7	68.4	20.2		NW			3		0			2	NW		Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.38	746.3	29.40	746.8	38.3	3.5	85	NNW	22	10			10						Capt. Sselliwerstow.
Astrakhan	29.65	753 0	29.56	750.9	75.9	24.4	34	SSW	34	15			1s						Capt. Wisganow.
Barnaul	29.15	740.3	29.62	752 3	72 9	22.7	64	SW	7	3			10					Light clouds	Meteorological Obs.
Dorpat	29.52	749.9	29.76	756.0	56.8	13.8	55	N	9	4			7k						Prof. Dr. Weihrauch.
Ekaterinburg	28.02	711.7	28.94	735.0	52.9	11.6	80	SW	4	2			10					Raining	Meteorological Obs.
Irkutsk																			
Kasan	28.80	731.6	29.06	738.2	54.1	12.3	52	WSW	16	7			8kn						Physical Cabinet.
Kertch	29.70	754.4	29.72	754.9	76.1	24.5	48	WNW	9	4			2						Lagorio.
Kieff	28.96	735.6	29.57	751 0	69.6	20.9	60	WNW	11	5			6cks						Physical Cabinet.
Krotkowo*	28.87	733.2	29.32	744.8	59.5	15.3	50	WNW	9	4			5					Light rain	Cand. Fatjanow.
Lugan	29.21	741.8	29.40	746.7	79.7	26.5	35	WSW	34	15			8						Meteorological Obs.
Moscow	29.07	738.3	29.61	752.2	50.0	10.0	64	N	13	6			4ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.64	752.9	29.71	754.7	81.1	27.3	39	W	13	6			0						Kurdakof.
Nikolaievsk, on the Amoor	29.91	759.6	29.99	761.8	57.7	14.3	82	E	2	1			0						
Nukuss	29.54	750.2	29.76	755.8	82.9	28.3	23	SSW	3.1	1.4			0						
Orenburg																			
Pekin (China)	29.70	754.4	29.84	758.0	69 6	20.9	89	Calm	0	0			2cs						Physical Observatory.
St. Petersburg	29.64	752.9	29.66	753.3	54.0	12.2	44	N	16	7			6n;ks						Central Physical Obs.
Tashkend	28.28	718.4	29.76	755.9	82.4	28.0	49	Calm	0	0			0						Teich, A. M.
Tiflis	28.30	718.7	29.64	752.9	72.7	22.6	50	SW	4	2			9cs						Physical Observatory.
Vladivostock																			
Warsaw	29.34	745.3	29.75	755 6	74.8	23.8	41	NE	9	4		7ck							Astronomical Obs.
Wilna	29.29	744.0	29.70	754.3	63.9	17.7	64	WNW	4	2			7						Astronomical Obs.
Yeniseisk	29.56	750.7	29.83	757.7	69.4	20.8	38	NE	2	1			0						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.71	754.6	29.81	757.2	74.5	23.6	60	SW	4.0	1.81			1k			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.69	754.0	29.74	755.4	76.6	24.8	59	SW	3.0	1.36		3	2	SE		0.028	0.7	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.93	683.9			61.5	16.4	85	S	12.0	5.56			10			0.394	10.0	Covered	Domingo Martin y Perez.
Madrid, Royal Observatory	27 70	703.5	29.91	759.6	59.0	15.0	80	SW	16 4	7.33		0	10			0.059	1.5	Covered	The Staff.
Murcia, Met. Obs'y	29.73	755.2	29.87	758.8	86.4	30.2	32	NW	2.1	0.92		2	3	NE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.83	732.3	29.72	754.8	57.1	14.1	93	SW	11.3	6.4			10			0.472	12.0	Raining	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	761.9	30.06	763.6	85.6	29.8	71	Calm	0	0		0	0			0	0	Clear.	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.2	29.90	759.5	83.9	28.8	74	SE	4.4	2.0		2cs	3kn	E	W	0	0	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.02	762.6	30.12	765.1	64.9	18.3	72	SSW	10.6	4.7		0	10		SW	0.008	0.2		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.03	762.7	30.12	765.0	79.9	26.6	85	SE	2.8	1.24		1k	2k	SE	SE	0.236	6.00	Clear	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.95	760.7	29.99	761.7	55.0	12.8	.....	N	.....	.....	6	.....	4	.....	.....	0	0	.....	
Umea	30.00	762.0	30.05	763.3	54.7	12.6	52	SSE	.....	.....	4	.....	8	.....	.....	0	0	.....	
Hernosand	30.01	762.3	30.07	763.6	60.1	15.6	44	SSW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Stockholm	29.82	757.4	30.00	761.9	55.8	13.2	45	NNE	.....	.....	6	.....	1	.....	.....	0	0	.....	
Wisby	29.86	758.4	29.92	759.9	57.2	14.0	76	NNE	.....	.....	4	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.92	760.0	30.01	762.2	55.8	13.2	38	NE	17.2	7.7	.....	.....	0	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga	.....	.....	.....	.....	M. von Krusenstierna.
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.89	721.2	29.78	756.8	69.8	21.0	50	NNE	.....	.....	2	.....	6	.....	.....	0	0	Vapory	The Observatory.
Zurich	28.21	716.5	29.77	756.1	78.1	25.6	51	W	.....	.....	2	.....	2	.....	.....	0	0	Clear	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —5.5 mm.; Thermometer, —0.1 Cent. Relative Humidity, —5 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.86	758.5	75.2	24.0	45	SE	9	4.0	.....	.....	4	.....	NE	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.88	759.0	83.3	28.5	.....	S	.....	.....	2	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.67	753.7	86.4	30.2	60	SW	.....	.....	4	.....	2ks	.....	SW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	65.0	18.3	.....	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Hon. J. Ferguson
Chatham, N. B.	30.02	762.5	30.08	764.0	60.4	15.8	79	SW	2	0.9	.....	0	Haze	.....	.....	0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	30.06	763.5	30.10	764.5	59.9	15.5	79	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	H. J. Cundall, C. E.
Cornwall, Ontario	29.99	761.7	30.18	766.6	67.8	19.9	62	SW	.....	.....	2	0	0	.....	.....	0	0	Clear.	James Smith, M. A
Dalhousie, N. B.	29.91	759.7	30.07	763.8	55.5	13.1	75	W	.....	.....	2	0	0	.....	.....	0	0	Clear.	H. A. Johnson.
Father Point, Quebec	30.05	763.3	30.07	763.8	59.6	15.3	68	SW	3	1.3	.....	Haze	Sm'e	.....	.....	0	0	Smoky.	J. McWilliams.
Fredericton, N. B.	30.06	763.5	30.12	765.0	67.1	19.5	70	S	1	0.4	.....	Sm'e	Sm'e	.....	.....	0	0	Smoky.	Prof. Harrison.
Fort Garry, Manitoba	29.28	743.7	30.08	764.0	66.0	18.9	84	S	4	1.8	.....	0	Haze	.....	.....	0	0	Hazy.	James Stewart.
Granton, Ontario	29.20	741.7	30.27	768.8	68.0	20.0	74	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	30.02	762.5	30.15	765.8	65.9	18.8	63	S	1	0.4	.....	0	0	.....	.....	0	0	Clear.	A. Allison.
Hamilton, Ontario	29.89	759.2	30.27	768.8	67.1	19.5	70	NE	.....	.....	1	0	0	.....	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.88	758.9	30.22	767.6	65.8	18.8	79	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	30.08	764.0	30.12	765.0	63.2	17.3	63	Calm	0	0	.....	4c	0	N	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.96	761.0	30.16	766.1	68.1	20.1	62	SW	13	5.8	.....	0	0	.....	.....	0	0	Clear.	C. H. McLeod, C. E.
Moose Factory, Ontario	30.34	770.6	30.38	771.6	70.8	21.6	53	NE	.....	.....	1	1c	0	.....	.....	0	0	Clear.	J. R. Nason.
Norwood, Ontario	29.53	750.0	30.21	767.3	67.8	19.9	66	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.58	751.3	30.25	768.3	67.0	19.4	74	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.53	750.0	30.25	768.3	71.2	21.7	57	Calm	.....	.....	0	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.60	751.8	30.28	769.1	64.1	17.8	78	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	H. Morgan.
Port Stanley, Ontario	29.64	752.8	30.27	768.8	70.0	21.1	72	W	1	0.4	.....	5ck	0	W	.....	0	0	Fair	M. Payne.
Quebec, Quebec	29.85	758.2	29.95	760.7	65.0	18.3	73	W	.....	.....	3	0	2s	.....	.....	0	0	Clear.	Capt. Ashe, R. N.
Rockliffe, Ontario	29.76	755.9	30.21	767.3	63.0	17.2	64	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.96	761.0	30.13	765.3	57.0	13.9	75	S	5	2.2	.....	0	0	.....	.....	0	0	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.54	750.3	30.24	768.1	68.7	20.4	62	SE	5	2.2	.....	1k	Sm'e	.....	.....	0	0	Smoky	K. Stewart.
Stratford, Ontario	29.02	737.1	30.28	769.1	61.9	16.6	77	Calm	0	0	.....	2cs	0	.....	.....	0	0	Clear	C. J. MacGregor, M. A.
Sydney, C. B.	29.09	738.9	30.13	765.3	68.3	20.2	58	Calm	0	0	.....	5c	0	E	.....	0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.90	759.4	30.28	769.1	69.7	20.9	44	N	6	2.7	.....	2cs	0	.....	.....	0	0	Clear	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	29.20	741.7	30.23	767.8	70.2	21.2	64	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Professor Wolverton.
Yarmouth, N. S.	30.12	765.0	30.19	766.8	57.4	14.1	74	W	8	3.6	.....	.....	Fog	.....	.....	0	0	Light fog	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.97	761.2	30.21	767.3	65	18.3	45	W	4	1.8	.....	2c	2s	.....	.....	0	0	Fair	John Delany.
St. Pierre, N. F., l'Hopital Maritime.	.....	.....	30.06	763.5	57.2	14.0	.....	W	.....	.....	2	.....	.....	.....	.....	0	0	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.20	767.1	30.28	769.1	73	22.8	55	S	3	1.3		1k	Sm'e	W	Calm	0	0	Clear.	
Alpena, Michigan	29.63	752.6	30.26	768.6	66	18.9	69	NW	5	2.2		2ck	0	Calm		0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.11	739.4	30.24	768.1	66	18.9	59	E	5	2.2		10c	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.28	769.1	30.29	769.4	69	20.6	85	S	4	1.8		Haze	Haze	Calm	Calm	0	0	Dense haze	
Augusta, Georgia	30.10	764.5	30.30	769.6	71	21.7	49	NE			1	2cs	Haze	N	Calm	0	0	Fair	
Baltimore, Maryland	30.26	768.6	30.31	769.9	73	22.8	46	NW	2	0.9		0	0			0	0	Clear	
Barnegat, New Jersey	30.27	768.8	30.29	769.4	74	23.3	68	S	6	2.7		0	Haze		Calm	0	0	Clear.	
Bismarck, Dakota	28.16	715.3	30.02	762.5	68	20.0	90	SE	12	5.4		0	0			0	0	Clear.	
Boerne, Texas	28.53	724.6	29.81	757.2	65	18.3	73	E	2	0.9		0	0			0	0	Clear.	
Boise City, Idaho	27.30	693.4	30.26	768.6	48	8.9	56	NW	3	1.3		0	0			0	0	Clear	
Boston, Massachusetts	30.09	764.3	30.24	768.1	71	21.7	62	W	5	2.2		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.96	735.6	29.99	761.7	70	21.1	80	E	6	2.7		0	0			0	0	Clear	
Breckenridge, Minnesota	29.11	739.4	30.07	763.8	67	19.4	79	SE	10	4.5		0	0			0	0	Clear.	
Brownsville, Texas	30.02	762.5	30.07	763.8	76	24.4	100	Calm	0	0		2cs	0	Calm		0	0	Clear.	
Buffalo, New York	29.57	751.1	30.26	768.3	67	19.4	60	SW	4	1.8		0	Haze		Calm	0	0	Clear	
Burkes, Arizona					87	30.6	49	Calm			0	2k	8s	Calm	W	0	0	Threatening	
Burlington, Vermont	29.94	760.5	30.22	767.6	69	20.6	65	SW	7	3.1		0	0			0	0	Clear.	
Cairo, Illinois	29.89	759.2	30.28	769.1	71	21.7	75	S	8	3.6			10s		Calm	0.01	0.3	Threatening	
Campo, California	27.35	694.7	29.92	760.0	44	6.7	76	SW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.23	767.8	30.24	768.1	70	21.1	57	NE	18	8.0		2cs	Haze	Calm	Calm	0	0	Hazy	
Cape Henry, Virginia	30.27	768.8	30.29	769.4	69	20.6	65	NW	6	2.7		0	Haze		Calm	0	0	Clear.	
Cape Lookout, N. Carolina	30.23	767.8	30.24	768.1	72	22.2	58	NE	23	10.3		2c	0	Calm		0	0	Clear.	
Cape May, New Jersey	30.24	768.1	30.27	768.8	70	21.1	75	SW	2	0.9		0	0			0	0	Clear.	
Castroville, Texas	29.34	745.2	30.04	763.0	67	19.4	79	W	2	0.9		0	0			0	0	Clear	
Cedar Keys, Florida	30.09	764.3	30.12	765.0	74	23.3	81	NE	15	6.7		0	0			Inap.	Inap.	Clear.	
Charleston, South Carolina	30.16	766.1	30.22	767.6	71	21.7	71	NE	10	4.5		0	0			0	0	Clear.	
Charlotte, North Carolina	29.46	748.3	30.26	768.6	69	20.6	52	NE	4	1.8		5ck	Haze	N	Calm	0	0	Fair	
Chattanooga, Tennessee	29.49	749.0	30.29	769.4	67	19.4	79	SW	1	0.4		5cs	Sm'e	Calm	Calm	0	0	Fair	
Cheyenne, Wyoming	24.11	612.4	30.05	763.3	60	15.6	77	W	3	1.3		5k	0	NW		0	0	Fair	
Chicago, Illinois	29.58	751.3	30.26	768.6	67	19.4	64	E	3	1.3		3c;ck	0	Calm		0	0	Fair	
Chincoteague, Virginia	30.27	768.8	30.29	769.4	68	20.0	90	SW	4	1.8		0	0			0	0	Clear	
Cincinnati, Ohio	29.64	752.8	30.27	768.8	71	21.7	71	NE	3	1.3		2k	Sm'e	E	Calm	0	0	Fair	
Cleveland, Ohio	29.57	751.1	30.29	769.4	66	18.9	59	E	3	1.3		3c;ck	0	Calm;SW		0	0	Fair	
Coleman City, Texas	28.35	720.1	29.97	761.2	70	21.1	75	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.45	748.0	30.27	768.8	69	20.6	56	N	2	0.9		5c	Sm'e	NW	Calm	0	0	Fair	
Concho, Texas	28.22	716.8	29.85	758.2	71	21.7	75	SE	3	1.3		0	0			0	0	Clear.	
Corsicana, Texas	29.70	754.4	30.16	766.1	71	21.7	75	E	4	1.8		0	5ks		Calm	0	0	Fair	
Davenport, Iowa	29.62	752.3	30.25	768.3	67	19.4	84	NE	6	2.7			10s		Calm	0	0	Cloudy	
Dayton, Washington T'y					44	6.7	75	SW			4	8k	0	S		0.14	3.6	Fair	
Deadwood, Dakota	25.32	643.1			73	22.8	46	SW	8	3.6		0	0			0	0	Clear	
Decatur, Texas	28.99	736.3	30.12	765.0	73	22.8	76	SE	6	2.7		0	0			0	0	Clear	
Delaware Breakwater, Del.	30.27	768.8	30.29	769.4	66	18.9	84	W	1	0.4		0	Haze		Calm	0	0	Clear	
Denison, Texas	29.38	746.2	30.15	765.8	70	21.1	80	SE	3	1.3		2ck	2ks	N	N	0	0	Fair	
Denver, Colorado	24.85	631.2	30.07	763.8	62	16.7	56	NW	1	0.4		2k	0	SW		0	0	Fair	
Des Moines, Iowa	29.35	745.5	30.22	767.6	64	17.8	78	SE	4	1.8		0	5s		S	0.09	2.3	Fair	
Detroit, Michigan	29.62	752.3	30.28	769.1	62	16.7	67	W	1	0.4		2cs	5s	Calm	Calm	0	0	Fair	
Dodge City, Kansas	27.46	697.5	29.68	753.9	67	19.4	69	SE	22	9.8		0	0			0	0	Clear	
Dubuque, Iowa	29.58	751.3	30.27	768.8	65	18.3	78	SW	1	0.4			Fog		Calm	0	0	Dense fog	
Duluth, Minnesota	29.57	751.1	30.24	768.1	61	16.1	100	Calm	0	0			Fog		Calm	0.09	2.3	Foggy	
Eagle Pass, Texas	29.30	744.2	30.00	762.0	77	25.0	61	SE	6	2.7		0	0			0	0	Clear.	
Eastport, Maine	30.04	763.0	30.11	764.8	65	18.3	73	SW	4	1.8		Haze	Haze	Calm	Calm	0	0	Dense haze	
Edinburg, Texas																			
El Paso, Texas																			
Erie, Pennsylvania	29.56	750.8	30.26	768.6	68	20.0	56	W	1	0.4		0	Haze		Calm	0	0	Clear	
Escanaba, Michigan	29.62	752.3	30.27	768.8	65	18.3	78	Calm	0	0		2c	0	W		0.07	1.8	Clear.	
Florence, Arizona					85	29.4	51	N	4	1.8		0	5ks		Calm	Inap.	Inap.	Fair	
Fort Apache, New Mexico	25.07	636.8	30.52	775.2	61	16.1	66	SE	3	1.3		2c	2s	Calm	Calm	0.03	0.8	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.66	702.6	29.37	746.0	68	20.0	84	E	16	7.2		0	0			0	0	Clear	
Fort Custer, Montana	26.58	675.1			65	18.3	48	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.33	643.4	30.29	769.4	66	18.9	69	W	3	1.3		5cs	0	W		0	0	Fair	
Fort Elliot, Texas	27.04	686.8	29.21	741.9	64	17.8	30	SE	12	5.4		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.63	752.6	30.16	766.1	70	21.1	70	E	4	1.8		2c	0	W		0	0	Fair	
Fort Grant, Arizona	25.23	640.8	30.03	762.7	78	25.6	29	E	3	1.3		5cs	5k	Calm	Calm	0	0	Cloudy	
Fort Griffin, Texas	28.86	733.0	30.11	764.8	65	18.3	84	Calm	0	0		0	0			0	0	Clear.	
Fort Keogh, Montana	27.02	686.3			73	22.8	63	SE	8	3.6		0	0			0	0	Clear	
Fort McKavett, Texas	27.87	707.9	29.74	755.4	69	20.6	65	S	2	0.9		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.92	734.6	30.01	762.2	66	18.9	84	SE	6	2.7		5ck	0	Calm		0	0	Fair	
Fort Stevenson, Dakota	28.10	713.7			70	21.1	84	SE	12	5.4		2k	0	SE		0	0	Fair	
Fort Verde, Arizona					71	21.7	49	SW			1	0	8s		Calm	0	0	Fair	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.07	763.8	30.11	764.8	79	26.1	70	NE	7	3.1		Haze	0	Calm		0	0	Clear	
Grand Haven, Michigan	29.64	752.8	30.28	769.1	70	21.1	61	N	1	0.4		0	0			0	0	Clear.	
Helena, Montana					57	13.9	58	S	9	4.0		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.47	748.5	30.23	767.8	69	20.6	80	N	9	4.0			10s		Calm	0	0	Cloudy	
Indianola, Texas	30.09	764.3	30.12	765.0	82	27.8	56	E	8	3.6		0	0			0	0	Clear	
Jacksboro, Texas	28.95	735.3	30.06	763.5	68	20.0	74	SE	4	1.8		0	0			0	0	Clear	
Jacksonville, Florida	30.14	765.5	30.16	766.1	80	26.7	59	NE	12	5.4		5cs;k	0	NE		Inap.	Inap	Fair	
Keokuk, Iowa	29.60	751.8	30.19	766.8	71	21.7	71	E	4	1.8		2cs	2s	N	Calm	0	0	Fair	
Key West, Florida	30.04	763.0	30.07	763.8	84	28.9	68	SW	2	0.9		2k	0	SW		0	0	Fair	
Kittyhawk, North Carolina	30.27	768.8	30.28	769.1	68	20.0	60	NE	13	5.8		0	0			0	0	Clear.	
Knoxville, Tennessee	29.34	744.5	30.30	769.6	69	20.6	56	SE	1	0.4		10cs	0	Calm		0	0	Cloudy	
La Crosse, Wisconsin	29.53	750.0	30.26	768.6	63	17.2	83	S	4	1.8			Fog		Calm	0	0	Foggy	
La Mesilla, New Mexico	26.13	663.7	30.28	769.1	76	24.4	41	Calm	0	0		0	5s		Calm	0	0	Fair	
Laredo, Texas	29.65	753.1	29.98	761.5	75	23.9	81	SE	2	0.9		0	0			0	0	Clear.	
Leavenworth, Kansas	29.33	745.0	30.15	765.8	71	21.7	62	SE	4	1.8		4ck	0	N		0	0	Fair	
Lewiston, Idaho	29.32	744.7	29.97	761.2	51	10.6	71	E	2	0.9			10s		Calm	0.02	0.5	Cloudy	
Little Rock, Arkansas	29.88	758.9	30.19	766.8	68	20.0	84	Calm	0	0		0	0			0	0	Clear.	
Los Angeles, California	29.58	751.3	29.92	760.0	54	12.2	74	E	1	0.4		0	0			0	0	Clear	
Louisville, Kentucky	29.67	753.6	30.21	767.3	75	23.9	68	NE	3	1.3		5cs	Sm'e	Calm	Calm	0	0	Fair	
Lynchburg, Virginia	29.65	753.1	30.32	770.1	70	21.1	57	NE	3	1.3		5ck	0	NE		0	0	Fair	
Madison, Wisconsin	29.28	743.7	30.25	768.3	65	18.3	84	N	3	1.3		1ck	0	N		0	0	Clear.	
Marquette, Michigan	29.56	750.8	30.24	768.1	67	19.4	69	W	2	0.9		0	0			Inap.	Inap.	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.47	723.1	30.20	767.1	66	18.9	84	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.86	758.4	30.19	766.8	71	21.7	61	E	3	1.3	.....	0	8s	.....	SE	0	0	Fair	
Milwaukee, Wisconsin	29.56	750.8	30.26	768.6	71	21.7	53	S	1	0.4	.....	2ck	Haze	Calm	.....	0	0	Fair	
Mobile, Alabama	30.14	765.5	30.18	766.6	73	22.8	62	N	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Montgomery, Alabama	30.00	762.0	30.24	768.1	69	20.6	61	E	2	0.9	.....	8c	0	E	.....	0	0	Fair	
Morgantown, West Virginia	29.30	744.2	30.27	768.8	67	19.4	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt Washington, N. H.	24.14	613.1	30.50	774.7	51	10.6	45	NW	15	6.7	.....	0	Sm'e	.....	NW	0	0	Clear	
Nashville, Tennessee	29.73	755.1	30.26	768.3	69	20.6	80	NW	3	1.3	.....	0	Steam	.....	Calm	0	0	Fair	
New Haven, Connecticut	30.16	766.1	30.27	768.8	72	22.2	71	SW	3	1.3	.....	5cs	Haze	S	Calm	0	0	Fair	
New London, Connecticut	30.24	768.1	30.29	769.4	72	22.2	71	W	4	1.8	.....	0	Fog	.....	Calm	0	0	Clear	
New Orleans, Louisiana	30.08	764.0	30.14	765.5	78	25.6	53	E	6	2.7	.....	Haze	Haze	Calm	Calm	0	0	Hazy	
Newport, Rhode Island	30.22	767.6	30.27	768.8	69	20.6	75	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
New River, North Carolina	.....	.....	.....	.....	70	21.1	52	NE	.....	.....	1	Haze	Haze	Calm	Calm	.....	.....	Light haze	
New York, New York	30.12	765.0	30.30	769.6	66	18.9	83	S	4	1.8	.....	0	Haze	.....	Calm	0	0	Hazy	
Norfolk, Virginia	30.24	768.1	30.29	769.4	72	22.2	46	NW	1	0.4	.....	0	Haze	.....	Calm	0	0	Clear	
North Platte, Nebraska	27.13	689.1	29.59	751.6	68	20.0	82	SE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Olympia, Washington Ter.	30.04	763.0	30.08	764.0	46.0	7.8	92	S	2	0.9	.....	2cs	5ks	W	S	0.19	4.8	Cloudy	
Omaha, Nebraska	29.02	737.1	30.08	764.0	68.5	20.3	72	SE	10	4.5	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.97	761.2	30.28	769.1	67	19.4	69	S	2	0.9	.....	Haze	0	Calm	.....	0	0	Clear	
Pembina, Dakota	29.22	742.2	30.01	762.2	67	19.4	89	S	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pensacola, Florida	30.15	765.8	30.18	766.6	76	24.4	52	NE	8	3.6	.....	1ck	0	NE	.....	0	0	Clear	
Philadelphia, Pennsylvania	30.24	768.1	30.29	769.4	68	20.0	65	NE	4	1.8	.....	0	Haze	.....	Calm	0	0	Dense haze	
Phœnix, Arizona	28.79	731.3	30.47	773.9	90	32.2	60	NW	3	1.3	.....	5ck	0	W	.....	0	0	Fair	
Pike's Peak, Colorado	18.11	460.0	30.32	770.1	40	4.4	39	S	4	1.8	.....	2cs	0	Calm	.....	0.03	0.8	Clear	
Pilot Point, Texas	29.39	746.5	30.22	767.6	68	20.0	84	SE	4	1.8	.....	8k	0	E	.....	0	0	Fair	
Pioche, Nevada	24.02	610.1	29.79	756.7	62	16.7	14	S	13	5.8	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.48	748.8	30.28	769.1	60	15.6	82	NW	2	0.9	.....	0	Fog	.....	.....	0	0	Clear	
Port Huron, Michigan	29.61	752.1	30.26	768.6	65	18.3	68	SW	5	2.2	.....	8c	Haze	W	.....	0	0	Fair	
Portland, Maine	30.14	765.5	30.19	766.8	67	19.4	69	W	2	0.9	.....	0	Haze	.....	.....	0	0	Clear	
Portland, Oregon	30.10	764.5	30.18	766.6	47.5	8.6	89	S	13	5.8	.....	.....	10n	.....	S	0.16	4.1	Light rain	
Portsmouth, North Carolina	.....	.....	.....	.....	71	21.7	58	NE	22	9.8	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.81	630.2	30.17	766.3	72	22.2	16	SW	10	4.5	.....	0	8ks	.....	S	0	0	Cloudy	
Punta Rassa, Florida	30.04	763.0	30.05	763.3	78	25.6	78	E	6	2.7	.....	8ck	0	SW	.....	0	0	Fair	
Red Bluff, California	29.87	758.7	30.24	768.1	49.0	9.4	57	NW	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.90	759.4	30.12	765.0	76	24.4	77	E	4	1.8	.....	2ck	5s	Calm	Calm	0.03	0.8	Fair	
Rochester, New York	29.64	752.8	30.25	768.3	64	17.8	68	SW	6	2.7	.....	0	Haze	.....	.....	0	0	Clear	
Roseburg, Oregon	29.73	755.1	30.31	769.9	47	8.3	77	SW	2	0.9	.....	.....	10ks	.....	W	0	0	Cloudy	
Sacramento, California	30.08	764.0	30.16	766.1	56	13.3	57	N	12	5.4	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.22	767.6	70	21.1	75	E	3	1.3	.....	5cs	5ks	Calm	Calm	0	0	Cloudy	
St. Paul, Minnesota	29.39	746.5	30.20	767.1	64	17.8	78	SE	2	0.9	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Salt Lake City, Utah	25.54	648.7	29.87	758.7	75	23.9	19	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.45	748.0	30.14	765.5	69	20.6	80	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.85	758.2	29.92	760.0	62	16.7	94	Calm	0	0	.....	Fog	Fog	.....	Calm	0	0	Foggy	
Sandusky, Ohio	29.62	752.3	30.27	768.8	69	20.6	56	NW	3	1.3	.....	8c;k	Haze	Calm	Calm	0	0	Fair	
Sandy Hook, New Jersey	30.25	768.3	30.28	769.1	74	23.3	59	SW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	30.15	765.8	30.21	767.3	53	11.7	61	N	9	4.0	.....	0	0	.....	.....	0	0	Clear	
Santa Fé, New Mexico	23.40	594.4	29.94	760.5	64	17.8	39	E	5	2.2	.....	0	8ks	.....	Calm	Inap.	Inap.	Cloudy	
Savannah, Georgia	30.15	765.8	30.24	768.1	75	23.9	64	NE	8	3.6	.....	2cs	Sm'e	Calm	Calm	0	0	Fair	
Shreveport, Louisiana	29.93	760.2	30.15	765.8	73	22.8	72	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.22	767.6	30.26	768.6	72	22.2	71	N	9	4.0	.....	1k	Haze	N	Calm	0	0	Clear	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.60	751.8	30.26	768.6	71	21.7	62	NE	2	0.9	.....	0	8s	.....	Calm	0	0	Fair	
Springfield, Massachusetts	30.14	765.5	30.26	768.6	71	21.7	66	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	27.04	686.8	30.04	763.0	71	21.7	66	SE	18	8.0	.....	2cs	0	Calm	.....	0	0	Fair	
Thatcher's Island, Mass.	30.16	766.1	30.22	767.6	67	19.4	89	SW	10	4.5	.....	.....	Sm'e	.....	.....	0	0	Dense smoke	
Toledo, Ohio	29.60	751.8	30.28	769.1	65	18.3	63	NW	4	1.8	.....	8cs	0	NW	.....	0	0	Fair	
Tucson, Arizona	27.50	698.5	30.05	763.3	80	26.7	55	E	4	1.8	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
Umatilla, Oregon	29.81	757.2	30.30	769.6	50.5	10.3	58	SW	16	7.2	.....	0	5s	.....	SW	0.03	0.8	Fair	
Uvalde, Texas	29.20	741.7	29.90	759.4	72	22.2	76	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.94	760.5	30.20	767.1	71	21.7	62	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Virginia City, Montana	24.16	613.6	29.64	752.8	65	18.3	26	SW	4	1.8	.....	Haze	Haze	.....	.....	0	0	Hazy	
Visalia, California	29.70	754.4	30.08	764.0	54	12.2	58	NW	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	30.20	767.1	30.31	769.9	71	21.7	62	NW	2	0.9	.....	0	Sm'e	.....	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	81	27.2	52	S	.....	.....	1	.....	10s	.....	Calm	0	0	Cloudy	
Wilmington, North Carolina	30.19	766.8	30.27	768.8	69	20.6	56	NE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	26.76	654.3	30.12	765.0	37	2.8	45	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	30.22	767.6	30.26	768.6	65	18.3	84	SW	15	6.7	.....	0	Haze	.....	.....	0	0	Clear	
Yankton, Dakota	28.84	732.5	30.10	764.5	68	20.0	65	SE	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Yuma, Arizona	29.68	753.9	29.82	757.4	83	28.3	60	S	8	3.6	.....	5k	0	S	.....	0	0	Fair	
Sub-Series.																			
Bogota, U. S. Colombia	22.05	560.1	.....	.....	55.0	12.8	80	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	Thomas Herran.
Havana, Cuba, W. I.	30.04	763.0	30.09	764.3	82	27.8	74	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	Chas. Hasselbrink.
Kingston, Jamaica, W. I.	30.04	763.0	30.05	763.3	80	26.7	72	Calm	0	0	.....	5c	2s	.....	Clam	0	0	Fair	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	80	26.7	78	E	7	3.1	.....	5k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.05	763.3	30.05	763.3	80	26.7	87	E	.....	.....	2	.....	8ks	.....	.....	0.600	15.24	Cloudy	C. J. Hering.
Puerto Ferrio, U.S.Col'bia ‖	29.46	748.3	30.02	762.5	77	25.0	89	S	.....	.....	1	.....	8ks;s	.....	.....	0	0	.....	Francesco J. Cisneros.
Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	E	.....	.....	.....	.....	2k	.....	E	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I.	30.03	762.7	30.05	763.3	82	27.8	78	Calm	0	0	.....	8cs	0	.....	.....	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gyllich.
York Factory, B. A.	29.99	761.7	29.94	760.5	56.0	13.3	90	NE	12	5.4	.....	1c	1s	NE	NE	0	0	Fair	J. Fortescue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,888.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.11	764.8	80	26.7	70	E	2	0.9	.....	.....	2d	.....	NE	.....	.....	.....	.....	Fair.....	
§Navy Yard, Portsmouth, N. H.....	30.26	768.6	66	18.9	79	S	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
Naval Hospital, Yokohama, Japan.....	29.74	755.4	66.5	19.2	90	ENE	.....	.....	3	ck	10n;ks	.....	E	Slight	Slight	.....	.....	Light rain...	
§Adams, Payta, Peru	30.01	762.2	67	19.4	89	SE	.....	.....	1	.....	10	.....	SE	.....	.....	.....	.....	Cloudy.....	
§Alaska, Callao, Peru..... ....*	29.98	761.5	61	16.1	94	S	.....	.....	1	.....	10	.....	.....	.....	.....	Long	SW	Cloudy.....	
§Alert, Yokohama, Japan.....	29.64	752.8	68	20.0	84	ENE	.....	.....	3	.....	10	.....	Calm	.....	.....	Smooth	.....	Cloudy.....	
§Alliance, St Pierre, Newfoundland.....	30.14	765.5	51	10.6	79	WSW	.....	.....	2	.....	8	.....	NW	0	0	Smooth	.....	Fair.....	
§Ashuelot, Shanghai, China.....	29.80	756.9	77	25.0	??	SE	.....	.....	1	.....	10	.....	S	0	0	None	.....	Cloudy.....	
§Colorado, New York, N. Y.....	30.27	768.8	69	20.6	70	SSE	2	0.9	.....	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
§Constellation, 35° 04′, W. 76° 14′.....	30.16	766.1	75	23.9	64	NW	.....	.....	2	.....	2	.....	.....	.....	.....	Smooth	.....	Fair	
§Constitution, Off Ellis Isl'd., N. Y.....	30.28	769.1	69	20.6	90	Calm	0	0	.....	.....	1	.....	Calm	.....	.....	.....	.....	Clear	
§Franklin, Off Navy Yard, Norfolk, Va	30.25	768.3	65	18.3	73	W	2	0.9	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
§Independence, Mare I'd, Navy Yard, Cal.	30.16	766.1	53	11.7	??	W	1.2	0.5	.....	.....	0	.....	.....	0	0	.....	.....	Clear.....	
§Jamestown, Sitka, Alaska.....*	29.89	759.2	45	7.2	92	ESE	.....	.....	1	.....	8	.....	W	.....	.....	Smooth	.....	Cloudy.....	
§Kearsarge, Boston, Mass.....	30.19	766.8	71	21.7	71	WSW	.....	.....	2	.....	0	.....	.....	.....	.....	Smooth	.....	Fair.....	
§Lackawana, Gulf of Dulce, Costa Rica.†	30.05	763.3	83	28.3	83	SE	.....	.....	2	.....	5	.....	SE	.....	.....	Smooth	SE	Fair.....	
§Marion, S. 49° 14′, W. 58° 03′.....	29.86	758.4	45	7.2	92	NNE	.....	.....	3	.....	10	.....	.....	0	0	Smooth	S	Cloudy.....	
§Michigan, Erie, Pa.	30.25	768.3	65	18.3	78	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§Minnesota, Navy Yard, Brooklyn, N.Y.*	30.25	768.3	70	21.1	75	S	.....	.....	1	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
§Monocacy, Chefoo, China	29.83	757.7	66	18.9	100	ENE	.....	.....	1	.....	10	.....	S	.....	.....	.....	.....	Cloudy.....	
§New Hampshire, Port Royal, S. C.....	.....	.....	74	23.3	63	NNE	14	6.3	.....	.....	2	.....	Calm	0	0	.....	.....	Clear.....	
Nipsic, N. 37° 54′, E. 15° 38′.....	29.90	759.4	74	23.3	68	NE	.....	.....	5	.....	8	.....	.....	.....	.....	Smooth	.....	D. clouds.....	
§Onward, Chimbote, Peru .....†	29.95	760.7	66	18.9	84	SE	.....	.....	1	.....	10	.....	NW	.....	.....	Long	W	Cloudy.....	
§Palos, Shanghai, China..	29.88	758.9	76	24.4	73	SSE	.....	.....	1	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
§Passaic, Washington, D. C.....	30.27	768.8	69	20.6	90	S	.....	.....	1	.....	0	.....	.....	0	0	.....	.....	Clear	
§Pensacola, N. 44° 56′, W. 124° 52′.....	29.97	761.2	53	11.7	80	NNW	.....	.....	3	.....	8	.....	WNW	.....	.....	Smooth	W	Cloudy.....	
§Portsmouth, Fayal, Azore Islands	30.02	762.5	68	20.0	90	N	.....	.....	3	.....	10	.....	N	.....	.....	Rough	W	Cloudy.....	
§Powhattan, New York, N. Y.....	30.26	768.6	66	18.9	100	SSW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Hazy.....	
§Quinnebaug, Elsinore, Kategat.....	29.85	758.2	69	20.6	75	NW	.....	.....	1	.....	2	.....	Calm	.....	.....	Smooth	.....	Fair.....	
§Richmond, Kobe, Japan.....	29.77	756.1	74	23.3	72	NE	.....	.....	1	.....	0	.....	.....	0.2	5.	.....	.....	Clear.....	
Rio Bravo, Brownsville, Texas... .†	30.27	768.8	72	22.2	90	E	1	0.4	.....	.....	8	.....	Calm	0	0	.....	.....	Fair.....	
§Saratoga. N. 37° 18′, E. 3° 03′.....	29.97	761.2	73	22.8	63	W	.....	.....	5-6	.....	5	.....	W	0	0	Mod'ate	W	Hazy..	
§Shenandoah, Buenos Ayres, Argentine Republic.	30.14	765.5	55	12.8	93	NE	.....	.....	3	.....	10	.....	.....	.....	.....	Mod'ate	NE	Cloudy.....	
§St. Louis, League Island, Pa.....	30.24	768.1	66	18.9	79	ESE	3	1.3	.....	.....	0	.....	.....	0	0	.....	.....	Light fog.....	
Swatara, Hong-Kong, China.....†	29.78	756.4	85	29.4	83	SE	.....	.....	1	.....	8	.....	Calm	.....	.....	Smooth	.....	Fair	
§Tennessee, New York, N. Y.....	30.23	767.8	69	20.6	60	SW	.....	.....	0-1	.....	0	.....	.....	0	0	Smooth	.....	Hazy.....	
§Ticonderoga, Nagasaki, Japan.....	29.78	756.4	71	21.7	100	N	.....	.....	2	.....	5	.....	N	.....	.....	Smooth	.....	Fair.....	
§Trenton, N. 39° 55′, W. 8° 19′.....	30.09	764.3	69	20.6	65	WSW	.....	.....	5	.....	10	.....	.....	0	0	None	.....	Cloudy.	
§Vandalia. Provincetown, Mass.....	30.26	768.6	64	17.8	89	SSW	.....	.....	3	.....	0	.....	.....	.....	.....	.....	.....	Clear.....	
§Wabash, Boston, Mass.....	30.23	767.8	64	17.8	78	WSW	6	2.7	.....	.....	2	.....	.....	0	0	.....	.....	Clear	
§Wachusett, S. 33° 21′, W. 73° 32′....	29.92	760.0	56	13.3	100	N	.....	.....	4	.....	10	.....	N	.....	.....	Long	N	Cloudy	
Wyoming, N. 37° 37′, E. 0° 18′.....	29.92	760.0	71	21.7	71	SW	.....	.....	4-5	.....	2	.....	SW	.....	.....	Mod'ate	SW	Clear.	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	OBSERVER.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr.
S. S. Indiana, R. W. Sargent, Liverpool, Eng	29.75	755.6	64	17.8	89	E			2		8		E	Mod'ate	Mod'ate			Fair	
S. S. Ohio, Henry Morrison																			Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge, N. 50° 40', W. 12° 43'....*†	29.62	752.3	60	15.6	94	ENE			2		5		ENE	1 h'r	1 h'r	Smooth	SE	Fair	Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger, N. 23° 44', W. 111° 03'....†	29.94	760.5	67	19.4	95	Calm			0		10		NW	0	0	Small	W	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 40° 20', W. 56° 56'	29.70	754.4	67	19.4	84	N			5		10		N	Heavy	Heavy	Long	NE	Cloudy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 48° 29', W. 11° 13'	29.59	751.6	77	25.0	53	E			1		2		E	1 h'r	1 h'r	Smooth	E	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risins.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind. Direction.	Wind. Velocity.		Wind. Force.	Clouds. Amount. Up'er	Clouds. Amount. Lo'er	Clouds. Direction. Upper.	Clouds. Direction. Lower.	Rain-fall or melted snow in the past 24 hours.		Sea-swell. Character.	Sea-swell. Direction from—	Weather.	OBSERVER.
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.				
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 41° 13', W. 142° 31'....†	30.56	776.2	66	13.3	87	NW			4		2		NW			Smooth		Clear	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 25° 35', E 120° 53'....†	29.74	755.4	78	25.6	95	WSW			4		8		SW	Mist	Mist	Mod'ate	SW	Misty	J. A. Thompson.
S. S. Oceanic, Metcalf																			
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lachlan, N. 40° 32', W. 124° 30'....†	30.26	768.6	49	9.4	85	NNW			4		0					Light	W	Clear	J. M. Lachlan.
S. S. Oregon, E. Polemann, Portland, Oregon....†	30.10	764.5	50.0	10.0		S			4		10s		SSW					Raining	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander San Francisco, Cal.....†	30.22	767.6	52	11.1		NW			2		0							Clear	
S. S. Orizaba, C. B. Johnson N. 34° 00', W. 118° 45'...†	29.86	758.4	52	11.1		Calm			0		0			0	0	Smooth		Clear	Harrison & Marshall.
S. S. State of California, G. Dabney, San Francisco, Cal.....†	30.16	766.1	50	10.0		NW			3		2		NW					Fair	
S. S. Victoria, H. M. Haywood. N. 41° 52', W. 124° 42'....†	30.30	769.6	50	10.0	86	NE			3		8		NW			Long	WNW	Light rain	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 12° 28′, W. 87° 16′.... †	29.88	758.9	82	27.8	83	SW			1		0					Smooth		Clear.	F. A. Johnston.
§ S. S. Australia, S. 34° 26′, E. 164° 27′.... †	29.87	758.7				WSW			4		0					Cross		Clear.	Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. Sydney, N. S. W..... †	29.99	761.7	52	11.1	79	SW			3		0							Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 18° 44′ W. 104° 02′... †	30.01	762.2	81	27.2	74	WSW			2		5		NW	0	0	Smooth	SW	Squally	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 35° 56′, E. 141° 47′.... †	29.68	753.9	68	20.0	90	NNE			5		8		NE	0	0	Mod'ate	NE	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 12° 12′, W. 88° 06′.... †	29.95	760.7	85	29.4	96	ENE			4		0			0	0	Small	SSE	Clear.	
§ S. S. Dakota, H. G. Morse.																			
§ S. S. Granada, J. M Cavarly																			C. T. Rode.
§ S. S. Idaho, E. Alexander, Esquimalt, Vancouver I'd..... †	30.24	768.1	61	16.1		Calm			0		0			0	0			Fair	E. Alexander.
§ S. S. Zealandia, R. C. Ghest. N. 1° 54′, W. 165° 26	29.82	757.4	80	26.7		E			4		2		E			Smooth	SW	Clear	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 43° 22′, W. 36° 43′.... †	29.93	760.2	62	16.7		W			5		8		W	6 h'rs	6 h'rs	High	W	Squally	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry.																			J. Jones.
S. S. Celtic, B. Gleadell, N. 51° 15′, W. 15° 16′.... †	29.63	752.6	58	14.4		ESE			3		2		N	0	0	Mod'ate	WNW	Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla..... †	30.10	764.5	78	25.6		ENE			6		2		NE	0.04	1.0			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.	30.23	767.8				W					0							Clear.	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 31° —′, W. 71¾° ... †	30.09	764.3	80	26.7		SW			1		10		NW	Heavy	Heavy	Heavy Cross	SW;NNE	Threatening	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 8° 54′, W. 26° 56′..... *†	30.08	764.0	82	27.8		E			1		2		E			Mod'ate cross		Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 53° 17′, W 54° 31′..... †	30.01	762.2				E			2		2		E			Long	S	Clear	S. S. Miner.
Brigantine George, W. H Champlin.																			
Iron Cross, W. Randall, N. 25° 07′, W. 50° 00′.....	30.08	764.0	82.5	28.1	81	N			1-2		3			Slight.		Mod'ate	N	D. clouds	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	30.09	764 3	64	17.8	83	Calm			0		0			0	0			Very fine	James S. Garvin.

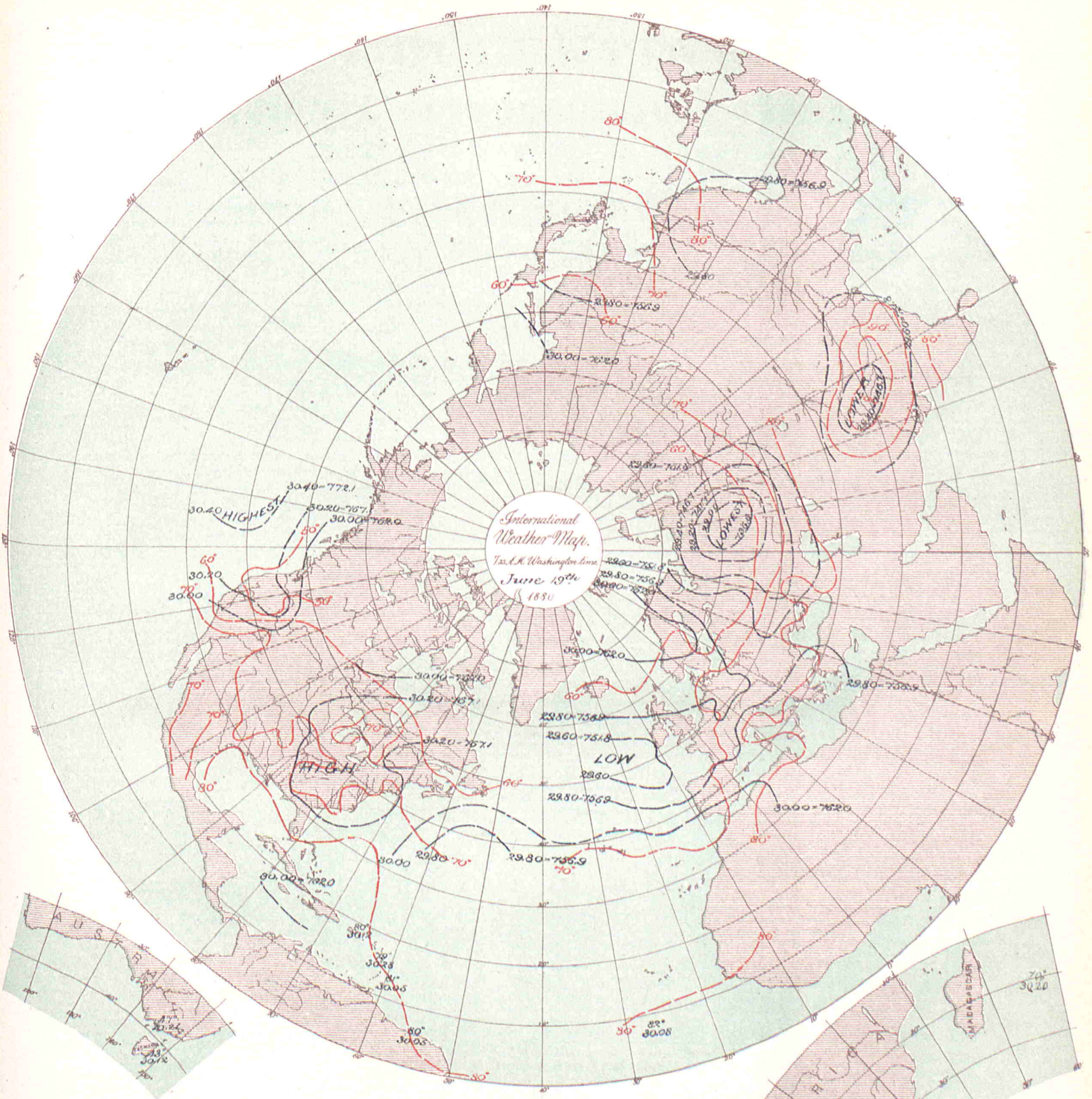
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 20, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mogador, Marocco																			Dr. Ollive.
Nemours			30.06	763.4	77.7	25.4	71	Calm			0		3			0	0	Pretty fair	Metge.
Algiers			29.98	761.5	77.0	25.0	50	W			4		0			0	0	Clear	Nicolas.
La Calle			29.98	761.5	74.3	23.5	84	NNW			2		4			Inap.	Inap.	Cloudy	Fonfrède.
Tunis			29.94	760.4															Jacques.
Sfax			30.00	762.1															Gau.
Saida			30.05	763.2															Charon.
Tebessa			29.98	761.4	87.8	31.0	23	N			2		2			0	0	Fair	Watrin.
Geriville			30.07	763.6	89.6	32.0	62	W			2		0			0	0	Clear	Lonchamp.
Laghouat			30.04	762.9	92.1	33.4	12	ESE			2		0			0	0	Clear	Herlin.
Biskra			29.98	761.4	93.9	34.4	37	WNW			3		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Agram	29.12	739.6	29.65	753.0	68.2	20.1	68	W			5		5			0.008	0.2	Thunder-storm	Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.95	735.4	29.69	754.1	70.2	21.2	48	ENE	5.8	2.6			8			0	0		Dr. Wierzbicki.
Eperies	28.76	730.5	29.60	751.9	68.4	20.2	54	N			4		9ks		S	0	0		Julius Mikolik.
Gratz	28.45	722.5	29.64	752.9	72.1	22.3	68	SE			2		5			0.004	0.1		Andreas Rospini.
Hermannstadt	28.17	715.4	29.51	749.6	74.1	23.4	73	N			1		8			0.144	3.65		Prof. A. Gottschling.
Kremsmünster, Observatory	28.38	719.5	29.59	751.6	75.6	24.2	67	E			2		5			0	0		The Staff.
Lemberg	28.68	728.4	29.63	752.6	64.9	18.3	53	NE			2		7			0	0		Dr. T. Stanecki.
Pola	29.61	752.0	29.71	754.7	77.5	25.3	61	WNW			1		3			0	0		I.R. Hydrographic Office.
Szathmar	29.13	739.8	29.56	750.9	77.0	25.0	52	NW			6		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.32	744.8	29.59	751.6	69.1	20.6	82	Calm			0		8			0.073	1.85		Karl Stancel.
Trieste	29.61	752.1	29.71	754.7	77.7	25.4	78	W			1		3			0.472	12.0		P. Busin.
Vienna	28.94	735.1	29.68	753.9	76.8	24.9	45	N			1		1			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by he Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Arlon																			Prof. M. Passau
Brussels	29.49	749.0	29.68	753.9	69.6	20.9	63	SSW			2		9		SSE;SW	0	0		Royal Observatory.
Furnes	29.69	754.1	29.71	754.7	68.5	20.3	68	SW			2		10			0.165	4.2		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 22, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.67	753.6	29.77	756.1	53.6	12.0		ENE	14	6.3			9			0.020	0.51	Overcast	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	29.38	746.2	29.61	752.1	58.9	14.9		E	8	3.6									S. Call.
Bidston (Liverpool Obs)			29.58	751.3	62.6	17.0		E	21	9.4			9					Overcast	John Hartnup.
Bolton (Sharples)	29.08	738.6	29.58	751.3	60.0	15.6		SSE	7	3.1			10					Raining	Thomas Mackereth.
Bradford, Yorkshire																0.31	7.9		J. McLandsborough.
Bridgetown, Barbadoes	30.03	762.7	30.06	763.5	80	26.7		NE			1		8					Overcast	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.51	749.3	29.90	751.8	67.0	19.4		SE			1		10					Overcast	H. Todd.
Cardington			29.59	751.6	67.1	19.5		SE			0.6		10					Overcast	John McLaren.
Chatham (School M. E.)	29.53	750.0	29.66	753.4	66.0	18.9		Calm			0		8k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.57	751.1	29.61	752.1	57	13.9		SE			3		10					Drizzling	J. Mac Gowan.
Dover	29.61	752.1	29.63	752.6	63	17.2		WSW			1		5					½ clouded	J. Costello.
Falmouth (Observatory)	29.33	745.0	29.56	750.8	59.6	15.3		S			1		10					Overcast	The Staff.
Fort Napier, Natal	27.99	710.9	30.20	767.1	64.7	18.2		W			2		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.73	755.1	29.95	760.7	87	30.6		Calm			0		10					D. clouds	
Galway (Queen's College)			29.49	749.0	65	18.3		SW			2		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.99	761.7	30.04	763.0	74.3	23.5		SW			5		3					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.44	747.8	29.65	753.1	60.1	15.6		NE			3		9					Gloomy	D. G. Maclean.
Great Yarmouth	29.66	753.4	29.67	753.6	61	16.1		SE			1		4					Misty	G. T. Watson.
Greenwich (Royal Obs'y)	29.45	748.0	29.62	752.3	68.4	20.2		SSW			1		6					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.31	744.5	29.53	750.0	59	15.0		SSW			3		8					D. clouds	Dr. S. E Hoskins, F.R.S.
Helston	29.76	755.9	29.87	758.7	63	17 2		ENE			2					0.17	4.3	Fine	M. P. Moyle.
Holyhead	29.57	751.1	29.61	752.1	59	15.0		E			4	c	5					Raining	John Tilston.
Jersey	29.35	745.5	29.63	752.6	60.0	15.6		SW			5		9					Gloomy	J. Fisher.
Kew (Observatory)	29.59	751.0	29.62	752.3	68.3	20.2		S	16	7.2			8					Threatening	The Met'g'l Office.
Leicester (Museum)	29.35	745.5	29.60	751.8	63.0	17.2		E			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.79	756.7	29.86	758.4	77.0	25.0		W			2		0					Blue sky	A. King.
Nairn	29.61	752.1	29.70	754.4	60	15.6		NE			3		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.03	762.7	85.0	29.4		SE			1		4					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.45	748.0	29.63	752.6	62.8	17.1		SE			2		10kd		SSE	0.439	11.15	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.08	738.6	29.59	751.6	60.7	15.9		E			2		10					Raining	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.37	746.0	29.62	752.3	65	18.3		SE			4		8					Overcast	The Staff, for E. J. Stone, Esq
Plymouth	29.45	748.0	29.53	750.0	60.8	16.0		S			2		10					Overcast	John Merrifield.
*Roche's Point	29.48	748.8	29.60	751 8	63	17.2		SSE			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.38	746.2	29.54	750.3	57	13.9		Calm			0		10					Foggy	John C. Walker.
Sandwick Manse, Orkneys.			29.79	756.7	58	14.4		SE	26	11.6			1					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.52	749.8	29.58	751.3	72.0	22.2		Calm			0		8					D. clouds	Serg't W. H. Lyne.
Sheffield	29.31	744.5	29.66	753.4	58.7	14.8		E			1		10			0.23	5.8	Raining	W. F. Cooper.
Silloth Rectory	29.58	751.3	29.61	752 1	68.9	20.5	64	E			2		10			0.058	1.47	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.64	752.8	61.7	16.5		SE	6	2.7			10					Raining	Rev. S. J. Perry.
Strathfield Turgiss	29.40	746.7	29.61	752.1	62.4	16.9		S			2		10					Showery	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.56	750.8	29.57	751.1	64	17.8		SW			2		10					Gloomy	W. Newcombe.
Valencia (Observatory)	29.50	749.3	29.52	749.8	62.6	17.0		SSE	18	8.0			10					Misty	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	30.48	774.2	30.52	775.2	60.3	15.7	55	SSE	22.4	10.0		0	0			0.160	4.06	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			30.14	765.5	47.0	8.3	80	S			2		10kn			0.72	18.3	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.71	754.6	55.5	13.1		E			2		10s			0.04	1.0	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.96	761.0	30.15	765.8	69.0	20.6	84	SSE	12.5	5.6			10		E	0.01	0.3	Misty	C. Meldrum.
Melbourne (Observatory)	30.13	765.3	30.22	767.6	40.5	4.7	95	SSW	2	0.9			2			0.10	2.5	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.67	753.6	71	21.7		SE			3	0	0			0	0		J. Youngclause.
North Unst, Shetland I's			29.86	758.4				SE			4		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

BRITISH MARINE SERIES. VESSELS.	Sea or swell. Height scale 0—9	Sea or swell. Direction frbn—	Weather.	Observer.
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia, N. 41° 15′, W. 57° 05′	3	SSW	D. clouds	Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 26° 30′, W. 80° 00′	4	N	D. clouds	Capt. W. Randall.
Ship Lochee, S. 31° 55′, E. 34° 30′			Showery	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N 46° 46′, W. 24° 03′			Raining	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, Malta, Mediterranean			Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary: the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.24	666.5	29.96	761.0	70.7	21.5	82	SE			2	2cs	1d			0.20	5.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.86	758.5	29.91	759.7	60.4	15.8	49	ESE			4		0						
Fanöe	29.80	757.0	29.82	757.5	68.2	20.1	58	ESE			6		0						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.85	758.3	29.90	759.4	58.6	14.8	81	SE			6		5						
Thorshavn (Faröe)	29.81	757.1	29.84	758.0	51.4	10.8	92	Calm			0		10					Foggy	
Vestervig	29.78	756.4	29.87	758.8	68.2	20.1	54	E			4		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.20	741.6	29.75	755.6	62.6	17	96	SW			1		10n			0.102	2.6	Raining	Collignon, Director.
Amiens, Normal School	29.63	752.7	29.74	755.4	74.8	23.8	95	E			1		0			0.126	3.2	Clear.	Vaillant, Director.
Arras, Engineer School	29.44	747.7	29.73	755.1	62.1	16.7	75	NW			1		4s	E		0.102	2.60		Klein, Commandant.
Avignon, Normal School	29.67	753 7	29.75	755.7	70.7	21.5	75	NW			1		8		SW	1.008	25.6	Rainy	Giraud, Director.
Bar-sur-Seine	29.22	742.1	29.75	755.7	68.7	20.4	58	NW			2		8kn		WNW	0.020	0.5	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.45	748.0	29.71	754.5	73.2	22.9	54	S			2		8		S	0.354	9.0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.83	733.7	29.76	755.8	63.5	17.5	71	S			3		10		SW	0	0	Covered	A. Carré, Director.
Bordeaux	29.64	752.8	29.84	757.8	66.2	19.0	55	WNW			1		8		WSW	0.657	16.7	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.94	735.0	29.86	758.4	69.8	21	68	NW			1		5k	SE	NE	0	0	Cloudy	Mârlot, Director.
Bourges, Normal School	29.26	743.2	29.80	756.8	69.4	20.8	72	SW			3		ck	SW		0.020	0.5		M. Gence, Director.
Brest, Naval Observatory	29.44	747.8	29.69	754.0	63.7	17.6	81	SW			2		10		SW	0.167	4.25	Squally	Ch. de Rermaree, Dir
Caen, Normal School	29.55	750.6	29.63	752.5	68.2	20.1	81	S			2		8		SW	0	0	Very cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.41	747.1	29.82	757.3	69.4	20.8	69	W			1		5	E	W	0.043	1.1	Cloudy	September, Director.
Châlons-sur-Marne, N. Sch'	29.46	748.2	29.77	756.1	66.6	19.2	66	SW			1		5		W	0.024	0.6	Cloudy	Jadot, Director
Chartres, Normal School	29.15	740.3	29.69	754.2	68.0	20	72	S			1		3		SW	0.283	7.2		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.47	723.2	29.80	757.0	59.5	15.3	80	W			1		10		W	0.205	5.2		Alluard, Director.
Commercy, Normal School.	28.91	734.4	29.74	755.4	66.9	19.4	74	WSW			3		kn	WSW	WSW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.67	728.2	29.81	757.2	72.3	22.4	58	SW			2		5		SW	0.008	0.2		L. Kina, Director.
Grenoble, Normal School	29.03	737.4	29.77	756.2	70.9	21.6	67	WNW			1		ck			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.68	751.4	29.80	756.8	63.7	17.6	72	SW			1		5	NE	SW	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.42	747.2	29.72	754.9	58.5	14.7	93	W			3		10		WSW	0.209	5.3	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.88	733.6	29.77	756.2	67.8	19.9	84	SW			2		5kn		SW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.61	752.1	29.71	754.7	64.4	18.0	84	SW			6		8		SW	0.118	3.00	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.16	740.6	29.75	755.7	71.6	22.0	54	NNE			1		k		W	0.039	1.0		Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.49	749.0	29.75	755.7	70.3	21.3	71	SW			1		9		SW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.74	729.9	29.74	755.3	69.1	20.6	67	NW			1		kn		NW	0	0		Barbier, Director.
Mont-Louis	24.70	627.4	29.94	760.4	51.8	11.0	75	SW	13.0	5.8			8		E	0	0		M. Cave, for Dr. Fines.
Nice	29.73	755.2	29.77	756.1	74.8	23.8	74	SW			3		5	SW	SW	0.039	1.0	Cloudy	Capt. Boissière, Director.
Nismes, Normal School	29.55	750.6	29.75	755.7	76.1	24.5	62	W			3		5		N	1.595	40.5	Cloudy	M. Boyer, Director.
Perpignan	29.71	754.5	29.81	757.1	71.2	21.8	54	NW	16.8	7.5			7	NW	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.44	569.9			38.1	3.4							10		SW	0.307	7.8	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.74	729.9	29.77	756.2	63.5	17.5	80	S			1		5			0.134	3.4	Raining	M. Tallieu
Puy de Dome (Summit) Obs	25.00	634.9			44.8	7.1	100	W			4		10			0.252	6.4	Rain & fog	Alluard, Director.
Rochefort, Naval Obs'y	29.80	756.8	29.83	757.6	67.6	19.8	67	SW			4		5	SW	SW	0.28	7.	½ covered	Lt. E. Devante, Director
Rouen, Normal School	29.59	751.5	29.67	753.7	67.8	19.9	58	SSW			1		5	NE	SW	0.209	5.3	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.60	751.8	29.63	752.6	66.0	18.9	60	SW			4		5	SW	SW	0.083	2.10	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.57	751.0	29.73	755.2	72.5	22.5	54	S			2		6	SE	SW	0.209	5.3		E. Renou, Director.
Tarbes, Normal School.	28.70	731.2	29.85	758.2	60.8	16	50	SE			1								T. Huguet, Director
Toulouse, Observatory	29.21	741.9	29.93	760.2	64.4	18.0	74	NNW			2		10			0.358	9.1	Covered	B. Baillard, Dir.
Tours	29.57	751.0	29.76	756.0	62.6	17.0	86	W			3		10		WSW	0.047	1.2	Covered	M. de Tastes.
Versailles, Observatory	29.24	742.6	29.73	755.1	68.0	20.0	57	SW			2					0.238	6.55		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.09	738.8	29.76	755.9	77.0	25	47	NW			1		5		N	0.142	3.6	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.20	767.0	30.23	767.7	80.6	27										0.79	20.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.45	748.1			73.4	23.0	55	SW			1		8		SSW	0.350	8.9		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.87	758.6	29.89	759.2	69.8	21.0	86	ESE	10.3	4.6		c	10k	WNW	ESE	0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 329 m., or 1,056 ft.; Mont-Louis, 1,686.40 m., or 5,534.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	28.83	732.2	29.65	753.9	73.0	22.8	80	S			2		6n	S		0.138	3.5	Thunder-storm.	Prof. Dr. Hoh.
Berlin	29.63	752.7	29.80	756.9	72.3	22.4	22	E			5		0			0	0		Prof. Dr. Arndt.
Breslau	29.26	743.2	29.79	756.6	69.1	20.6	45	ENE			3		5			0	0		Royal University Obs'y
Carlsruhe	29.30	744.2	29.71	754.6	68.7	20.4	78	SW			1		5	SE		0.362	9.2		Albert Senz.
Cassel	29.10	739.2	29.71	754.6	77.0	25.0	55	NE			2		7	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.39	746.5	29.75	755.7	74.3	23.5	68	WNW			0		6			0.087	2.2		Physical Society.
Friedrichshafen	28.31	719.2	29.69	754.1	69.1	20.6	65	SW			3		5	SW		0.909	23.1		Chief Telegrapher Wilhelm.
Hamburg	29.72	755.0	29.79	756.7	72.7	22.6	49	SE			4		0			0	0		Dr. Reinhold Kleeman.
Kiel	29.82	757.4	29.84	757.8	65.8	18.8	61	E			3		0			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.81	757.2	29.89	759.3	57.7	14.3	50	N			5		5	N		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.35	745.5	29.76	755.8	74.1	23.4	42	NE			2		1			0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.56	750.7	29.78	756.4	77.2	25.1	35	NNE			5		0			0	0		Dr. Assmann.
Memel	29.85	758.2	29.90	759.4	55.6	13.1	66	N			4		5k						Reinbrecht & Issermann.
Munich	27.91	708.9	29.75	755.7	73.8	23.2	37	NW			2		6	W		0	0		Dr. C. Lang.
Neufahrwasser	29.91	759.8	29.93	760.2	56.7	13.7	61	NE			3		2			0	0		A. Lothes.
Neustadt (Palatinate)	29.19	741.4	29.71	754.6	69.1	20.6	70	W			3		3	W		0.146	3.7		Reallehrer Dicknether.
Posen	29.54	750.2	29.82	757.3	66.9	19.4	38	E			6		6			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.22	742.1	29.74	755.5	69.6	20.9	63	SE			1		6	SSW		0.001	0.02	Raining	Imp. University Observatory.
Stuttgart	28.78	731.0	29.63	752.7	70.7	21.5	57	NW					6	W		0.319	8.1		Prof. Dr. Schoder.
Thorn	29.65	753.2	29.84	757.9	64.4	18.0	39	NE			3		0			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.24	717.4	29.81	757.1	74.1	23.4	56	W	1.8	0.8			8kn		W	0	0		Reallehrer J. Hopfner.
Wustrow	29.88	758.9	29.91	759.6	61.5	16.4	57	ENE			5		0			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.27	743.4	29.64	752.9	82.4	28.0		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published, occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.52	749.7	29.57	751.0	84.8	29.3	77	S	42.6	19.0			6		SW	0	0	Misty	
Deesa	29.10	739.1	29.56	750.7	95.7	35.4	43	SW	23.5	10.5			2	SW		0	0	D. clouds	
Bombay	29.71	754.7	29.75	755.6	87.1	30.6	72	W	16.0	7.2			4		W	0	0	D. clouds	
Poona (Yarrowda)	27.89	708.5	29.74	755.3	80.2	26.8	63	WSW	27.0	12.1			4		W	0	0	D. clouds	
Belgaum	27.27	692.7	29.83	757.6	71.1	21.7	88	WSW	10.0	4.5			8	N	SW	0.05	1.3	Showery	
Lahore	28.65	727.7	29.34	745.2	109.3	42.9	28	WSW	3.3	1.5			0			0	0	Misty	
Roorkee	28.57	725.7	29.42	747.3	99.9	37.7	43	Calm	3.0	1.3			7			0	0	Moist & muggy	
Agra	28.92	734.5	29.45	748.1	101.6	38.7	33	W	5.4	2.4			3		W	0	0		
Nagpur	28.54	724.8	29.55	750.4	92.2	33.4	49	Calm	3.7	1.6			5		W	0.24	6.1	D. clouds	
Jubbulpore	28.21	716.6	29.52	749.8	97.7	36.5	33	W	5.0	2.2			4			0	0	D. clouds	
Lucknow	29.12	739.6	29.48	748.8	95.0	35.0	56	NNE	2.9	1.3			10	Calm		0.01	0.3	Overcast	
Allahabad	29.16	740.8	29.46	748.3	101.4	38.6	41	Calm	1.4	0.6			9	NW		0	0	D. clouds	
Patna	29.35	745.5	29.53	750.0	87.8	31.0	67	NE	2.2	1.0			6	NE	NE	0	0	D. clouds	
Hazaribagh	27.58	700.6	29.55	750.6	85.0	29.4	64	SW	6.9	3.1			8		NW	0	0		
Cuttack	29.52	749.7	29.60	751.8	86.3	30.2	78	S	2.0	0.9			6			0	0	D. clouds	
Calcutta (Alipore)	29.62	752.3	29.64	752.9	78.7	25.9	89	W	6.0	2.7			10		W	1.71	43.4	Drizzling	
Goalpara	29.17	740.9	29.58	751.2	79.2	26.2	93	Calm	2.9	1.3			8			1.04	26.4	D. clouds	
Chittagong	29.52	749.8	29.61	752.1	82.1	27.8	86	SSW	5.0	2.2			8			0	0	D. clouds	
Sibsagar	29.26	743.3	29.59	751.7	84.8	29.3	78	NE	1.1	0.5			4			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.34	745.2	29.74	755.3	66.7	19.3	84	SW	3.1	1.4			10			0.047	1.2		Prof. Giovanni Clodig.
Milan	29.20	741.6	29.69	754.1	79.7	26.5	87	W	1.8	0.8			6	WSW		0.177	4.5		Prof. Schiaparelli.
Padua	29.59	751.6	29.70	754.4	76.6	24.8	43	WSW	16.5	7.5			3			0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.80	731.6	29.69	754.0	71.6	22.0	64	NE	1.8	0.8			6	NW		0.382	9.7		Prof. P. F. Denza.
Genoa	29.58	751.4	29.77	756.2	68.0	20.0	83	SW	6.9	3.1			6	S		1.205	30.6		Prof. G. M. Garibaldi.
Mondovi	27.84	707.2	29.71	754.6	72.7	22.6	52	S			2		8			0.016	0.4		Prof. D. C. Bruno.
Pesaro	29.68	753.9	29.73	755.1	74.7	23.7	57	NE	8.7	3.9			3	SW		0	0		Prof. Luigi Guidi.
Florence	29.51	749.5	29.76	755.9	77.0	25.0	47	SW			4		7			0	0		Cav. F. Meucci.
Leghorn	29.73	755.1	29.81	757.2	74.8	23.8	57	W	1.5	0.8			3			0.012	0.3		Prof. P. Monte.
Rome	29.65	753.1	29.82	757.5	78.8	26.0	46	WSW					1			0	0		Prof. P. Tacchini, Dir.
Lecce	29.50	749.4	29.75	755.6	77.7	25.4	46	E	11.9	5.3			5	N		0	0		Prof. C. De Giorgi.
Cosenza	28.93	734.8	29.78	756.4	83.8	28.8	67	NW	5.6	2.5			0			0	0		Prof. D. Conti.
Cagliari	29.65	753.0	29.84	757.9	81.7	27.6	41	NW			2		8			0	0		Prof. A. Pacinotti.
Palermo	29.63	752.7	29.88	759.0	77.9	25.5	50	NE	9.4	4.2			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.71	754.7	29.76	755.8	76.8	24.9	59	E	11.2	5.0			0			0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.32	744.7	29.82	757.5	76.3	24.6	62	SW	0	0			0			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					63.2	17.3	73	NNE	6.7	3.0		3ck	ck			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.69	754.1	29.89	759.2	63.5	17.5	73	NE	6.2	2.8			5cs			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.80	756.9	29.87	758.7	60.6	15.9	97	NNW	5.4	2.4			10n			0.720	18.29	Raining	The Staff.
Wakayama	29.81	757.2	29.86	758.4	65.1	18.4	65	NE	6.0	2.7			0			0	0	Clear	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.12	638.0	30.15	765.7	57.2	14.0	76	SW			1		10n		SW	0.12	3.0	Cloudy	Prof. L. Perez.
Guanaxuato	23.73	602.9			59.0	15.0	77	Calm	0	0		1c	k	NW	NNE	0	0	Clear	Vicente Fernandez.
Leon	24.47	621.6	30.13	765.4	61.5	16.4	89	N			1	3c	0			0	0	Clear	Prof. M. Leal.
Mazatlan	29.73	755.2	29.99	761.7	78.8	26.0	91	NE			1	2cs	4k		NW	0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.13	587.4	30.10	764.6	56.1	13.4	66	Calm	0	0		7k	0	N		0.17	4.2		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.98	609.0	29.96	760.9	60.6	15.9	95	NE			1		10k		NE	0	0	Covered	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	596.3	30.32	770.2	49.1	9.5	34	Calm	0	0		0	0			0.54	13.8	Very clear	Prof. P. Spina.
San Luis Potosi	24.19	614.4	30.06	763.5	64.6	18.1	43	SE			1		10		E	0	0	Covered	G. Barroeta, M D.
Tlacotalpam	30.03	762.8	30.04	763.1	75.2	24.0	97	W			1	3	5	E	N	0.22	5.7	Raining	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.66	575.4	30.26	768.7	55.4	13.0	80	Calm			0	4c	0	Calm		0.04	1.0	Fair	J. O. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.69	754.0	29.69	754.0	72.0	22.2		SSW			8					0	0		
Groningen	29.61	752.0	29.66	753.4	79.9	26.6		ESE			4					0	0		
Helder	29.65	753.0	29.65	753.0	70.2	21.2		E			1					0.039	1.0		
Hellevoetsluis	29.67	753.7	29.67	753.7	78.4	23.0	72	WSW			8					0	0		
Utrecht	29.62	752.3	29.67	753.5	78.6	25.9	49	SSE			1		5			0.189	4.8	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.82	757.5	29.88	758.9	66.6	19.2	61	Calm	0	0	.....	.....	4	.....	.....	0	0	.....	
Brône	29.78	756.3	29.82	757.3	54.0	12.2	74	NNW	18	8	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.74	755.4	29.88	758.9	64.9	18.3	66	SW	9	4	.....	.....	9	.....	.....	0.020	0.5	.....	
Tromsö	29.63	752.7	29.69	754.1	43.5	6.4	69	SW	9	4	.....	.....	7	.....	.....	0.382	9.7	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.90	759.4	30.11	764.7	69.4	20.8	83	NW	.....	.....	4	.....	3	.....	.....	0.079	2.0	.....	Dr. J. A. Sampaio.
Campo Major	29.01	736.9	29.99	761.8	68.4	20.2	52	SW	6.9	3.1	.....	.....	8	WNW	.....	0.130	3.3	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.07	763.6	30.15	765.8	70.2	21.2	79	SW	2.5	1.1	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.71	754.6	30.07	763.7	64.4	18.0	80	SW	16.8	7.5	.....	.....	9	W	.....	0.008	0.2	.....	The Staff.
Ponta Delgada (Azores)	30.02	762.5	30.09	764.3	72.7	22.6	62	WNW	11.2	5.0	.....	.....	6	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction form—	Rain-fall.		
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't.
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt.
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva St. Paul de Loando	.....	.....	29.88	759.0	71.1	21.7	.....	NW	.....	.....	1	.....	0	.....	.....	1	NW	.....	Blue sky	C. J. de Sousa Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sà da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela	.....	.....	30.00	762.1	65.3	18.5	.....	NW	.....	.....	3	.....	3	.....	.....	2	NW	.....	D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.51	749.6	29.53	750.1	46.2	7.9	85	N	13	6	.....	.....	5ks	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Astrakhan	29.58	751.3	29.50	749.2	81.3	27.4	37	S	13	6	.....	.....	3s	.....	.....	.....	.....	Light clouds	Capt. Wisganow.
Barnaul	29.41	747.0	29.89	759.1	72.9	22.7	42	S	4	2	.....	.....	1	.....	.....	.....	.....	.....	Meteorological Obs.
Dorpat	29.54	750.2	29.77	756.2	58.8	14.9	45	N	9	4	.....	.....	0	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.37	720.7	29.30	744.2	59.7	15.4	53	SW	13	6	.....	.....	4k;ks	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.06	738.2	29.33	744.9	52.9	11.6	55	WSW	11	5	.....	.....	10kn	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.52	749.9	29.54	750.4	73.0	22.8	61	SSE	9	4	.....	.....	2	.....	.....	.....	.....	.....	Lagorio.
Kieff	28.97	735.9	29.59	751.6	60.3	15.7	47	N	13	6	.....	.....	7cks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotskowo*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.32	744.6	29.51	749.6	57.6	14.2	93	E	2	1	.....	.....	10	.....	.....	Blank	Blank	.....	Meteorological Obs.
Moscow	28.95	735.2	29.50	749.2	43.5	6.4	87	NNW	7	3	.....	.....	10s	.....	.....	.....	.....	Light rain	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.49	749.1	29.56	750.9	69.1	20.6	55	N	22	10	.....	.....	10cs;ks	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.71	754.5	29.79	756.7	59.2	15.1	81	SE	4	2	.....	2c	.....	.....	.....	.....	.....	.....	.....
Nukuss	29.48	748.7	29.70	754.3	86.7	30.4	29	NNW	2.0	0.9	.....	.....	1k	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.78	756.4	29.92	760.0	68.9	20.5	88	Calm	0	0	.....	.....	8n	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.66	753.3	29.67	753.7	57.7	14.3	52	N	11	5	.....	.....	3k;ks	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.13	714.5	29.59	751.5	85.1	29.5	84	Calm	0	0	.....	.....	5	.....	.....	.....	.....	Heavy clouds	Teich, A. M.
Tiflis	28.23	717.1	29.59	751.5	70.9	21.6	56	NW	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.35	745.5	29.76	756.0	63.9	17.7	87	NNE	9	4	.....	.....	1k	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.37	746.1	29.79	756.6	59.9	15.5	41	NNW	4	2	.....	.....	5	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.69	754.1	29.97	761.1	64.4	18.0	86	SSW	7	3	.....	.....	3	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.72	754.8	29.84	757.4	75.2	24	51	SW	5.2	2.33	.....	3c;ck	.....	.....	.....	0	0	.....	Antonio Rave, Director
Bilbao, Met. Obs'y	29.92	759.9	29.97	761.3	72.3	22.4	69	NW	2.0	0.89	.....	1	8	SE	.....	0.322	8.2	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.06	687.2	.....	.....	61.7	16.5	73	S	12.5	5.60	.....	.....	3	.....	.....	0.059	1.5	Light clouds	Domingo Martin y Perez.
Madrid, Royal Observatory	27.74	704.7	29.80	759.2	74.5	23.6	47	W	18.6	8.33	.....	0	2	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.76	756.0	29.91	759.6	87.8	31.0	35	SW	2.6	1.17	.....	0	0	.....	.....	0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.94	735.1	29.83	757.6	59.7	15.4	88	SW	23.0	10.3	.....	.....	9	.....	.....	0.402	10.2	Covered	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.98	761.5	30.04	763.1	83.2	28.4	66	SE	4.9	2.2	.....	1c	1k	W	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.3	29.91	759.6	84.2	29.0	93	NE	4.4	2.0	.....	.....	10n	.....	E	0.79	20.0	Raining	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.7	30.13	765.2	68.2	20.1	66	WNW	11.0	4.9	.....	0	1	.....	W	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.6	30.11	764.9	82.0	27.8	81	SE	2.7	1.19	.....	2s	3k	SE	SE	0.059	1.50	Clear	Enrique Gados, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following: at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.75	755.6	29.79	756.6	54.7	12.6		S			4		0			0	0		
Umea	29.76	756.0	29.82	757.3	60.4	15.8	48	S			4		1			0	0		
Hernosand	29.74	755.5	29.80	756.8	60.4	15.8	56	S			4		2			0	0		
Stockholm	29.72	755.0	29.90	759.5	64.8	18.2	35	WSW			2		0			0	0		
Wisby	29.91	759.7	29.97	761.2	52.5	11.4	78	NNW			4		0			0	0		
Sub-Series.																			
Upsala	29.79	756.6	29.87	758.8	68.4	20.2	32	W	6.3	2.8			0			0	0		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia																				J. P. Påhlson.
H. M. Corvette Balder, N. 32° 02′, W. 17° 51′			30.18	766.5	72.3	22.4		W			2		1						D. clouds	Capt. A. C. Schonmeyr
Saga																				M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.37	720.7	29.76	756.0	66.7	19.3	72	E			1		9			0.571	14.5	Covered		The Observatory.
Zurich	28.15	714.9	29.72	754.9	73.4	23.0	55	NW			1		7			0.063	1.6	Cloudy		The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —6.0 mm.; Thermometer, —1.9 Cent. Relative Humidity, +17 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.63	752.5	75.2	24.0	60	WSW	2	1.0			10		SW	0.098	2.5	Thunder-storm		The Observatory.
Fao, Persian Gulf																				
Valona			29.85	758.2	77.9	25.5		NW			2		2			0	0	Slightly cld'y		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y			29.71	754.5	84.9	29.4	59	SW			4		1s		SW	0	0			Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.																				Hon. J. Ferguson.
Chatham, N. B.	29.90	759.4	29.96	761.0	67.9	19.9	74	SW	1	0.4		2ck	0	SW			0	Fair		G. A. Blair.
Charlottetown, P. E. Island	29.97	761.2	30.01	762.2	62.4	16.9	77	SW	4	1.8		0	0			0	0	Clear		H. J. Cundall, C. E.
Cornwall, Ontario	29.79	756.7	29.98	761.5	66.6	19.2	71	SW			2		10s			0	0	Cloudy		James Smith, M. A.
Dalhousie, N. B.	29.74	755.4	29.90	759.4	66.0	18.9	68	W			1	1cs	0			0	0	Clear		H. A. Johnson.
Father Point, Quebec	29.86	758.4	29.88	758.9	64.6	18.1	76	NW	4	1.8		0	4ks			0	0	Fair		J. McWilliams.
Fredericton, N. B.	29.94	760.5	29.98	761.5	71.1	21.7	66	SE	1	0.4		Sm'e	Sm'e			0	0	Smoky		Prof. Harrison.
Fort Garry, Manitoba	29.14	740.1	29.93	760.2	72.7	22.6	76	SE	16	7.2		8k	3ks	SW		0	0	Fair		James Stewart.
Granton, Ontario	29.08	738.6	30.16	766.1	64.0	17.8	89	NW			1	3c	0			0	0	Clear		James Grant.
Halifax, N. S.	29.95	760.7	30.08	764.0	63.9	17.7	73	SW	4	1.8		0	Haze			0	0	Hazy		A. Allison.
Hamilton, Ontario	29.76	755.9	30.14	765.5	71.5	21.9	78	W			2	10cs	0	W		0	0	Cloudy		Geo. Dickson, B. A.
Heart's Content, N. F.																				E. Weedon.
Kingston, Ontario	29.71	754.6	30.04	763.0	66.0	18.9	83	SW	5	2.2			10n			0.02	0.5	Light rain		S. Woods, M. A.
Little Glace Bay, N. S.								SW	6	2.7		4ck	0	SW		0	0	Fair		C. H. Rigby.
Montreal, Quebec	29.78	756.4	29.97	761.2	65.2	18.4	67	SW	15	6.7		6c	3ks	NW		0	0	Cloudy		C. H. McLeod, C. E.
Moose Factory, Ontario	30.26	768.6	30.29	769.4	55.0	12.8	67	N			4	1k	0			0.12	3.0	Clear		J. R. Nason.
Norwood, Ontario	29.37	746.0	30.04	763.0	65.6	18.7	81	NW	5	2.2			10s			0	0	Cloudy		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.40	746.7	30.07	763.8	63.0	17.2	89	W	8	3.6		2cs	0	W		0	0	Fair		Rev. R. Mosley.
Peterboro, Ontario																				J. F. Jeffers, M. A.
Port Dover, Ontario	29.48	748.8	30.15	765.8	66.1	18.9	95	S	2	0.9		3c	0	SW		0	0	Fair		H. Morgan.
Port Stanley, Ontario	29.54	750.3	30.16	766.1	71.0	21.7	73	W	6	2.7		2ck	Haze	W		0	0	Hazy		M. Payne.
Quebec, Quebec	29.65	753.1	29.96	761.0	67.0	19.4	74	W			3	0	Haze			0	0	Clear		Capt. Ashe, R. N.
Rockliffe, Ontario	29.55	750.6	30.00	762.0	63.8	17.7	86	W	6	2.7		6ck	0	W		0.17	4.3	Fair		W. H. McIntyre.
St. John, N. B.	29.89	759.2	30.05	763.3	56.0	13.3	87	S	11	4.9		0	4k			0	0	Cloudy		G. Murdock, C. E.
Saugeen, Ontario	29.44	747.8	30.14	765.5	65.7	18.7	75	W	4	1.8		7k	0			0	0	Fair		K. Stewart.
Stratford, Ontario	28.89	733.8	30.14	765.5	64.1	17.8	86	NW	7	3.1		2cs	0			0	0	Clear		C. J. MacGregor, M. A.
Sydney, C. B.	30.01	762.2	30.05	763.3	65.8	18.8	69	S	5	2.2		0	Sm'e			0	0	Hazy		T. C. Hill, C. E.
Toronto, Ontario	29.76	755.9	30.13	765.3	68.0	20.3	67	NW	5	2.2		6cs	0	W		0.02	0.5	Fair		Magnetic Observatory.
Windsor, N. S.																				Prof. John E. Oram, M. A
Woodstock, Ontario	29.09	738.9	30.11	764.8	69.0	20.6	74	Calm	0	0		2cs	5s			0	0	Cloudy		Professor Wolverton.
Yarmouth, N. S.	30.04	763.0	30.11	764.8	59.6	15.3	60	SW	8	3.6		3c	0	SW		0	0	Fair		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.95	760.7	30.19	766.8	67	19.4	50	SW	3	1.3		0	0			0	0	Clear		John Delany.
St. Pierre, N. F., l'Hôpital Maritime			30.08	764.0	56.8	13.8		SW			2					0	0			The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR.

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	30.04	763.0	30.12	765.0	72	22.2	58	W	3	1.3		0	Haze		Calm	0	0	Clear	
Alpena, Michigan	29.52	749.8	30.14	765.5	66	18.9	69	W	6	2.7		0	5s		Calm	0.85	21.6	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.06	738.1	30.19	766.8	66	18.9	59	NE	5	2.2		0	Haze			0	0	Clear	
Atlantic City, New Jersey	30.14	765.5	30.15	765.8	70	21.1	80	SW	6	2.7		10k	Haze	Calm	Calm	0	0	Cloudy	
Augusta, Georgia	30.08	764.0	30.28	769.1	68	20.0	74	Calm			0	5cs	Haze	SW	Calm	0	0	Fair	
Baltimore, Maryland	30.13	765.3	30.18	766.6	75	23.9	56	NW	9	4.0		0	0			0	0	Clear	
Barnegat, New Jersey	30.12	765.0	30.14	765.5	70	21.1	70	SW	3	1.3		8ck	Haze	NE	Calm	0	0	Fair	
Bismarck, Dakota	28.04	712.2	29.90	759.4	73	22.8	71	S	12	5.4		10c	0	W		0	0	Cloudy	
Boerne, Texas	28.64	727.4	29.93	760.2	68	20.0	84	S	2	0.9		0	0			0	0	Clear	
Boise City, Idaho	27.40	696.0	30.36	771.1	40	4.4	66	Calm	0	0		0	0			0	0	Clear	
Boston, Massachusetts	29.95	760.7	30.10	764.5	67	19.4	69	W	3	1.3		1ck	0	Calm		0	0	Clear.	
Brackettville, Texas	28.93	734.0	29.92	760.0	73	22.8	81	E	6	2.7		2c	0	Calm		0	0	Fair	
Breckenridge, Minnesota	29.08	737.3	29.99	761.7	69	20.6	75	SE	18	8.0		5c	0	S		0	0	Fair	
Brownsville, Texas	29.88	758.9	29.92	760.0	76	24.4	86	Calm	0	0		8cs	0	Calm		0	0	Fair	
Buffalo, New York	29.53	750.0	30.11	764.8	68	20.0	70	SW	5	2.2		7k	0	NE		0	0	Fair	
Burkes, Arizona					82	27.8	52	Calm			0	0	0			Inap.	Inap.	Clear.	
Burlington, Vermont	29.74	755.4	30.01	762.2	72	22.2	50	S	9	4.0		5cs	0	W		0	0	Fair	
Cairo, Illinois	29.87	758.7	30.25	768.3	72	22.2	71	E	3	1.3		0	0			0	0	Clear	
Campo, California	27.39	695.7	29.96	761.0	39	3.9	82	SW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.18	766.6	30.19	766.8	69	20.6	80	NE	14	6.3		0	0			0	0	Clear	
Cape Henry, Virginia	30.19	766.8	30.20	767.1	67	19.4	64	SW	3	1.3		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.17	766.3	30.19	766.8	69	20.6	80	NE	14	6.3		2c	0	Calm		0	0	Clear.	
Cape May, New Jersey	30.13	765.3	30.16	766.1	68	20.0	84	SW	10	4.5		2k	0	SW		0	0	Fair	
Castroville, Texas	29.29	744.0	29.97	761.2	73	22.8	81	Calm	0	0			10s		SE	0	0	Cloudy	
Cedar Keys, Florida	30.08	764.0	30.11	764.8	73	22.8	76	NE	11	4.9			10s		NE	0.06	1.5	Cloudy	
Charleston, South Carolina	30.14	765.5	30.19	766.8	71	21.7	80	N	10	4.5		0	0			0	0	Clear	
Charlotte, North Carolina	29.38	746.2	30.17	766.3	70	21.1	57	N	5	2.2		0	0			0	0	Clear.	
Chattanooga, Tennessee	29.44	747.8	30.23	767.8	67	19.4	74	N	1	0.4		2k	Haze	SE	Calm	0	0	Fair	
Cheyenne, Wyoming	24.08	611.6	30.02	762.5	67	19.4	37	S	4	1.8		2c	0	NW		0	0	Fair	
Chicago, Illinois	29.53	750.0	30.20	767.1	69	20.6	56	Calm	0	0		0	0			0	0	Clear	
Chincoteague, Virginia	30.19	766.8	30.20	767.1	69	20.6	84	SW	11	4.9		0	Haze		Calm	0	0	Clear	
Cincinnati, Ohio	29.59	751.6	30.22	767.6	72	22.2	71	Calm	0	0		2cs	Sm'e	SE	Calm	Inap.	Inap.	Fair	
Cleveland, Ohio	29.50	749.3	30.22	767.6	66	18.9	64	SE	3	1.3		0	0			0	0	Clear.	
Coleman City, Texas	28.30	718.8	29.92	760.0	68	20.0	70	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.38	746.2	30.19	766.8	72	22.2	62	NE	1	0.4		5k	0	NE		0	0	Fair	
Concho, Texas	28.17	715.5	29.79	756.7	71	21.7	75	NE	4	1.8		0	0			0	0	Clear	
Corsicana, Texas	29.63	752.6	30.05	764.0	75	23.9	72	S	4	1.8		0	8ks		Calm	0	0	Cloudy	
Davenport, Iowa	29.58	751.3	30.20	767.1	70	21.1	70	E	4	1.8		0	0			0	0	Clear.	
Dayton, Washington T'y					46	7.8	76	SW			1	5k	2s	SW	SW	0.05	1.3	Fair	
Deadwood, Dakota	25.40	645.2			70	21.1	52	Calm	0	0			10s		SW	0	0	Cloudy	
Decatur, Texas	28.92	734.6	30.04	763.0	75	23.9	77	SE	8	3.6		5ck	0	Calm		0	0	Clear	
Delaware Breakwater, Del	30.14	765.5	30.16	766.1	66	18.9	89	SW	6	2.7		5k	0	N		0	0	Fair	
Denison, Texas	29.32	744.7	30.09	764.3	72	22.2	76	E	3	1.3		2ck	5ks	N	E	0	0	Fair	
Denver, Colorado	24.78	629.4	30.00	762.0	67	19.4	50	S	2	0.9		8ck	2s	W	Calm	0.17	4.3	Cloudy	
Des Moines, Iowa	29.30	744.2	30.15	765.8	66	18.9	79	S	2	0.9		0	0			0	0	Clear.	
Detroit, Michigan	29.53	750.0	30.19	766.8	65	18.3	73	W	2	0.9		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.43	696.7	29.62	752.3	69	20.6	70	S	24	10.7		0	0			0	0	Clear.	
Dubuque, Iowa	29.54	750.3	30.22	767.6	64	17.8	78	SE	1	0.4		Haze	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.51	749.5	30.17	766.3	66	18.9	89	Calm	0	0		0	Haze		Calm	0	0	Clear.	
Eagle Pass, Texas	29.23	742.4	29.92	760.0	80	26.7	66	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	29.96	761.0	30.03	762.7	55	12.8	74	S	8	3.6		0	8ks		W	0	0	Fair	
Edinburg, Texas					77	25.0	95	Calm			0	5ck	0	S		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.46	748.3	30.15	765.8	71	21.7	53	SW	4	1.8		2k	0	NW		0	0	Fair	
Escanaba, Michigan	29.58	750.0	30.16	766.1	67	19.4	84	Calm	0	0		Haze	0			0	0	Clear	
Florence, Arizona					78	25.6	78	Calm	0	0			10ks		Calm	0	0	Cloudy	
Fort Apache, New Mexico	25.08	637.0	30.52	775.2	63	17.2	94	Calm	0	0			10n		Calm	0.37	9.4	Light rain	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.94	709.7	29.73	755.1	57	13.9	46	NW	30	13.4		10cs	0	NW		0	0	Cloudy	
Fort Custer, Montana	26.93	684.0			57	13.9	30	N	6	2.7			10s		Calm	0	0	Cloudy	
Fort Davis, Texas	25.28	642.1	30.24	768.1	68	20.0	65	SW	1	0.4		Haze	5s	Calm	SW	0	0	Fair	
Fort Elliot, Texas	27.00	685.8	29.15	740.4	65	18.3	73	S	8	3.6		5c	0	S		0	0	Fair	
Fort Gibson, Indian Ter	29.59	751.6	30.11	764.8	72	22.2	62	E	4	1.8		0	0			0	0	Clear	
Fort Grant, Arizona	25.23	640.8	30.03	762.7	64	17.8	68	S	1	0.4			10s		Calm	0.60	15.2	Cloudy	
Fort Griffin, Texas	28.81	731.8	30.05	763.3	68	20.0	84	Calm	0	0		0	8s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.29	693.2			60	15.6	70	W	20	8.9			10cs		Calm	0	0	Cloudy	
Fort McKavett, Texas	27.31	706.4	29.67	753.6	70	21.1	75	S	5	2.2		0	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.86	733.0	29.93	760.2	71	21.7	75	SE	9	4.0		5ck	0		Calm	0	0	Fair	
Fort Stevenson, Dakota	27.97	710.4			74	23.3	72	SE	16	7.2		5k	0	SE		0	0	Fair	
Fort Verde, Arizona					67	19.4	64	SW			1	5k	0	S		0.06	1.5	Fair	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.02	762.5	30.06	763.5	81	27.2	63	Calm	0	0		8ck	0	N		0	0	Fair	
Grand Haven, Michigan	29.58	751.3	30.20	767.1	73	22.8	55	NW	1	0.4		0	0			0	0	Clear	
Helena, Montana					40	4.4	39	S	2	0.9		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.42	747.3	30.18	766.6	72	22.2	76	W	1	0.4		0	0			0	0	Clear	
Indianola, Texas	30.04	763.0	30.07	763.8	83	28.3	67	E	8	3.6		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.11	64.8	30.13	765.3	80	26.7	59	NE	8	3.6		0	0			0	0	Clear	
Keokuk, Iowa	29.56	750.8	30.16	766.1	71	21.7	75	SE	2	0.9		1c	Fog	Calm	Calm	0	0	Clear.	
Key West, Florida	30.01	762.2	30.04	763.0	83	28.3	64	Calm	0	0		0	5ks		E	0.24	6.1	Clearing	
Kittyhawk, North Carolina	30.20	767.1	30.23	767.8	68	20.0	65	NE	7	3.1		2c	Haze	W	Calm	0	0	Fair	
Knoxville, Tennessee	29.25	742.9	30.23	767.8	69	20.6	70	Calm	0	0		0	5ks		SE	0	0	Fair	
La Crosse, Wisconsin	29.47	748.5	30.19	766.8	68	20.0	79	S	1	0.4		0	0			0	0	Clear.	
La Mesilla, New Mexico	26.15	664.2	30.30	769.6	68	20.0	79	Calm	0	0			10s		Calm	0	0	Cloudy	
Laredo, Texas	29.58	751.3	29.91	759.7	77	25.0	82	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.29	744.0	30.10	764.5	73	22.8	63	S	4	1.8		0	0			0	0	Clear.	
Lewiston, Idaho	29.44	747.8	30.10	764.5	49	9.4	71	NE	3	1.3		4k	0	Calm		0.06	1.5	Clear.	
Little Rock, Arkansas	29.64	752.9	30.15	765.8	68	20.0	69	NE	4	1.8		0	0			0	0	Clear	
Los Angeles, California	29.60	751.8	29.94	760.5	54	12.2	93	W	3	1.3			Fog		Calm	0	0	Dense fog	
Louisville, Kentucky	29.66	753.4	30.21	767.3	70	21.1	75	W	1	0.4		2c	Sm'e	Calm	Calm	Inap.	Inap.	Clear	
Lynchburg, Virginia	29.55	750.6	30.21	767.3	70	21.1	66	S	1	0.4		0	Haze			0	0	Clear.	
Madison, Wisconsin	29.23	742.4	30.19	766.8	68	20.0	79	S	3	1.3		0	0			0	0	Clear	
Marquette, Michigan	29.46	748.3	30.13	765.3	76	24.4	60	W	10	4.5		0	0			0	0	Clear	

UNITED STATES SERIES—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
Mason, Texas	28.44	722.4	30.14	765.5	74	23.3	76	SE	3	1.3		0	0			0	0	Clear	
Memphis, Tennessee	29.81	757.2	30.15	765.8	68	20.0	79	NE	5	2.2		Haze	5s		Calm	0	0	Fair	
Milwaukee, Wisconsin	29.49	749.0	30.20	767.1	71	21.7	62	SW	4	1.8		2ck	0	SW		0	0	Fair	
Mobile, Alabama	30.06	763.5	30.10	764.5	74	23.3	76	N	8	3.6		5c	2s	W	Calm	0	0	Fair	
Montgomery, Alabama	29.97	761.2	30.20	767.1	73	22.8	60	E	3	1.3		8cs	0	Calm		0	0	Fair	
Morgantown, West Virginia	29.23	742.4	30.20	767.1	68	20.0	79	Calm	0	0		5k	0	NW		0	0	Fair	
Mt Washington, N. H.	23.98	609.1	30.34	770.6	47	8.3	69	NW	20	8.9		0	Sm'e		NW	0	0	Clear	
Nashville, Tennessee	29.70	754.4	30.22	767.6	75	23.9	60	N	1	0.4		2cs	0	Calm		0	0	Fair	
New Haven, Connecticut	30.01	762.2	30.12	765.0	73	22.8	72	S	3	1.3		5ck	Haze	S	Calm	0	0	Fair	
New London, Connecticut	30.08	764.0	30.13	765.3	70	21.1	75	W	6	2.7		1ck	Haze	W	Calm	0	0	Clear	
New Orleans, Louisiana	30.02	762.5	30.08	764.0	79	26.1	58	NE	12	5.4		0	Haze		Calm	0	0	Clear	
Newport, Rhode Island	30.07	763.8	30.12	765.0	66	18.9	79	SW	14	6.3		5c	Haze	NW		0	0	Fair	
New River, North Carolina					67	19.4	64	NW			1	1c	0	NW				Clear	
New York, New York	29.97	761.2	30.14	765.5	68	20.0	74	SW	2	0.9		2k	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.15	765.8	30.21	767.3	70	21.1	57	NW	1	0.4		1c	Sm'e	SW	Calm	0	0	Clear	
North Platte, Nebraska	27.09	688.1	29.54	750.3	68	20.0	74	SE	28	12.5		5c	0	SE		0	0	Fair	
Olympia, Washington Ter.	30.16	766.1	30.20	767.1	49.0	9.4	96	S	7	3.1			10n		S	0.28	7.1	Light rain	
Omaha, Nebraska	28.98	736.1	30.03	762.7	74	23.3	68	S	8	3.6		0	1s		Calm	0	0	Clear	
Oswego, New York	29.81	757.2	30.12	765.0	68	20.0	60	SW	7	3.1		5c	0	N		0	0	Fair	
Pembina, Dakota	29.08	738.6	29.86	758.4	70	21.1	75	S	15	6.7		2c	0	Calm		0	0	Clear	
Pensacola, Florida	30.03	762.7	30.07	763.8	72	22.2	80	E	17	7.6			10s		Calm	0.03	0.8	Cloudy	
Philadelphia, Pennsylvania	30.10	764.5	30.15	765.8	72	22.2	68	W	1	0.4		Haze	Haze	Calm	Calm	0	0	Dense haze	
Phœnix, Arizona	28.78	731.0	30.49	774.4	82	27.8	56	E	2	0.9		8k	0	Calm		0.49	12.4	Cloudy	
Pike's Peak, Colorado	18.04	458.2	30.25	768.3	39	3.9	64	S	16	7.2		0	5ks		S	0	0	Fair	
Pilot Point, Texas	29.32	744.7	30.14	765.5	71	21.7	80	SE	5	2.2		8ck	0	SE		0	0	Fair	
Pioche, Nevada	24.11	612.4	29.88	758.9	50	10.0	26	NW	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.41	747.0	30.21	767.3	63	17.2	72	NW	1	0.4		5k	0	Calm		0	0	Fair	
Port Huron, Michigan	29.52	749.8	30.16	766.1	69	20.6	70	SW	1	0.4		8c	0	Calm		0	0	Fair	
Portland, Maine	29.98	761.5	30.03	762.7	70	21.1	61	SW	6	2.7		0	Haze			0	0	Clear	
Portland, Oregon	30.25	767.8	30.31	769.9	49	9.4	93	SE	5	2.2			10n		SW	0.36	9.1	Light rain	
Portsmouth, North Carolina					68	20.0	84	NE	15	6.7		2cs	0	Calm		0	0	Clear	
Prescott, Arizona	24.81	630.2	30.17	766.3	63	17.2	72	S	2	0.9		0	8ks		S	Inap.	Inap.	Cloudy	
Punta Rassa, Florida	30.03	762.7	30.04	763.0	78	25.6	78	NE	10	4.5		2c	0	W		0.01	0.3	Fair	
Red Bluff, California	29.74	755.4	30.10	764.5	59.0	15.0	48	NW	12	5.4		0	0			0	0	Clear	
Rio Grande City, Texas	29.85	758.2	30.06	763.5	78	25.6	82	Calm	0	0		0	0			0	0	Clear	
Rochester, New York	29.50	749.3	30.09	764.3	69	20.6	51	NW	9	4.0		5c	0	SE		0	0	Fair	
Roseburg, Oregon	29.76	755.9	30.35	770.9	39.5	4.1	91	Calm	0	0		1c	0	Calm		Inap.	Inap.	Clear	
Sacramento, California	29.92	760.0	30.00	762.0	60	15.6	55	N	3	1.3		0	0			0	0	Clear	
St. Louis, Missouri	29.66	753.4	30.22	767.6	68	20.0	79	E	3	1.3		0	0			Inap.	Inap.	Clear	
St. Paul, Minnesota	29.32	744.7	30.13	765.3	68	20.0	74	SE	5	2.2		0	0			0	0	Clear	
Salt Lake City, Utah	25.76	654.3	30.09	764.3	52	11.1	29	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.39	746.5	30.07	763.8	72	22.2	85	NE	1	0.4		0	0			0	0	Clear	
San Diego, California	29.91	759.7	29.99	761.7	59	15.0	94	S	5	2.2			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	29.55	750.6	30.20	767.1	69	20.6	65	W	4	1.8		0	0			0	0	Clear	
Sandy Hook, New Jersey	30.09	764.3	30.12	765.0	74	23.3	68	W	6	2.7		5k	0	Calm		0	0	Fair	
San Francisco, California	30.02	762.5	30.09	764.3	53	11.7	73	SW	3	1.3		0	0			0	0	Clear	
Santa Fé, New Mexico	23.36	593.3	29.99	759.4	59	15.0	76	NE	3	1.3		8cs	0	Calm		0.13	3.3	Cloudy	
Savannah, Georgia	30.11	764.8	30.20	767.1	70	21.1	75	N	4	1.8		1c	Fog	Calm	Calm	0	0	Clear	
Shreveport, Louisiana	29.87	758.7	30.08	764.0	72	22.2	67	NE	1	0.4		0	5s		Calm	0.01	0.3	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.19	766.8	30.22	767.6	68	20.0	70	N	5	2.2		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.57	751.1	30.23	767.8	70	21.1	68	Calm	0	0		0	0			0	0	Clear	
Springfield, Massachusetts	29.99	761.7	30.12	765.0	69	20.6	70	NW	1	0.4		0	0			0	0	Clear	
Stockton, Texas	26.98	685.3	29.98	761.5	73	22.8	55	SE	14	6.3		0	7ks		SE	0	0	Fair	
Thatcher's Island, Mass	30.04	763.0	30.09	764.3	63	17.2	89	SW	6	2.7		5ck	0	SW		0	0	Fair	
Toledo, Ohio	29.54	750.3	30.20	767.1	70	21.1	66	NW	4	1.8		0	Haze		Calm	0	0	Clear	
Tucson, Arizona	27.51	698.7	30.06	763.5	81	27.2	66	NW	20	8.9			10s		Calm	0	0	Cloudy	
Umatilla, Oregon	29.91	759.7	30.41	772.4	53	11.7	54	SW	4	1.8			10s		SW	0	0	Cloudy	
Uvalde, Texas	29.14	740.1	29.92	760.0	77	25.0	73	SE	4	1.8		5k	0	SE		0	0	Fair	
Vicksburg, Mississippi	29.89	759.2	30.14	765.5	73	22.8	59	E	2	0.9		2ck	0	NW		0	0	Clear	
Virginia City, Montana	24.40	619.8	29.88	758.9	43	6.1	36	SE	3	1.3		1ck	0	SW		0	0	Clear	
Visalia, California	29.62	752.3	30.00	762.0	48	8.9	56	SW	1	0.4		0	0			0	0	Clear	
Washington, D. C.	30.09	764.3	30.20	767.1	69	20.6	65	SW			1	0	Sm'e			0	0	Clear	
Wickenburg, Arizona					80	26.7	78	S	8	3.6		0	0			0	0	Clear	
Wilmington, North Carolina	30.14	765.5	30.21	767.3	67	19.4	64	NE	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.80	655.3	30.16	766.1	29	— 1.7	56	NE	4	1.8		0	0			0	0	Clear	
Wood's Holl, Massachusetts	30.08	764.0	30.12	765.0	66	18.9	84	SW	12	5.4		2k	Haze	NW		0	0	Fair	
Yankton, Dakota	28.80	731.5	30.04	763.0	71	21.7	75	S	11	4.9		0	0			0	0	Clear	
Yuma, Arizona	29.69	754.1	29.83	757.7	80	26.7	62	SE	8	3.6		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			55.5	13.1	75	Calm	0	0			10ks			0.59	15.0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.01	762.2	30.06	763.5	82	27.8	67	Calm	0	0		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	77.0	25.0	76	Calm	0	0		0	0			0	0	Clear	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	81	27.2	83	E	10	4.5		2k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.05	763.5	30.05	763.3	80	26.7	87	E			3	4c	5k	E		0.380	9.65	Fair	C. J. Hering.
Puerto Berrio, U.S. Col'bia ‖	29.44	747.8	30.00	762.0	79	26.1	89	Calm			0		8s;ks			0.01	0.3		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25		E					7k		E	0	0	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.01	762.2	30.04	763.0	81	27.2	70	Calm	0	0		2c	2k			0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	30.12	765.0	30.17	766.3	41.0	5.0	100	NE	12	5.4		2c	7s	NE	NE	0.01	0.3	Foggy	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,260 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,130.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,396 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,056 (?) ft., or 626 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.17	766.3	73	22.8	85	NE	13	5.8			10		NE					Threatenng	
§ Navy Yard, Portsmouth, N. H.	30.05	763.3	68	20.0	79	W	2	0.9			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.83	757.7	61.5	16.4	97	NE			2		10n		NE	1.02	25.9			Raining	
§ Adams, Payta, Peru	30.02	762.5	67	19.4	89	ESE			2		10		ESE					Cloudy	
§ Alaska, Callao, Peru *	30.04	763.0	62	16.7	88	ESE			2		10					Long	SW	Cloudy	
§ Alert, Yokohama, Japan	29.73	755.1	66	18.9	89	NNW			3		10		Calm			Smooth		Raining	
§ Alliance, St Pierre, Newfoundland	30.14	765.5	50	10.0	93	WSW			2		0					Smooth		Hazy	
§ Ashuelot, Shanghai, China	29.88	758.9	73	22.8	76	SE			2		10			0	0	None		Cloudy	
§ Colorado, New York, N. Y.	30.08	764.0	69	20.6	75	W	3	1.3			5		SW					Hazy	
§ Constellation, N. 37° 33′, W. 76° 08′	30.08	764.0	71	21.7	71	WSW					0					Smooth		Hazy	
§ Constitution, Off Ellis Isl'd., N. Y.	30.13	765.3	66	18.9	79	SW	1	0.4			5		Calm					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	30.18	766.6	65	18.3	78	WSW	6	2.7			0			0	0			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.08	764.0	62	16.7	77	W	2.4	1.1			0			0	0			Clear	
§ Jamestown, Sitka, Alaska *	29.91	759.7	49	9.4	93	WSW			4		10		W			Smooth		Cloudy	
§ Kearsarge, Boston, Mass	30.12	765.0	69	20.6	80	SW			1-2		5		SW			Smooth		Fair	
§ Lackawanna, Gulf of Dulce, Costa Rica †	30.02	762.5	77	25.0	95	Calm			0		8		N					Fair	
§ Marion, S 48° 12′, W. 57° 57′	29.59	751.6	42	5.6	100	NW			3		10			0	0	Mod'ate	NW	Foggy	
§ Michigan, Erie, Pa.	30.12	765.0	66	18.9	68	S			3		2		S					Clear	
§ Minnesota, Hudson river, near N.Y. *	30.13	765.3	69	20.6	90	NNE			0-1		2		Calm					Clear	
§ Monocacy, Chefoo, China	29.89	759.2	69	20.6	95	E			2		10							Cloudy	
§ New Hampshire, Port Royal, S. C.	30.16	766.1	72	22.2	71	N	9	4.0			5	W	Calm	0	0			Hazy	
Nipsic, N. 36° 26′, E. 19° 34′	29.77	756.1	78	25.6	73	NW			3		2					Smooth		D. clouds	
§ Onward, Chimbote, Peru †	29.99	761.7	65	18.3	84	SE			2		8		N			Long	W	Cloudy	
§ Palos, Shanghai, China	29.90	759.4	72	22.2	81	SE			1		10							Cloudy	
§ Passaic, Washington, D. C.	29.20	767.1	71	21.7	65	Calm			0		0			0	0			Clear	
§ Pensacola, N. 46° 15′, W. 125° 04′	30.14	765.5	53	11.7	93	WSW			2		10		WSW			Smooth	SW	Cloudy	
§ Portsmouth, N. 37° 00′, W. 29° 55′	30.14	765.5	67	19.4	100	NW			3		5		NW			Long	NW	Fair	
§ Powhatan, New York, N. Y.	30.13	765.3	67	19.4	89	Calm			0		5		SW					Fair	
§ Quinnebaug, N. 56° 03′, E. 16° 22′	29.96	761.0	55	12.8	80	NE			3		2		NE			Smooth		Clear	
§ Richmond, Kobe, Japan	29.89	759.2	68	20.0	90	N			3		2			0	0			Clear	
Rio Bravo, Brownsville, Texas †	30.19	766.8	76	24.4	100	SE	1	0.4			5		Calm	0	0			Fair	
§ Saratoga N 37° 57′, E. 6° 39′	29.95	760.7	74	23.3	72	WNW			4		0			0	0	Light	W	Clear	
§ Shenandoah, Buenos Ayres, Argentine Republic.	30.04	763.0	58	14.4	82	N			6		2					Mod'ate	N	Fair	
§ St. Louis, League Island, Pa.	30.15	765.8	69	20.6	90	W	5	2.2			0			0	0			Clear	
Swatara, Hong-Kong, China †	29.80	756.9	82	27.8	87	S			1		10		Calm			Smooth		Cloudy	
§ Tennessee, New York, N. Y.	30.14	765.5	73	22.8	55	SSW			1		2		Calm			Smooth		Hazy	
§ Ticonderoga, Nagasaki, Japan	29.86	758.4	67	19.4	95	N			2		2		Calm			Smooth		Clear	
§ Trenton, N. 36° 00′, W. 11° 08′	30.13	765.3	67	19.4	79	WSW			3		5?			0	0	Long	SW	Cloudy?	
§ Vandalia, Provincetown, Mass.	30.14	765.5	65	18.3	89	SSW			3		2		NW					Fair	
§ Wabash, Boston, Mass.	30.10	764.5	69	20.6	70	WSW	6	2.7			5			0	0			Fair	
§ Wachusett, S. 33° 12′, W. 72° 06′	29.96	761.0	56	13.3	100	N			5		10		N			Mod'ate	N	Cloudy	
Wyoming, N. 36° 44′, W. 2° 00′	29.92	760.0	67	19.4	74	SW			5		2		SW			Mod'ate	SW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer.																			
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent St. George's Channel	29.54	750.3	64	17.8	73	NE			3		8		NE	Mod'ate	Mod'ate			Fair	
S. S. Ohio, Henry Morrison N. 38° 54', W. 70° 54'.....†	30.24	768.1	72	22.2	95	ENE			1		0			0	0	Small	E	Very fine	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger, N. 25° 58', W. 113° 18'.....†	29.94	761.0	64	17.8	79	Calm			0		10		NW	0	0	Gentle	W	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 40° 27', W. 50° 00'.....	29.99	761.7	60?	15.6?	??	NNE			3		5		NE	0	0	Mod'ate	NE	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 49° 01', W. 17° 59'.....	29.46	748.3	78	25.6	46	S			2		2		SW	0	0	Mod'ate	NW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risins.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 40° 40', W. 136° 37'.....†	30.52	775.2	54	12.2	93	NW			3		10		NNW			Light	NW	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, N. 29° 18', E. 117° 31'.....†	29.76	755.9	79	26.1	95	Var.			2		8s		SW	Heavy	Heavy	Smooth	SW	Misty	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 37° 29', W. 125° 53'.....*	30.26	768.6	52	11.1	93	NW			5		5		NW	0	0	Mod'ate	NW	D. clouds	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lach'an.																			
S. S. Oregon, E. Polemann, Portland, Oregon.....†	30.22	767.6	50.0	10.0		NE			3		10s		SSE					Raining	J. M. Lachlan. L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander San Francisco, Cal.....†	30.12	765.0	52	11.1		S			1		0							Clear	
S. S. Orizaba, C. B. Johnson, N. 32° 50,' W. 117° 20'...†	29.92	760.0	58	14.4		SE			1		5		SE	0	0	Smooth	NW	Fair	Harrison & Marshall.
S. S. State of California, G. Dobney, San Francisco, Cal.....†	30.07	763.8	48	8.9		NW			3		5		NW					Fair	
S. S. Victoria, H. M. Haywood. N. 46° 11', W. 124° 42'.....†	30.31	769.9	54	12.2	100	SW			3		10		NW			Small	WNW	Cloudy	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Corinto, Nicaragua.....†	29.88	758.9	78	25.6	86	N			1		8		NNE			None		Cloudy	F. A. Johnston.
§ S. S. Australia, S. 34° 27′. E. 150° 29′.....†	29.86	758.4				W			4		0					Mod'ate	W	Clear	Banneman.
§S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30.01	762.2	52	11.1	86	S			2		0							Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 21° 00′ W. 105° 35′...†	30.03	762.7	82	27.8	83	N			1		2		N	0	0	Smooth	W	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 37° 33′. E. 145° 18′.....†	29.95	760.7	62	16.7	77	ENE			6		10		ENE	0	0	Rough	ENE	Cloudy	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, N. 9° 23′. W. 85° 01′.....†	29.93	760.2	83	28.3	100	NE			3		5		Calm	0	0	Small	SSE	Cloudy	
§S.S. Dakota, H. G. Morse. N. 38° 56′, W. 123° 48′...†	30.04	763.0	53	11.7	80	NW			4		0			0	0	Small	NW	Clear	
§S.S. Granada, J M Cavarly																			C. T. Rode.
§ S. S. Idaho. E. Alexander, Esquimalt, Vancouver I'd.....†	30.14	765.5	61	16.1		SSW			1		2		WNW	0	0			Fair	E. Alexander.
§S.S. Zealandia, R. C. Ghest, S. 3° 54′, W. 167° 01′.....	29.86	758.4	81	27.2		SE			4		2		E			Smooth	S	Clear	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 42° 19′, W. 42° 17′.....†	30.03	762.7	64	17.8		NNE			3		2		NE	Light	Light			Clear	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
§ S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry.																			J. Jones.
S. S. Celtic, B. Gleadell, N. 50° 15′, W. 23° 55′.....†	29.62	752.3	57	13.9		NE			4		5		NE	Drizzling 2 h'rs	2 h'rs	Mod'ate	NW	Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.09	764.3	80	26.7		ENE			5		5		E	0.01	0.3			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.	30.17	766.3	84	28.9	83	WSW					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 31° 56′, W. 72° 14′ ...†	30.07	763.8	78	25.6		NNE			1		5?		NE	0	0	Rough	NE	Cloudy?	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 9° 37′, W. 27° 10′.....*†	30.06	763.5	82	27.8		Calm			0		2		SW			Short; Cross	SW; ENE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 50° 50′, W 54° 29′.....†	30.11	764.8				E			2		10					Long	E	Foggy	S. S. Miner.
Brigantine George, W. H Champlin.																			
Iron Cross, W. Randall, N. 26° 20′, W. 79° 58′.....	30.06	763.5	81.5	27.5	85	NE			3		4			Slight	Slight		NNE	D. clouds	W. Randall.
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	30.02	762.5	59	15.0	82	WNW			3		5		W	0	0			Very fine	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 21, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:18 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.08	764.0	80.1	26.7	65	WNW			1		0			0	0	Clear.	Metge.
Algiers			30.02	762.4	84.2	29.0	84	W			1		0			0	0	Clear.	Nicolas.
La Calle			30.02	762.5	77.5	25.3	77	NW			1		0			0	0	Clear.	Fonfrède.
Tunis			30.00	762.0															Jacques
Sfax			30.08	764.0															Gau.
Saida			30.07	763.7															Charon.
Tebessa			30.02	762.4	89.4	31.9	20	NE			1		3			0	0	Pretty fair.	Watrin.
Geriville			30.07	763.8	89.6	32.0	67	NW			1		0			0	0	Clear	Lonchamp.
Laghouat			30.05	763.3	93.0	33.9	20	NNE			1		0			0	0	Clear.	Herlin.
Biskra			30.01	762.3	94.3	34.6	34	WNW			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.09	738.9	29.61	752.2	72.0	22.2	69	NE			4		8			0.520	13.2		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.00	736.5	29.74	755.3	68.7	20.4	61	ENE	8.7	3.9			1			0	0		Dr. Wierzbicki.
Eperies	28.82	731.9	29.65	753.2	70.9	21.6	39	N			5		1cs			0	0		Julius Mikolik.
Gratz	28.47	723.2	29.69	754.0	63.9	17.7	82	E			1		10			0	0		Andreas Rospini.
Hermannstadt	28.24	717.4	29.64	752.9	60.1	15.6	82	SE			2		10			0.274	6.95	Raining	Prof. A. Gottschling.
Kremsmünster, Observatory	28.37	720.6	29.66	753.4	65.1	18.4	81	WNW			2		10			0.370	9.4		The Staff.
Lemberg	28.75	730.2	29.70	754.4	65 3	18.5	49	NE			2		4			0	0		Dr. T. Stanecki.
Pola	29.50	750.9	29.67	753.6	75.9	24.4	62	WSW			1		4			0	0		I.R.Hydrographic Office.
Szathmar	29.20	741.7	29.64	752.9	75.6	24.2	66	E			5		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.35	745.5	29.62	752.3	72.0	22.2	51	Calm			0		6			0	0		Karl Stancel.
Trieste	29.57	751.0	29.67	753.6	68.0	20.0	89	E			1		10			1.371	34.8	Raining	P. Busin.
Vienna	28.99	736.8	29.72	754.9	72.0	22.2	56	SSE			1		2			0.339	8.6		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau.
Brussels	29.53	750.0	29.72	754.9	66.9	19.4	61	WNW			0	0	10	SSE	SSW	0.075	1.90		Royal Observatory.
Furnes	29.74	755.3	29.76	755.9	67.6	19.8	77	NE			1		5			0.303	7.7	Light rain	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.59	751.6	29.69	754.1	54.2	12.3		E	9	4.0			10			0.025	0.64	Foggy	W. Boswell.
Ardrossan	29.59	751.6	29.60	751.8	59	15.0		Calm			0		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.35	745.5	29.58	751.5	61.3	16.3		SE	9	4.0			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.62	752.3	66.3	19.1		SSE	11	4.9			7					D. clouds	John Hartnup.
Bolton (Sharples)	29.10	739.1	29.60	751.8	67.1	19.5		SSW	13	5.8			4					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.24	742.7	29.64	752.8	65.3	18.5	59	S			1		7			0	0	D. clouds	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	82	27.8		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.57	751.1	29.67	753.6	72.0	22.2		SSE			1		5k					D. clouds	H. Todd.
Cardington			29.65	753.1	70.0	21.1		W			0.4		8					Overcast	John McLaren.
Chatham (School M. E.)	29.59	751.6	29.71	754.6	67.9	19.9		S			1	5ck						D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.58	751.3	29.62	752.3	56	13.3		S			4		10					Overcast	J. Mac Gowan.
Dover	29.69	754.1	29.72	754.9	62	16.7		SW			2		2					¾ clouded	J. Costello.
Falmouth (Observatory)	29.36	745.7	29.59	751.6	58.0	14.4		SE			3		9					Overcast	The Staff.
Fort Napier, Natal	28.25	717.5	30.46	773.7	60.0	15.6		NW			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.79	756.7	30.02	762.5	88	31.1		NE			1		10					Drizzling	
Galway (Queen's College)			29.52	749.8	60	15.6		Calm			0		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean	30.02	762.5	30.07	763.8	74.4	23.6		SW			6		6					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.40	746.7	29.60	751.8	64.9	18.3		E			4		10k					Overcast	D. G. Maclean.
Great Yarmouth	29.71	754.6	29.72	754.9	61	16.1		SSE			3		0					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.51	749.5	29.68	753.9	71.3	21.8		SSW			1		2					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.39	746.5	29.61	752.1	57.5	14.2		SSE			2		8					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	29.77	756.1	29.89	759.2	62	16.7		S			2	ck				0.10	2.5	Showery	M. P. Moyle.
Holyhead	29.61	752.1	29.62	752.3	65	18.3		SSW			3		2					Blue sky	John Tilston.
Jersey	29.38	746.2	29.66	753.4	57.9	14.4		S			3		8					Gloomy	J. Fisher.
Kew (Observatory)	29.64	752.8	29.68	753.9	68.0	20.0		S	13	5.8			6					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.39	746.5	29.63	752.6	66.7	19.3		SE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.82	757.4	29.89	759.2	77.8	25.4		W			2		0					Blue sky	A. King.
Nairn																			W. D. Penny.
Nassau, Bahamas			29.99	761.7	83.0	28.3		SE			3		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.57	749.3	29.68	753.9	73.5	22.9		S			3		4k		SSE	0.139	3.53	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.13	739.9	29.63	752.6	64.0	17.8		SE			1-2		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.43	747.5	29.68	753.9	65	18.3		S			2		5					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.52	749.8	29.60	751.8	60.0	15.6		ESE			3		10					Overcast	John Merrifield.
*Roche's Point	29.52	749.8	29.84	752.8	66	18.9		SSE			3		5					Raining	Wm. Kennedy.
St. Ann's Head	29.44	747.8	29.60	751.8	59	15.0		SSE			1		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.72	754.9	60.5	15.8		ESE	24	10.7			5					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.52	749.8	29.59	751.6	77.2	25.1		NNE			2		7			2.44	62.0	Showery	Serg't W. H. Lyne.
Sheffield	29.40	746.7	29.67	753.6	68.3	20.2		SW			1		1			0	0	Blue sky	W. F. Cooper.
Silloth Rectory	29.60	751.8	29.63	752.6	62.3	16.8	76	W			2		8			0.025	0.64	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.65	753.1	66.6	18.9		SSW	12	5.4			7					Misty	Rev. S. J. Perry.
Stratfield Turgiss	29.40	746.7	29.68	753.9	65.2	18.4		S			2		5					Squally	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.58	751.3	29.59	751.6	64	17.8		SE			6		6					D. clouds	W. Newcombe.
Valencia (Observatory)	29.53	750.0	29.56	750.8	61.7	16.5		WSW	17	7.6			7					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y	29.40	746.7	29.44	747.8	71.0	21.7	39	SSE	6.8	3.0		0	0			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			30.15	765.8	48.0	8.9	86	S			2		10k			0.09	2.3	Hazy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.66	753.4	56.0	13.3		E			2		10s			0.15	3.8	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.85	758.2	30.04	763.0	73.4	23.0	66	ENE	9.5	4.2		0	2		E	0.14	3.6	Fine	C. Meldrum.
Melbourne (Observatory)	30.08	764.0	30.17	766.3	39.0	3.9	100	SSW	3	1.3			5			0.01	0.3	Foggy	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.63	752.6	64	17.8		SE			3		10			0.2	5.		J. Youngclause.
North Unst, Shetland I's			29.82	757.4				E			4		7		Calm	0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia, N. 42° 30′, W. 50° 40′	2	NNE, SSE	Overcast	Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N 27° 30′, W. 79° 40′	5	N	Squally	Capt. W. Randall.
Ship Lochee, S. 31° 40′, E. 32° 05′			D. clouds	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N 47° 25′, W. 20° 36′			D. clouds	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 36° 53′, E. 12° 22′			Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	70.2	21.2	89	Calm			0	9ks				1.81	46.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.78	756.5	29.83	757.7	62.1	16.7	56	SE			2		0						
Faröe	29.73	755.1	29.75	755.6	68.9	20.5	50	ESE			4		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.86	758.5	29.91	759.6	52.5	11.4	95	W			2		10					Foggy	
Thorshavn (Faröe)	29.87	758.6	29.90	759.5	52.2	11.2	81	NE			3		10						
Vestervig	29.69	754.0	29.78	756.4	66.9	19.4	42	E			2		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.19	741.4	29.74	755.4	61.7	16.5	85	S			1		10n			0.213	5.4	Raining	Collignon, Director.
Amiens, Normal School	29.67	753.5	29.77	756.1	83.5	28.6	27	SE			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.44	747.8	29.69	754.2	59.4	15.2	76	N			2		Sk;s:n	E		0	0		Klein, Commandant.
Avignon, Normal School	29.72	755.0	29.80	757.0	75.7	24.3	51	NNW			1					0.08	2.	Light clouds	Giraud, Director.
Bar-sur-Seine	29.22	742.1	29.75	755.6	71.4	21.9	68	S			1		8kn		SW	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.46	748.3	29.72	754.8	70.7	21.5	57	S			1		8		S	0.014	0.35	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.93	734.9	29.80	756.8	68.5	20.3	66	SSW			1		5		SW	0	0	Cloudy	A. Carré, Director.
Bordeaux	29.57	751.1	29.77	756.1	67.6	19.8	60	W			3		8		W	0	0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	28.95	735.2	29.87	758.6	73.8	23.2	55	SE			1		5k	N	S	0	0	Cloudy	Marlot, Director.
Bourges, Normal School	29.30	744.3	29.84	757.9	68.4	20.2	69	SW			4		n		SW	0.35	9.		M. Gence, Director.
Brest, Naval Observatory	29.38	746.3	29.63	752.5	65.8	18.8	75	SW			2		5		SW	0.089	2.25	Squally	Ch. de Rernaree, Dir
Caen, Normal School	29.58	751.4	29.65	753.2	61.9	16.6	98	SW			1		10		SE	0.335	8.5	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.31	744.4	29.70	754.3	78.1	25.6	44	E			1		2	W		0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.45	748.0	29.76	755.9	74.7	23.7	48	SSW			1		2		SW	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.34	745.3	29.91	759.6	57.6	14.2	95	ESE			1		10		S	0	0	Covered	E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.39	721.0	29.69	754.1	67.6	19.8	50	SW			1		8		SW	0.291	7.4		Allnard, Director.
Commercy, Normal School	28.93	734.7	29.76	755.8	68.0	20	53	W			1		kn	W	W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.72	729.6	29.87	758.6	75.2	24.0	34	W			2		5		SW	0.051	1.3		L. Kina, Director.
Grenoble, Normal School	29.02	737.0	29.75	755.7	71.2	21.8	77	SW			1		k			0.43	11.		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.53	750.0	29.74	755.4	61.5	16.4	79	SSW			3		8	W	S	0	0	Very cloudy	Mouillot, Director.
Le Mans, Normal School	29.40	746.7	29.70	754.3	64.8	18.2	66	WNW			2		10		S	0.154	3.9	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.85	732.9	29.74	755.4	72.9	22.7	48	SE			1		2k		S			Slightly cl'dy	M. Cadoret, Director
Lorient, Naval Observatory	29.56	750.8	29.66	753.4	60.8	16.0	89	S			6		10		S	0.591	15.00	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.17	740.9	29.76	755.9	72.5	22.5	44	SE			1		cn			0.264	6.7		Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.54	750.3	29.80	757.0	72.5	22.5	44	WSW			1-2		5		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.74	729.9	29.74	755.3	70.7	21.5	59	S			1		kn		S	0.16	4.		Barbier, Director.
Mont-Louis	24.69	627.2	29.93	760.2	55.0	12.8	62	W	11.2	5.0			8		W	0	0		M. Cave, for Dr. Fines.
Nice	29.66	753.4	29.69	754.2	73.8	23.2	68	SW			2		1	W	SW	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.59	751.5	29.78	756.5	77.2	25.1	39	S			1		2		S	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.64	752.8	29.74	755.4	73.2	22.9	64	SE	11.2	5.0			4	W		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.42	569.4			37.4	3.0							10		SW	0.232	5.9	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.76	730.5	29.78	756.4	72.7	22.6	52	S			1		5	S	S	0.031	0.8	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	24.96	634.0			49.5	9.7	80	SSW			3		5k		SW	0.209	5.3		Allnard, Director.
Rochefort, Naval Obs'y	29.74	755.5	29.78	756.3	64.4	18	77	W			3		5	W	W	2.05	52.	½ covered	Lt. E. Demante, Director
Rouen, Normal School	29.62	752.3	29.71	754.5	66.9	19.4	59	S			1		10		S	0.091	2.3	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.66	751.9	29.63	752.7	63.0	17.2	76	S			4		5	SSE	SSE	0.085	2.15	Cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.56	750.9	29.73	755.1	69.3	20.7	56	S			2		8	S		0.035	0.9	Al. covered.	E. Renou, Director.
Tarbes, Normal School	28.77	730.8	29.84	757.8	59.0	15	58	SW			1								T. Huguet, Director
Toulouse, Observatory	29.12	739.7	29.84	758.0	68.5	20.3	54	NW			4		8			0.047	1.2	Very cloudy	B. Baillaud, Dir.
Tours	29.49	749.0	29.69	754.0	66.2	19.0	64	SW			1		10		SSW	0.169	4.3	Threatening	M. de Tastes.
Versailles, Observatory	29.24	742.6	29.73	755.2	68.0	20.0	53	SW			1					0.171	4.34		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S'	29.06	738.2	29.74	755.4	75.2	24	46	E			1		2			0.12	3.	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.18	766.5	30.21	767.2	80.6	27										0.47	12.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.45	748.1			69.6	20.9	54	SSW			1		9		SSW	0.004	0.1		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.92	760.0	29.95	760.6	67.1	19.5	84	E	7.2	3.2			9k		E	0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,656.40 m., or 5,434.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.84	732.5	29.69	754.2	69.4	20.8	83	Calm			0		8			0.197	5.0		Prof. Dr. Hoh.
Berlin	29.56	750.9	29.73	755.1	74.5	23.6	29	NE			4		0			0	0		Prof. Dr. Arndt.
Breslau	29.26	743.1	29.78	756.5	70.0	21.1	33	E			3		0			0	0		Royal University Obs'y
Carlsruhe	29.31	744.5	29.72	754.8	69.8	21.0	69	SW			2		10	SW		0.193	4.9	Raining	Albert Senz.
Cassel	29.08	738.6	29.68	753.9	75.9	24.4	42	NW			2		7	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.44	747.8	29.80	757.0	64.4	18.0	78	SW			1		10			0.480	12.2	Raining	Physical Society.
Friedrichshafen	28.37	720.7	29.77	756.1	63.7	17.6	82	SW			4		10	SW		0.110	2.8	Raining	Chief Telegrapher Wilhelm.
Hamburg	29.66	753.3	29.73	755.1	71.8	22.1	48	SE			4		1			0	0		Dr. Reinhold Kleeman.
Kiel	29.72	754.8	29.73	755.2	70.3	21.3	50	SE			2		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.76	755.9	29.84	758.0	66.2	19.0	52	N			1		4	N		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.31	744.4	29.71	754.6	72.7	22.6	41	NE			2		2	E		0	0		Prof. Dr. Bruhns, Privy Counselor
Magdeburg	29.51	749.5	29.73	755.2	75.7	24.3	30	E			4		0			0	0		Dr. Assmann.
Memel	29.83	757.6	29.87	758.8	56.1	13.4	52	NW			3								Reinbrecht & Issermann
Munich	27.96	710.1	29.50	757.0	61.2	16.2	80	W			3		10	SW		0.969	24.6	Raining	Dr. C. Lang.
Neufahrwasser	29.85	758.3	29.87	758.7	58.3	14.6	65	ENE			3		0			0	0		A. Lothes.
Neustadt (Palatinate)	29.20	741.6	29.72	754.9	71.8	22.1	67	WNW			2		9			0.036	0.9		Reallehrer Dicknether.
Posen	29.50	749.3	29.78	756.4	69.3	20.7	34	E			6		0			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.24	742.8	29.77	756.2	72.3	22.4	54	S			1		8			0.081	2.05	Raining	Imp. University Observatory.
Stuttgart	28.80	731.6	29.67	753.5	67.1	19.5	70	NW					10			0.161	4.1	Raining	Prof. Dr. Schoder.
Thorn	29.63	752.5	29.81	757.2	67.3	19.6	37	NE			3		0			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.28	718.2	29.84	758.0	60.4	15.8	90	W	2.0	0.9			10		W	0.417	10.6	Rain & fog	Reallehrer J. Hopfner.
Wustrow	29.78	756.5	29.81	757.2	68.7	20.4	51	ENE			3		28			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.28	743.8	29.65	753.2	88.3	31.3		SW			2.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.53	750.0	29.58	751.5	85.0	29.4	78	SSW	38.7	17.3			4		W	0	0	Misty	
Deesa	29.11	739.3	29.56	750.9	95.8	35.4	30	SW	24.1	10.8			1	WSW		0	0	Misty	
Bombay	29.72	754.9	29.76	755.8	87.1	30.6	72	W	14.0	6.3			7	ENE		0	0	D. clouds	
Poona (Yarrowda)	27.90	708.7	29.75	755.6	79.3	26.3	63	WSW	24.0	10.7			7		W	0	0	D. clouds	
Belgaum	27.27	692.7	29.82	757.5	72.3	22.4	50	WSW	7.0	3.1			8	E	E	0.42	10.7	D. clouds	
Lahore	28.67	728.2	29.37	746.0	106.3	41.3	28	SW	4.0	1.8			0			0	0	Misty	
Roorkee	28.57	725.6	29.43	747.4	97.3	36.3	45	SW	3.0	1.3			3			0.12	3.0		
Agra	28.90	734.2	29.44	747.7	104.6	40.3	29	W	5.0	2.2			3		W	0	0		
Nagpur	28.56	725.3	29.57	751.2	88.5	31.4	56	NW	6.3	2.8			8		W	0	0	D. clouds	
Jubbulpore	28.18	715.8	29.49	748.9	100.1	37.8	26	N	5.2	2.3			3			0	0	D. clouds	
Lucknow	29.10	739.0	29.45	748.1	97.8	36.6	43	N	3.3	1.5			5	NNW		0	0	D. clouds	
Allahabad	29.13	739.8	29.42	747.3	100.1	37.8	51	NNW	3.6	1.6			9	NE		0	0	D. clouds	
Patna	29.30	744.3	29.48	748.8	91.5	33.1	65	ENE	2.3	1.0			4	NE	NE	0	0	D. clouds	
Hazaribagh	27.56	700.1	29.54	750.3	83.0	28.3	67	SSW	10.4	4.6			9		N			Drizzling	
Cuttack	29.52	749.8	29.60	751.8	85.0	29.4	78	SW	3.1	1.4			5			0.90	22.9	D. clouds	
Calcutta (Alipore)	29.55	750.6	29.58	751.2	83.2	28.4	84	SSW	2.0	0.9			8	SW		0.01	0.3	Drizzling	
Goalpara	29.18	741.1	29.58	751.4	80.7	27.1	89	SSE	1.6	0.7			9			0.03	0.8	D. clouds	
Chittagong	29.52	749.8	29.61	752.1	82.9	28.3	87	SSE	4.5	2.0			10			0	0	Overcast	
Sibsagar	29.27	743.5	29.60	752.0	81.7	27.6	92	NNE	1.9	0.8			10	SW	SW	1.80	45.7	Overcast	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.26	743.2	29.66	753.3	76.1	24.5	65	SW	4.3	1.9			7			0	0		Prof. Giovanni Giodig.
Milan	29.14	740.2	29.63	752.6	82.8	28.2	43	SW	4.3	1.9			4	NW		0	0		Prof. Schiaparelli.
Padua	29.53	750.0	29.64	752.8	77.4	25.2	44	W	10.5	4.7			5	SW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.74	730.1	29.62	752.4	72.9	22.7	51	SE	4.3	1.9			3			0	0		Prof. P. F. Denza.
Genoa	29.55	750.6	29.74	755.4	71.2	21.8	67	S	4.9	2.2			2	S		0.016	0.4		Prof. G. M. Garibaldi.
Mondovi	27.79	705.8	29.63	752.7	74.1	23.4	51	NE			4		1			0.043	1.1		Prof. D. C. Bruno.
Pesaro	29.64	752.8	29.69	754.0	75.6	24.2	51	SW	13.7	6.1			7	SW		0	0		Prof. Luigi Guidi.
Florence	29.49	749.1	29.75	755.6	73.4	23.0	64	SW			6		10			0.264	6.7		Cav. F. Meucci.
Leghorn	29.70	754.4	29.78	756.5	72.9	22.7	58	W	16.1	7.2			3			0.016	0.4		Prof. P. Monte.
Rome	29.70	754.4	29.80	756.8	78.6	25.9	47	WSW					1			0	0		Prof. P. Tacchini, Dir.
Lecce	29.52	749.9	29.77	756.1	73.4	23.0	52	ENE	9.4	4.2			9	NW		0.220	5.6		Prof. C. De Giorgi.
Cosenza	28.96	735.6	29.81	757.2	81.0	27.2	63	NW	4.9	2.2			5			0	0		Prof. D. Conti.
Cagliari	29.67	753.6	29.86	758.5	80.6	27.0	33	NW			4		1			0	0		Prof. A. Pacinotti.
Palermo	29.67	753.7	29.92	760.0	76.1	24.5	38	NW	15.0	6.7			0			0	0		Prof. G. Giacciatore.
Syracuse	29.77	756.2	29.82	757.3	76.1	24.5	68	E	15.0	6.7			2	WNW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.30	744.2	29.81	757.1	72.7	22.6	64	SW	11.9	5.3			6			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.7	19.8	72	WNW	1.8	0.8		ck	4cs			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.78	756.4	29.98	761.5	68.3	20.2	81	WSW	2.7	1.2			10s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.07	763.8	30.14	765.5	60.7	15.9	95	NE	5.4	2.4		5ckcs		NE		0.045	1.14	Fair	The Staff.
Wakayama	29.98	761.5	30.03	762.7	69.7	20.9	70	S	2.5	1.1		10ck		E		0	0	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.04	636.1	30.06	763.4	57.2	14.0	77	Calm			0	7k	0	NW		1.27	32.2	Cloudy	Prof. L. Perez.
Guanaxuato	23.66	601.1			60.4	15.8	75	Calm	0	0		1c	9nk	NE	W	0.25	6.4	Very cloudy	Vicente Fernandez.
Leon	24.39	619.6	30.00	761.9	65.0	18.3	88	SW			1	3c	4k	W	W	0	0	Cloudy	Prof. M. Leal.
Mazatlan	29.69	754.1	29.95	760.6	78.0	25.6	93	Calm			0	2cs	6k		NW	0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.6	29.97	761.3	58.3	14.6	73	Calm	0	0		1c	1k			0	0		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.91	607.4	29.82	757.3	63.1	17.3	80	NE			1	2c	0	NE		0	0	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	596.3	30.26	768.7	52.7	11.5	48	Calm	0	0		1ck	0			0.97	24.5	Clear	Prof. P. Spina.
San Luis Potosi	24.20	614.6	30.12	765.0	61.2	16.2	56	E			1	5	0	E		1.23	31.3	Fair	G. Barroeta, M. D.
Tlacotalpam	29.90	759.5	29.91	759.8	79.0	26.1	97	S			1	2	1	SE	SW	0	0	Clear	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.59	573.8	30.18	766.6	55.4	13.0	90	Calm			0	3ck	2ks	NW	NW	0.63	16.0	½ clouded	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.76	755.8	29.76	755.8	68.5	20.3		NNE			2					0.008	0.2		
Groningen	29.67	753.7	29.78	755.1	62.8	17.1		NW			1					0.555	14.1		
Helder	29.74	755.5	29.74	755.5	61.7	16.5		SW			1					0.035	0.9		
Hellevoetsluis	29.74	755.4	29.74	755.4	65.7	18.7	67	NW			1					0	0		
Utrecht	29.71	754.6	29.76	755.8	64.4	18.0	90	SW			1		10			0.496	12.6	Dull	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.71	754.5	29.76	755.9	74.8	23.8	46	NNW	13.9	6.2			0			0	0		
Brönö	29.92	759.9	29.96	760.9	49.3	9.6	84	N	27	12			0			0	0		
Christiania	29.58	751.4	29.72	754.9	76.3	24.6	50	SW	4	2			3			0	0		
Tromsö	29.76	755.8	29.81	757.2	43.3	6.3	66	N	9	4			10			0.205	5.2		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	29.89	759.1	30.10	764.4	70.2	21.2	87	WNW			4		3			0.118	3.0		Dr. J. A. Sampaio.
Campo Major	29.01	736.9	29.99	761.8	69.4	20.8	48	WSW	8.1	3.6			5	W		0.079	2.0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.09	764.3	30.18	766.5	70.5	21.4	78	Calm	0	0			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.74	755.3	30.10	764.4	64.8	18.2	82	SW	18.6	8.3			6			0.059	1.5		The Staff.
Ponta Delgada (Azores)	30.02	762.4	30.09	764.2	68.0	20.0	91	W	13.0	5.8			10			0.012	0.3	Light rain	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Costa			29.88	758.6	71.4	21.9		NW			2		2		NW	1	NW		D. clouds	C. J. de Senna Barcellos, Q. M.
St. Paul de Loando																				J. T. d'Oliveria, Com'd't
Rio Duro																				Antonio Sarmento, Q. M.
Rio Lima, S. C. da Silva Costa																				F. Teixeira da Silva, Comd't.
Sà da Bandeira																				
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.03	762.8	70.2	21.2		W			3		2			2	W		D. clouds	A. Tito da Silva, Q. M. J. G. Felgos, 2nd Lieut.
Tejo, J. M. T. Guimaraes																				

NOTE.—The originals give the weather by the Beaufort notation: no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Archangel	29.45	748.0	29.47	748.5	59.0	15.0	70	Calm	0	0			6n						Capt. Sseliwerstow.
Astrakhan	29.65	753.1	29.57	751.0	80.1	26.7	40	E	4	2			3cs;s					Light clouds	Capt. Wisganow.
Barnaul	29.28	743.7	29.75	755.6	76.5	24.7	47	NE	2	1			1						Meteorological Obs.
Dorpat	29.49	749.1	29.72	755.0	68.7	20.4	41	W	9	4			2cs						Prof. Dr. Weihrauch.
Ekaterinburg	28.60	726.5	29.53	750.1	60.4	15.8	66	W	2	1			5k;ks						Meteorological Obs.
Irkutsk																			
Fasan	29.33	745.0	29.60	751.7	59.5	15.3	49	WSW	2	1			8						Physical Cabinet.
Kertch	29.65	753.2	29.67	753.7	62.2	16.8	81	N	4	2			7						Lagorio.
Kieff	29.05	737.8	29.66	753.4	64.2	17.9	52	N	11	5		c;ck	10ks						Physical Cabinet.
Krotkowo*	29.21	741.9	29.67	753.6	58.8	14.9	60	WNW	0.2	0.1			10						Cand. Fatjanow.
Lugan	29.37	745.9	29.56	750.9	60.1	15.6	65	ENE	4	2			9						Meteorological Obs.
Moscow	29.21	741.8	29.75	755.7	50.4	10.2	76	N	4	2			9ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.65	753.2	29.72	755.0	67.8	19.9	47	N	13	6			8cs						Kurdakof.
Nikolaievsk, on the Amoor	29.71	754.6	29.81	757.2	55.6	13.1	91	SE	16	7			10s						
Nukuss	29.24	742.7	29.45	748.0	102.0	38.9	18	SSE	4.0	1.8			1k						
Orenburg																			
Pekin (China)	29.76	755.8	29.90	759.4	73.0	22.8	75	SW	4	2			2k						Physical Observatory.
St. Petersburg	29.63	752.7	29.65	753.1	62.4	16.9	52	NW	13	6		c	4cs						Central Physical Obs.
Tashkend	28.11	713.9	29.55	750.6	89.2	31.8	84	Calm	0	0			0						Teich, A. M.
Tiflis	28.27	718.1	29.63	752.5	72.3	22.4	59	S	4	2			8s						Physical Observatory.
Vladivostock																			
Warsaw	29.88	746.2	29.79	756.6	66.4	19.1	49	NE	2	1			0						Astronomical Obs.
Wilna	29.30	744.2	29.71	754.5	68.4	19.1	43	WNW	2	1			4					Light clouds	Astronomical Obs.
Yeniseisk	29.61	752.1	29.88	759.0	78.3	25.7	48	S	7	3			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.74	755.3	29.84	757.9	77.4	25.2	40	SSW	6.0	2.69			1k			0	0		Antonio Rave, Director
Bilbao, Met. Obs'y	29.81	757.1	29.86	758.5	74.1	23.4	53	NW	3.1	1.41		3	2	W		0.043	1.1	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.99	685.6			63.3	17.4	68	S	10.8	4.85			10			0.650	16.5	Covered	Domingo Martin y Perez
Madrid, Royal Observatory	27.72	704.0	29.88	758.9	69.6	20.9	55	SW	2.8	1.26		0	6			0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.74	755.4	29.88	759.0	92.3	33.5	33	SW	2.2	1.00		1	3	NE		0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	28.98	736.0	29.83	758.3	64.4	18.0	70	WSW	21.0	9.4			6			0.476	12.1	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.91	759.7	29.98	761.4	77.9	25.5	79	SE	5.8	2.6			10n			0	0	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.1	29.90	759.4	85.1	29.5	74	SE	4.4	2.0						0.06	1.5	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.7	30.13	765.3	65.7	18.7	93	WNW	11.2	5.0		0	10		WNW	0.016	0.4		Capt. C. Pulgzon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.6	30.08	763.9	80.6	27.0	85	SE	4.8	2.13		4k	3kn	SE	SE	0	0	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.6	29.71	754.6	55.0	12.8		N			4		10			0	0		
Umea	29.74	755.3	29.75	755.6	55.0	12.8	43	S			4		5			0	0		
Hernosand	29.73	755.2	29.75	756.5	63.7	17.6	51	S			2		0			0	0		
Stockholm	29.56	750.8	29.74	755.3	73.0	22.8	32	ENE			4		9			0	0		
Wisby	29.74	755.3	29.80	756.8	65.8	18.8	52	W			2		3			0	0		
Sub-Series.																			
Upsala	29.64	752.9	29.73	755.1	70.5	21.4	36	ENE	9.8	4.4			3	W	WSW	0.002	0.05		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia																				J. P. Pâhlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr
Saga, N. 32° 53', W. 17° 43'			30.18	766.5	72.1	22.3		W			1		2						D. clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.30	721.1	29.78	756.3	68.7	20.4	56	E			1		5			0.827	21.0	Cloudy	The Observatory.
Zurich	28.19	716.1	29.79	756.7	66.4	19.1	71	W			2		8			0.240	6.1	Cloudy	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —5.7 mm.; Thermometer, —0.9 Cent. Relative Humidity, +1 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.63	752.6	74.3	23.5	69	ENE	11	5.0			8		N	1.386	35.2	Raining	The Observatory.
Fao, Persian Gulf																			
Valona			29.86	758.5	77.4	25.2		N			2		5			0	0	Cloudy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.71	754.6	86.0	30.0	58	SW			3		2k		SW	0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					61.0	16.1		SW	7	3.1			10n			Inap.	Inap.	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.67	753.6	29.74	755.1	56.3	13.5	93	SW	6	2.7			10s			0.44	11.2	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.75	755.6	29.79	756.7	58.4	14.7	88	SW	15	6.7			10n					Light rain	H. J. Cundall, C. E
Cornwall, Ontario	29.64	752.8	29.82	757.4	63.0	17.2	61	NW			1		8s			0.088	2.23	Cloudy	James Smith, M. A.
Dalhousie, N. B.					61.0	16.1	95	W			1		9ks			0.10	2.5	Cloudy	H. A. Johnson.
Father Point, Quebec	29.68	753.9	29.70	754.4	54.6	12.6	90	W	10	4.5		0	1ks			0.09	2.3	Clear.	J. McWilliams.
Fredericton, N. B.	29.70	754.4	29.77	756.1	57.0	13.9	94	SE	9	4.0			10s			0.240	6.10	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.01	736.8	29.80	756.9	62.5	16.9	94	NE	9	4.0			10n			1.000	25.40	Light rain	James Stewart.
Granton, Ontario	28.94	735.1	29.99	761.7	60.0	20.6	80	NW			1	0	0			0	0	Clear	James Grant.
Halifax, N. S.	29.76	755.9	29.80	759.2	59.3	15.2	78	SW	10	4.5			10n			Inap.	Inap.	Cloudy	A. Allison.
Hamilton, Ontario	29.60	751.8	29.98	761.5	72.2	22.3	75	SW			2	5cs	0	W		0	0	Fair	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.56	750.8	29.89	759.2	64.0	17.8	62	NW	7	3.1			10ks			0.07	1.8	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.								SW	8	3.6		6ck	0	SW		0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.64	752.8	29.83	757.7	61.0	16.1	61	NW	5	2.2		0	1ks			1.09	27.7	Clear.	C. H. McLeod, C. E.
Moose Factory, Ontario	30.20	767.1	30.23	767.8	43.5	6.4	94	NW			3		10n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.23	742.4	29.90	759.4	66.6	19.2	78	NW	2	0.9		5c	3s	NW		0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.30	744.2	29.97	761.2	68.0	17.2	67	N	12	5.4		2cs	0	N		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.92	760.0	65.7	18.7	84	W			1		10n			0	0	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.31	744.5	29.98	761.5	70.1	21.2	90	NW	7	3.1		7ck	0	NW		0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.40	746.7	30.03	762.7	69.4	20.8	75	W	8	3.6		1ck	Haze	NW		0	0	Clear.	M. Payne.
Quebec, Quebec	29.48	748.8	29.79	756.7	58.0	14.4	70	NW			5	0	2s			0.05	1.3	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.50	749.3	29.95	760.7	59.5	15.3	54	NW	6	2.7		0	0			0	0	Clear.	W. H. McIntyre.
St. John, N. B.	29.64	752.8	29.80	756.9	51.0	10.6	96	S	10	4.5			Fog			0.030	0.76	Light fog	G. Murdock, C. E.
Saugeen, Ontario	29.31	744.5	30.01	762.2	61.1	16.2	82	W	8	3.6		8k	0	NW		0	0	Cloudy	K. Stewart.
Stratford, Ontario	28.76	730.5	29.99	761.7	66.8	19.3	78	NW	11	4.9		2cs	0	NW		0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.88	758.9	29.92	760.0	62.0	16.7	73	S	11	4.9		10k	Haze			0	0	Cloudy	T. C. Hill, C. E.
Toronto, Ontario	29.59	751.6	29.96	761.0	71.1	21.7	66	NW	12	5.4		7cs	2s	NW		0	0	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.95	735.3	29.96	761.0	73.8	23.2	61	W	15	6.7		2cs	4s	NE		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.76	755.9	29.83	757.7	56.1	13.4	95	S	13	5.8			Fog			0.02	0.5	Foggy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.88	758.9	30.12	765.0	66	18.9	51	W	3	1.3			10s			0	0	Cloudy	John Delany.
St. Pierre, N. F., Hôpital Maritime			29.91	760.5	55.4	13.0		S			2					0.28	7.1		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.80	756.9	29.88	758.9	72	22.2	71	SW	3	1.3		8c	2ks	SW	SW	0.55	14.0	Cloudy	
Alpena, Michigan	29.37	746.0	30.00	762.0	68	20.0	70	W	5	2.2		5c	0	Calm		0	0	Fair	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.97	735.8	30.08	764.0	71	21.7	57	E	3	1.3		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	29.96	761.0	29.98	761.5	74	23.3	68	W	7	3.1		2c;hz'	Haze	Calm	Calm	0	0	Fair	
August., Georgia	29.96	761.0	30.16	766.1	71	21.7	66	Calm			0	8cs	0	Calm		0	0	Fair	
Baltimore, Maryland	29.97	761.2	30.02	762.5	76	24.4	56	NW	9	4.0		0	Haze			0.12	3.3	Clear	
Barnegat, New Jersey	29.92	760.0	29.94	760.5	76	24.4	60	NW	8	3.6		8c	0	NW		0	0	Fair	
Bismarck, Dakota	28.12	714.2	29.97	761.2	58	14.4	87	N	4	1.8		10cs	0	NW		0.07	1.8	Cloudy	
Boerne, Texas	28.55	725.2	29.83	757.7	67	19.4	84	Calm	0	0		5k	0	SE		0	0	Fair	
Boise City, Idaho	27.22	691.4	30.15	766.6	44	6.7	60	SE	3	1.3		0	0			0	0	Clear.	
Boston, Massachusetts	29.68	753.9	29.82	757.4	71	21.7	58	SW	8	3.6		8cs	0	NW		0.01	0.3	Fair	
Brackettville, Texas	28.82	732.0	29.84	757.9	74	23.3	81	E	6	2.7		2cs	0	Calm		0	0	Fair	
Breckenridge, Minnesota	28.87	733.3	29.82	757.4	67	19.4	95	S	12	5.4			10s		S	0.12	3.0	Cloudy	
Brownsville, Texas	29.87	758.7	29.92	760.0	78	25.6	78	Calm	0	0		8cs	0	Calm		0	0	Fair	
Buffalo, New York	29.19	741.4	29.86	758.4	67	19.4	79	SW	6	2.7		0	5ks		N	Inap.	Inap.	Fair	
Burkes, Arizona					76	24.4	41	Calm			0	5ck	0	SW		0	0	Fair	
Burlington, Vermont	29.55	750.6	29.82	757.4	65	18.3	58	N	7	3.1		2ck	5s	W	NW	0.05	1.3	Fair	
Cairo, Illinois	29.78	756.4	30.16	766.1	73	22.8	72	NE	5	2.2		0	Haze			0	0	Clear.	
Campo, California	27.35	694.7	29.92	760.0	36	2.2	71	SW	3	1.3		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.11	764.8	30.11	764.8	71	21.7	75	NW	5	2.2		2cs	Haze	SE	Calm	0	0	Hazy	
Cape Henry, Virginia	30.04	763.0	30.06	763.5	72	22.2	50	W	13	5.8		0	0			0	0	Clear.	
Cape Lookout, N. Carolina	30.11	764.8	30.13	765.3	69	20.6	90	NE	11	4.9		5c	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	29.96	761.0	29.99	761.7	70	21.1	80	SW	14	6.3		0	0			0	0	Clear.	
Castroville, Texas	29.20	741.7	29.88	758.9	76	24.4	69	E	2	0.9		0	2s		S	0	0	Fair	
Cedar Keys, Florida	30.02	762.5	30.04	763.0	73	22.8	81	NE	8	3.6		1ck	5ks	Calm	Calm	0.10	2.5	Fair	
Charleston, South Carolina	30.05	763.3	30.10	764.5	71	21.7	80	NE	4	1.8		0	0			0	0	Clear.	
Charlotte, North Carolina	29.28	743.7	30.07	763.8	70	21.1	61	SW	3	1.3		5c	Haze	Calm	Calm	0	0	Fair	
Chattanooga, Tennessee	29.32	744.7	30.10	764.5	68	20.0	84	Calm	0	0		10cs	Haze	SE	Calm	0	0	Cloudy	
Cheyenne, Wyoming	24.06	611.1	30.00	762.0	56	13.3	87	NW	1	0.4			10s		NW	0.18	4.6	Cloudy	
Chicago, Illinois	29.42	747.3	30.08	764.0	72	22.2	67	SW	3	1.3		0	0			0	0	Clear.	
Chincoteague, Virginia	30.01	762.2	30.03	762.7	73	22.8	78	W	17	7.6		0	0			0	0	Clear	
Cincinnati, Ohio	29.49	749.0	30.12	765.0	72	22.2	76	Calm	0	0		0	0			0.15	3.8	Clear	
Cleveland, Ohio	29.36	745.7	30.06	763.5	73	22.8	55	W	8	3.6		1k	0	W		0	0	Clear.	
Coleman City, Texas	28.21	716.5	29.82	757.4	70	21.1	80	Calm	0	0		5k	0	Calm		0	0	Fair	
Columbus, Ohio	29.26	743.2	30.07	763.8	71	21.7	62	NE	1	0.4		0	Sm'e		Calm	0	0	Smoky	
Concho, Texas	28.10	713.7	29.73	755.1	71	21.7	75	NE	5	2.2		2c	0	N		0	0	Fair	
Corsicana, Texas	29.60	751.8	30.00	763.5	68	20.0	90	Calm	0	0		0	0			0	0	Clear	
Davenport, Iowa	29.48	748.8	30.10	764.5	73	22.8	63	SE	1	0.4		0	0			0	0	Clear	
Dayton, Washington T'y					43	6.1	83	E			1		10s		W	0	0	Cloudy	
Deadwood, Dakota	25.36	644.1			70	21.1	52	Calm	0	0		0	0			0.04	1.0	Clear	
Decatur, Texas	28.89	733.8	30.01	762.2	73	22.8	85	SE	8	3.6		0	0			0	0	Clear	
Delaware Breakwater, Del.	29.98	761.5	30.00	762.0	73	22.8	72	W	14	6.3		0	0			0	0	Clear	
Denison, Texas	29.28	743.7	30.05	763.3	68	20.0	84	SE	2	0.9		0	0			0	0	Clear.	
Denver, Colorado	24.77	629.2	29.99	761.7	62	16.7	77	SE	2	0.9			10s		SW	0.01	0.3	Cloudy	
Des Moines, Iowa	29.21	741.9	30.06	763.5	72	22.2	68	S	1	0.4		0	0			0	0	Clear.	
Detroit, Michigan	29.41	747.0	30.05	763.3	69	20.6	70	NW	4	1.8		5k	5s	W	W	0	0	Cloudy	
Dodge City, Kansas	27.42	696.5	29.61	752.1	68	20.0	70	S	16	7.2		0	0			0	0	Clear	
Dubuque, Iowa	29.41	747.0	30.09	764.3	69	20.6	75	SE	2	0.9		Haze	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.34	745.2	29.99	761.7	67	19.4	89	NE	3	1.3		5c;k	0	SW		0	0	Fair	
Eagle Pass, Texas	29.18	741.1	29.87	758.7	85	29.4	64	SE	5	2.2		5c	0	Calm		0	0	Fair	
Eastport, Maine	29.68	753.9	29.75	755.6	57	13.9	87	S	6	2.7			10ks		W	0.06	1.5	Threatening	
Edinburg, Texas					74	23.3	95	SE			1	5ck	0	Calm		0	0	Fair	
El Paso, Texas																			
Erie, Pennsylvania	29.32	744.7	30.00	762.0	73	22.8	63	W	10	4.5			10s		NW	0	0	Cloudy	
Escanaba, Michigan	29.40	746.7	30.03	762.7	72	22.2	67	W	3	1.3		5c	0	NW		0	0	Fair	
Florence, Arizona	28.37	720.6	29.97	761.2	76	24.4	73	S	1	0.4		0	0			0.05	1.3	Clear.	
Fort Apache, New Mexico	25.03	635.8	30.48	774.2	58	14.4	94	E	2	0.9		1c	5s	Calm	Calm	0.07	1.8	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.98	710.7	29.57	751.1	53	11.7	79	E	5	2.2		5cs	0	SW		0.07	1.8	Fair	
Fort Custer, Montana	26.75	679.4			58	14.4	58	S	2	0.9		0	0			0	0	Clear	
Fort Davis, Texas	25.24	641.1	30.20	767.1	64	17.8	73	W	2	0.9		1s	0	Calm		0.43	10.9	Clear	
Fort Elliot, Texas	26.97	685.0	29.12	739.6	65	18.3	68	SE	12	5.4		0	0			0	0	Clear.	
Fort Gibson, Indian Ter.	29.54	750.3	30.06	763.5	70	21.1	61	E	8	3.6		0	0			0	0	Clear	
Fort Grant, Arizona	25.22	640.6	30.02	762.5	59	15.0	65	Calm	0	0			10s		Calm	0.72	18.3	Cloudy	
Fort Griffin, Texas	28.76	730.5	29.99	761.7	69	20.6	85	Calm	0	0		0	8s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.18	690.4			58	14.4	57	SE	1	0.4		0	0			0	0	Clear.	
Fort McKavett, Texas	27.76	705.1	29.61	752.1	70	21.1	61	E	3	1.3		1c	0	W		0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.83	732.3	29.90	759.4	71	21.7	75	Calm	0	0		0	0			0	0	Clear.	
Fort Stevenson, Dakota	28.11	714.0			56	13.3	87	Calm	0			8k	0	Calm		0	0	Cloudy	
Fort Verde, Arizona					66	18.9	69	SW		0	2	0	0			0.10	2.5	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.93	760.2	29.98	761.5	77	25.0	86	NE	12	5.4		1ck	5ks	W	E	0.07	1.8	Fair	
Grand Haven, Michigan	29.46	748.3	30.08	764.0	74	23.3	63	SW	6	2.7		0	0			0	0	Clear.	
Helena, Montana					46	7.8	47	NW	1	0.4		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.34	745.2	30.08	764.0	73	22.8	76	Calm	0	0		0	0			0	0	Clear	
Indianola, Texas	29.96	761.0	29.98	761.5	78	25.6	82	NE	16	7.2		2k	0	Calm		0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.02	762.5	30.05	763.3	75	23.9	77	NE	1	0.4			10s		NE	Inap.	Inap.	Cloudy	
Keokuk, Iowa	29.48	748.8	30.07	763.8	73	22.8	72	Calm	0	0		1cs	Sm'e	Calm	Calm	0	0	Dense smoke	
Key West, Florida	29.97	761.2	30.00	762.0	80	26.7	74	SE	7	3.1		0	2s		SE	0.40	10.2	Cloudy	
Kittyhawk, North Carolina	30.09	764.3	30.11	764.8	72	22.2	62	W	12	5.4		5c	Haze	W	Calm	0	0	Fair	
Knoxville, Tennessee	29.14	740.1	30.12	765.0	66.5	19.2	82	NE	1	0.4		5cs	0	Calm		0.45	11.4	Fair	
La Crosse, Wisconsin	29.34	745.2	30.05	763.3	70	21.1	75	S	4	1.8		0	0			0	0	Clear.	
La Mesilla, New Mexico	26.08	662.7	30.23	767.8	68	20.0	89	E	2	0.9		0	0			Inap	Inap.	Clear	
Laredo, Texas	29.50	749.3	29.82	757.4	77	25.0	73	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.25	742.9	30.06	763.5	73	22.8	59	S	4	1.8		0	0			0	0	Clear.	
Lewiston, Idaho	29.27	743.4	29.92	760.0	47	8.3	71	Calm	0	0		2k	0	Calm		0	0	Clear.	
Little Rock, Arkansas	29.78	756.4	30.09	764.3	68	20.0	79	SW	4	1.8		0	0			0	0	Clear.	
Los Angeles, California	29.60	751.8	29.94	760.5	60	15.6	88	S	4	1.8			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.56	750.8	30.10	764.5	72	22.2	67	W	1	0.4		0	Sm'e		Calm	0	0	Light smoke	
Lynchburg, Virginia	29.41	747.0	30.06	763.5	72	22.2	62	W	3	1.3		0	Haze			0	0	Clear.	
Madison, Wisconsin	29.12	739.6	30.08	764.0	76	21.1	70	SW	2	0.9		1ck	Haze	W	Calm	0	0	Light haze.	
Marquette, Michigan	29.33	745.0	30.00	762.0	74	23.3	63	W	12	5.4		2c	0	W		0	0	Clear.	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Mason, Texas	28.36	720.3	30.06	763.5	71	21.7	85	Calm	0	0		0	2ks		SW	0	0	Fair	
Memphis, Tennessee	29.72	754.9	30.05	763.3	73	22.8	67	N	3	1.3		Haze	Haze			0	0	Hazy	
Milwaukee, Wisconsin	29.37	746.0	30.07	763.8	73	22.8	68	W	5	2.2		0	Haze			0	0	Clear	
Mobile, Alabama	30.00	762.0	30.04	763.0	73	22.8	67	E	7	3.1		5c	0	W		Inap.	Inap.	Fair	
Montgomery, Alabama	29.86	758.4	30.09	764.3	74	23.3	59	E	3	1.3		5k	0	E		0	0	Fair	
Morgantown, West Virginia	29.13	739.9	30.09	764.3	68	20.0	84	Calm	0	0		0	Fog		Calm	0	0	Clear	
Mt Washington, N. H.	23.70	602.0	30.06	763.5	44	6.7	100	NW	28	12.5			Fog		NW	0.65	16.5	Dense fog	
Nashville, Tennessee	29.60	751.8	30.12	765.0	73	22.8	67	N	1	0.4		2cs	0			0	0	Clear	
New Haven, Connecticut	29.78	756.4	29.89	759.2	77	25.0	65	W	4	1.8		5cs	0	W		0	0	Fair	
New London, Connecticut	29.84	757.9	29.88	758.9	71	21.7	66	W	5	2.2		3ck	Haze	W	Calm	Inap.	Inap.	Fair	
New Orleans, Louisiana	29.94	760.5	30.00	762.0	73	22.8	67	SE	11	4.9		8c	0	W		0	0	Fair	
Newport, Rhode Island	29.81	757.2	29.86	758.4	70	21.1	70	SW	7	3.1		2c	0	Calm		0.01	0.3	Clear	
New River, North Carolina																			
New York, New York	29.77	756.1	29.94	760.5	69	20.6	75	SW	3	1.3		5k	Haze	SW	Calm	0	0	Fair	
Norfolk, Virginia	30.02	762.5	30.08	764.0	78	25.6	43	W	5	2.2		0	Haze		Calm	0	0	Clear	
North Platte, Nebraska	27.03	686.6	29.47	748.5	69	20.6	77	SE	12	5.4		0	0			0	0	Clear	
Olympia, Washington Ter.	30.06	763.5	30.10	764.5	51.5	10.8	93	W	4	1.8			10s		Calm	0.14	3.6	Cloudy	
Omaha, Nebraska	28.81	734.3	29.94	760.5	77	25.0	61	S	8	3.6		0	0			0	0	Clear	
Oswego, New York	29.63	752.6	29.94	760.5	64	17.8	83	W	8	3.6		2c	5ks	W	W	0.01	0.3	Fair	
Pembina, Dakota	28.95	735.3	29.73	755.1	67	19.4	95	Calm	0	0			10s		S	1.13	28.7	Cloudy	
Pensacola, Florida	30.00	762.0	30.03	762.7	71	21.7	71	NE	16	7.2		4k	7ks	NE	NE	0	0	Cloudy	
Philadelphia, Pennsylvania	29.92	760.0	29.97	761.2	75	23.9	56	W	16	7.2		5c	Haze	W		0	0	Fair	
Phœnix, Arizona	28.71	729.2	30.40	772.1	85	29.4	57	E	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	17.93	455.4	30.14	765.5	33	0.6	70	SW	32	14.3			10ks		SW	0.07	1.8	Cloudy	
Pilot Point, Texas	29.28	743.7	30.10	764.5	72	22.2	68	SE	5	2.2		0	0			0	0	Clear	
Pioche, Nevada	24.03	610.4	29.80	756.9	54	12.2	21	NW	4	1.8		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.28	743.7	30.06	763.5	69	20.6	56	W	2	0.9		2k	0	Calm		0	0	Clear	
Port Huron, Michigan	29.38	746.2	30.02	762.5	71	21.7	71	SW	4	1.8		5c	0	Calm		0	0	Fair	
Portland, Maine	29.72	754.9	29.77	756.1	67	19.4	79	SW	6	2.7			10s		Calm	Inap.	Inap.	Cloudy	
Portland, Oregon	30.06	763.5	30.13	765.3	52	11.1	93	Calm	0	0		10k	0	NW		0.01	0.3	Cloudy	
Portsmouth, North Carolina					71	21.7	90	NW	8	3.6		2cs	0	Calm		0	0	Clear	
Prescott, Arizona	24.78	629.4	30.14	765.5	66	18.9	54	S	1	0.4		0	0			0.04	1.0	Clear	
Punta Rassa, Florida	29.96	761.0	29.98	761.5	74	23.3	90	E	7	3.1			10s		Calm	Inap.	Inap.	Threatening	
Red Bluff, California	29.52	749.8	29.87	758.7	60.5	15.8	50	NW	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.85	758.2	30.06	763.5	76	24.4	86	SE	4	1.8		2cs	8s	Calm	Calm	0	0	Fair	
Rochester, New York	29.33	745.0	29.91	759.7	71	21.7	71	NW	13	5.8		3c;k	0	NW;N		0	0	Clear	
Roseburg, Oregon	29.54	750.3	30.12	765.0	42.5	5.8	96	Calm	0	0		1c	0	Calm		0	0	Clear	
Sacramento, California	29.78	756.4	29.85	758.2	55	12.8	68	SE	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.58	751.3	30.13	765.3	71	21.7	85	S	1	0.4		0	Sm'e			0	0	Dense smoke	
St. Paul, Minnesota	29.18	741.1	29.97	761.2	71	21.7	71	S	4	1.8		5ck	0	SW		0	0	Fair	
Salt Lake City, Utah	25.62	650.7	29.95	760.7	57	13.9	31	NE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.32	744.7	30.00	762.0	71	21.7	80	NE	3	1.3		0	5ks		S	0	0	Fair	
San Diego, California	29.89	759.2	29.96	761.0	61	16.1	82	SW	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.42	747.3	30.06	763.5	72	22.2	62	SW	11	4.9		2ck	0	W		0	0	Fair	
Sandy Hook, New Jersey	29.90	759.4	29.94	760.5	72	22.2	71	W	14	6.3		5ck	Haze	NW	Calm	0	0	Fair	
San Francisco, California	29.85	758.2	29.91	759.7	51	10.6	86	SW	4	1.8		0	0			0	0	Clear	
Santa Fé, New Mexico	23.31	592.1	29.85	758.2	55	12.8	69	E	1	0.4			10ks		Calm	0.02	0.5	Cloudy	
Savannah, Georgia	30.01	762.2	30.10	764.5	75	23.9	72	NE	9	4.0		8cs	Haze	SE	Calm	0	0	Fair	
Shreveport, Louisiana	29.85	758.2	30.06	763.5	70	21.1	75	Calm	0	0		0	0			0	0	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.11	764.8	30.15	765.8	72	22.2	80	Calm	0	0		8k	Haze	Calm	Calm	0	0	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.49	749.0	30.14	765.5	73	22.8	67	N	3	1.3		0	0			0	0	Clear	
Springfield, Massachusetts	29.75	755.6	29.87	758.7	72	22.2	76	S	2	0.9		5cs	0	SW		0.01	0.3	Fair	
Stockton, Texas	26.96	684.8	29.96	761.0	69	20.6	61	SW	5	2.2		0	0			0	0	Clear	
Thatcher's Island, Mass	29.76	755.9	29.81	757.2	64	17.8	94	SW	8	3.6			10s		SW	0.01	0.3	Cloudy	
Toledo, Ohio	29.41	747.0	30.07	763.8	72	22.2	54	NW	8	3.6		2k	0	W		0	0	Clear	
Tucson, Arizona	27.45	697.2	30.00	762.0	81	27.2	55	E	4	1.8		0	5s		Calm	0	0	Fair	
Umatilla, Oregon	29.71	754.6	30.20	767.1	55.5	13.1	56	NW	5	2.2			10s		NW	0	0	Cloudy	
Uvalde, Texas	29.07	738.4	29.86	758.4	73	22.8	85	E	2	0.9		5cs	0	NW		0	0	Fair	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	73	22.8	59	NE	5	2.2		0	0			0	0	Clear	
Virginia City, Montana	24.25	615.9	29.73	755.1	40	4.4	48	W	1	0.4		1cs	0	W		0	0	Clear	
Visalia, California	29.47	748.5	29.84	757.9	54	12.2	61	E	2	0.9		0	0			0	0	Clear	
Washington, D. C.	29.94	760.5	30.05	763.3	74	23.3	59	NW	8	3.6		1cs	0	NW		0	0	Clear	
Wickenburg, Arizona					69	20.6	61	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.06	763.5	30.14	765.5	69	20.6	80	N	2	0.9		8ck	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	40	4.4	31	NE	10	4.5		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.80	756.9	29.84	757.9	69	20.6	75	W	11	4.9		5c	0	NW		Inap.	Inap.	Fair	
Yankton, Dakota	28.68	728.5	29.90	759.4	76	24.4	56	SW	21	9.4		5c	0	Calm		0	0	Fair	
Yuma, Arizona	29.63	752.6	29.77	756.1	73	22.8	59	SW	4	1.8		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.01	559.0			56.0	13.3	78	Calm	0	0		2k	2ks			0	0	Fair	Thomas Herran.
§ Havana, Cuba, W. I.	29.97	761.2	30.02	762.5	79	26.1	74	Calm	0	0		10cs	4ks	Calm	Calm	0	0	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	29.99	761.7	30.00	762.0	77.4	25.2	77	Calm	0	0		2ck	0	E		0	0	Clear	Maxwell Hall.
Navassa, W. I.	29.91	759.7	29.99	761.7	80.5	26.9	83	NE	6	2.7		0	5s		NE	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	79	26.1	87	E			2	0	3c			0.340	8.64	½ cloudy	C. J. Hering.
Puerto Berrio, U.S. Col'bia ‖	29.42	747.3	29.97	761.2	82	27.8	85	Calm			0		8ks;s			0.36	9.1		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		S					8k		S	0	0	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.00	762.0	30.03	762.7	80	26.7	74	Calm	0	0		0	2ks			0	0		Robert Mason.
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	30.09	764.3	30.14	765.5	47.0	8.3	96	N	11	4.9		1c	0	NW		0	0	Fair	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.13	765.3	72	22.2	67	SE	10	4.5			8		SE					Fair	
§Navy Yard, Portsmouth, N. H.	30.02	762.5	65	18.3	84	NW	2	0.9			8			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	30.06	763.5	63.4	17.4	92	ENE			1	7ckl		W		0.14	3.6			Clearing	
§Adams, Payta, Peru	30.02	762.5	67	19.4	89	ESE			1		10		ESE					Cloudy	
§Alaska, Callao, Peru *	29.95	760.7	62	16.7	94	Calm			0		10					Long	SW	Cloudy	
§Alert, N. 35° 01′, E. 139° 41′	29.99	761.7	67	19.4	80	NNE			4		8		E			Smooth		Cloudy	
§Alliance, St Pierre, Newfoundland	29.99	761.7	51	10.6	100	W			1		10		Calm	0	0	Smooth		Foggy	
§Ashuelot, N. 31° 22′, E. 123° 58′	30.00	762.0	68	20.0	74	ENE			2		2		NE	0	0	Mod'ate	ENE	Clear	
§Colorado, New York, N. Y.	29.92	760 0	72	22.2	67	SW	6	2.7			5							Fair	
§Constellation, N. 37° 00′, W. 76° 04′	29.97	761.2	78	25.6	50	WSW			4		0					Smooth		Clear	
§Constitution, Off Ellis Isl'd., N. Y.	29.92	760.0	71	21.7	75	WSW	8	3.6			8		WSW					Hazy	
§Franklin, Off Navy Yard, Norfolk, Va	30.06	763.5	69	20.6	61	WSW	4.8	2.1			0			0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal.	29.99	761.7	60	15.6	71	SW	2.4	1.1			0			0	0			Clear	
§Jamestown, Sitka, Alaska *	29.89	759.2	49	9.4	93	SE			1		10					Smooth		Rain & fog	
§Kearsarge, Boston, Mass	29.83	757.7	72	22.2	76	WSW			2		8		SW			Smooth		Cloudy	
§Lackawana, San Domingo, Costa Rica†	30.03	762.7	77	25.0	95	Calm			0		10		S					Cloudy	
§Marion, S 47° 07′, W. 56° 35′	29.80	756.9	45	7.2	100	WNW			3		10			0	0	Smooth	NW	Foggy	
§Michigan, Erie, Pa	29.99	761.7	70	21.1	85	W			2		5?		W					Cloudy	
§Minnesota, Newburgh, N. Y *	29.93	760.2	72	22.2	76	SW			2		2		Calm					Fair	
§Monocacy, Chefoo, China	29.94	760.5	94	34.4	70	E			2		5							Fair	
§New Hampshire, Port Royal, S. C.	30.09	764.3	72	22.2	85	NNE	12	5.4			9		Calm	0	0			Hazy	
§Onward, Chimbote, Peru †	29.99	761.7	64	17.8	83	ESE			2		8		NW			Long	W	Cloudy	
§Palos, Shanghai, China	29.97	761.2	69	20.6	85	ESE			1		5?		SE					Cloudy?	
§Passaic, Washington, D. C.	30.05	763.3	72	22.2	60	W			1		0			0	0			Clear	
§Pensacola, N. 44° 59′, W. 124° 55′	30.06	763.5	53	11.7	93	NW			3		10		NW			Smooth	NW	Cloudy	
§Portsmouth, N. 36° 20′, W. 31° 16′	30.15	765.8	71	21.7	85	WSW			4		5		WNW			Rough	NW	Fair	
§Powhatan, New York, N. Y.	29.96	761.0	71	21.7	75	W			2		2		W					Cloudy?	
§Quinnebaug, N. 59° 16′, E. 18° 11′	29.78	755.1	65	18.3		NE			4		5		Calm			Smooth		Fair	
§Richmond, Kobe, Japan	30.02	762.5	74	23.3	68	S			1		8		S					Rainy	
Rio Bravo, Brownsville, Texas †	30.11	764.8	74	23.3	100	E	2	0.9			5?		SE	0	0			Cloudy	
§Saratoga, N. 38° 56′, E 9° 33′	29.90	759.4	75	23.9	52	WSW			6		2		W	0	0	Smooth		Hazy	
§Shenandoah, Buenos Ayres, Argentine Republic	29.98	761.5	59	15.0	76	N			6		0					Mod'ate	N	Clear	
§St. Louis, League Island, Pa	29.99	761.7	70	21.1	75	WSW	7	3.1			5		SW	0	0			Fair	
Swatara, Hong-Kong, China †	29.80	756.9	81	27.2	87	SW			1		10		Calm			Smooth		Cloudy	
§Tennessee, New York, N. Y.	29.95	760.7	73	22.8	63	W			1		10		Calm					Hazy	
§Ticonderoga, Nagasaki, Japan	29.94	760.5	73	22.8	95	N			1		10		Calm			Smooth		Cloudy	
§Trenton, N. 37° 33′, W. 11° 47′	30.10	764.5	67	19.4	74	W			3		5			0	0	Long	W	Cloudy	
§Wabash, Boston, Mass	29.82	757.4	66	18.9	79	WSW	4	1.8			2			0.01	0.3			Fair	
§Wachusett, Valparaiso, Chili	30.05	763.3	55	12.8	??	NW			3		10		W	Light	Light	Mod'ate	N	Rainy	
Wyoming, N. 36° 45′, W. 4° 00′	29.98	761.5	65	18.3	75	WNW			5–6		2		SW			Mod'ate	SW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer.																			
S. S. Moravian, J. Graham.																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air.																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 51° 11', W. 16° 17'	29.55	750.6	60	15.6	88	SW			2		7		SSW	Mod'ate	Mod'ate	Mod'ate	W	Fair	
S. S. Ohio, Henry Morrison N. 39° 20', W. 64° 42'.....†	30.07	763.8	76	24.4	100	SW			2		1		SW	0	0	Small	ESE	Very fine	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger, N. 28° 29', W. 115° 31'....†	29.94	761.0	60	15.6	88	NW			2		10		NW	0	0	Gentle	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains N. 42° 17', W. 43° 56'	30.02	762.5	74	23.3	76	N			1		8			0	0	Smooth	N	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 48° 18', W. 24° 42'	29.73	755.1	73	22.8	46	WNW			4		2		NW	1 h'r	1 h'r	Mod'ate	NW	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
‡S. S. Belgic, L. Meyer, N. 39° 40', W. 130° 26'.....†	30.23	767.8	53	11.7	86	NNW			6		10		NNW			Mod'ate	NNW	Overcast	D. A. Joyce.
‡S. S. Gaelic, W. H. Kidley, Hong Kong, China.....†	29.70	754.4	81	27.2	96	Var.			2		ks			Heavy	Heavy	Smooth	SW	D. clouds	J. A. Thompson.
‡S. S. Oceanic, J. Metcalfe N. 37° 53', W. 131° 38'.....*	30.24	768.1	56	13.3	87	NNW			6		9		NNW	0	0	Mod'ate	WNW	Overcast	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lach'an.																			
S. S. Oregon, E. Polemann, Portland, Oregon.....†	30.08	764.0	51.0	10.6		ENE			1		5s		WSW					Fair	J. M. Lachlan. L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander San Francisco, Cal....†	29.94	760.5	49	9.4		SSW			2		Haze							Hazy	
S. S. Orizaba, C. B. Johnson, N. 33° 40', W. 118° 06'...†	29.94	760.5	58	14.4		WNW			1		8		NW	0	0	Mod'ate	SW	Fair	Harrison & Marshall.
S. S. State of California, G. Doliney, N. 40° 06', W. 124° 34'....†	29.93	760.2	50	10.0		NNW			5		5		NW			Rough	W	Fair	
S. S. Victoria, H. M. Haywood, N. 48° 24', W. 124° 54'....†	30.12	765.0	49	9.4	85	NE			2		10		NW			Smooth		Misty	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.
REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 10° 58′, W. 86° 36′.....†	29.86	758.4	80	26.7	91	ENE			2		8		E			Mod'ate	SE	Cloudy	F. A. Johnston.
§ S. S. Australia, S. 35° 00′. E. 175° 36′.....†	29.76	755.9				ENE			3		8					Smooth		Cloudy	Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30.03	762.7	52	11.1	86	SSE			2		10		SE					Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, Mazatlan, Mexico.....†	30.01	762.2	82	27.8	87	SE			0–1		2		W	0	0	Smooth	W	Clear	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 39° 34′, E. 149° 41′.....†	30.10	764.5	52	11.1	61	NE			3		5		NE	0	0	Mod'ate	NE	Fair	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, N. 7° 10′. W. 81° 00′.....†	29.92	760.0	80	26.7	100	NNE			2		10		Calm	0.01	0.3	Small	SSE	Sprinkling	
§ S. S. Dakota, H. G. Morse, N. 41° 57′, W. 124° 41′...†	29.99	761 7	54	12.2	87	NNW			4		2		N	0	0	Heavy	NW	Clear.	
§ S. S. Granada, J M Cavardy																			C. T. Rode.
§ S. S. Idaho, E. Alexander, N. 47° 10′ W. 124° 47′...†	30.14	765.5	60	15.6		NW			1		0			0	0	Smooth		Fair	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, S. 8° 55′. W. 168° 30′.....	29.80	758.4	82	27.8		Var.			2		10		S			Long	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 41° 06′, W. 47° 36′.....†	30.18	766.6	65	18.3		SW			2		8		S	0	0			Cloudy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry.																			J. Jones.
S. S. Celtic, B. Gleadell, N. 45° 34′, W. 32° 00′.....†	29.89	756.9	55	12.8		NW			5		10		NW	Drizzling 1 h'r	1 h'r	Mod'ate	WNW	Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.01	762.2	77	25.0		NE			1		8		E; W	0	0			Threatening	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.	29.81	757.2	76	24.4	91	W					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 32° 45′, W. 72° 46′ ...†	30.09	764.3	79	26.1		NE			1		2		E	0	0	Long	SE	Clear.	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 10° 00′, W. 27° 25′.....*†	30.06	763.5	81	27.2		NNE			1		8		NNE			Smooth	NNE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 54° 10′, W 51° 20′.....†	30.06	763.5				SE			3		10		E			Long	E	Foggy	S. S. Miner.
Brigantine George, W. H Champlin, N. 40° 03′, W. 70° 56′.....†	30.10?	764.5?	69	20.6		SW			3		2			0	0	Smooth		Clear	
Iron Cross, W. Randall, N. 27° 90′, W. 79° 38′.....*	30.02	762.5	83	28.3	79	ESE			4		4		ESE	Mod'ate	Mod'ate		NNE	D. clouds	W. Randall.
British Barque Ivigtut, Adam Smith. N. 39° 12′, W. 73° 08′....*	29.95	760.7				WSW			3–4		2					Smooth		Clear.	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.90	759.4	59	15.0	94	WSW			5		2		E	0	0			Fair	James S. Garvin.

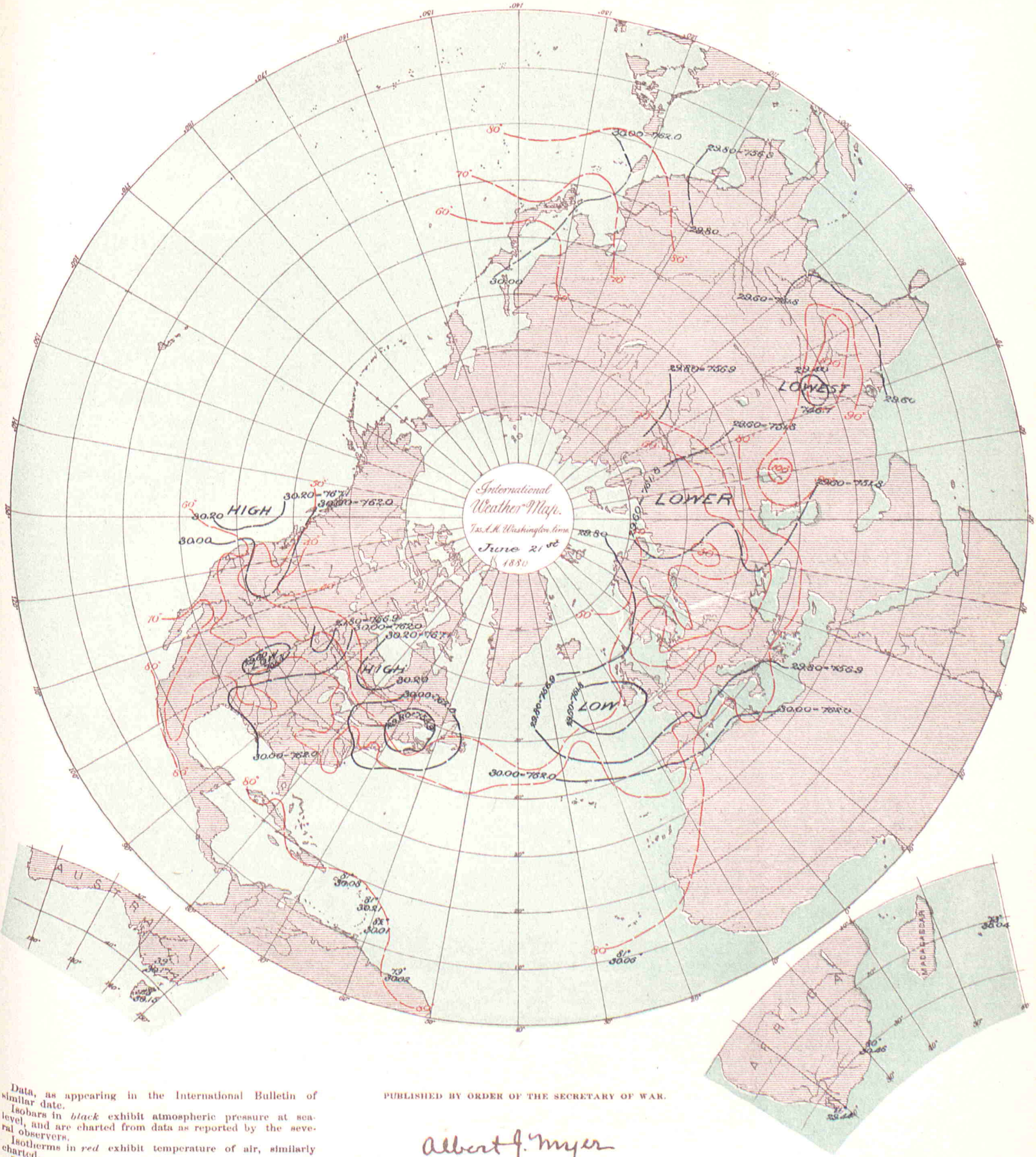
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 22, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco			30.08	764.0	80.1	26.7	62	NNW											Dr. Ollive.
Nemours			30.03	762.7	82.8	28.2	54	NW			1		0			0	0	Clear	Metge.
Algiers			30.03	762.7	82.8	28.2	54	NW			6		0			0	0	Clear.	Nicolas.
La Calle			30.07	763.7	77.9	25.5	73	NW			1		0			0	0	Clear.	Fonfrède.
Tunis			30.04	763.0															Jacques
Sfax			30.12	765.1															Gau.
Saida			30.07	763.7															Charon.
Tebessa			30.04	762.9	89.1	31.7	20	NW			2		0			0	0	Clear	Watrin.
Geriville			30.05	763 3	95.0	35.0	62	ESE			4		0			0	0	Clear	Lonchamp.
Laghouat			30.03	762.8	94.6	34.8	19	S			3		0			0	0	Clear	Herlin.
Biskra			30.02	762.6	97.2	36.2	27	WNW			1		0			0	0	Clear.	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 590? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.21	742.0	29.74	755.5	65.1	18.4	88	S			2		10			0.886	22.5	Raining	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.00	736.6	29.73	755.2	73.4	23.0	43	NNE	3.8	1.7			0			0	0		Dr. Wierzbicki.
Eperies	28.85	732.9	29.69	754.1	74.8	23.8	38	N			2		4cs;s		S	0	0		Julius Mikolik.
Gratz	28.56	725.4	29.77	756.2	64.0	17.8	69	NW			4		10			0.138	3.5		Andreas Rospini.
Hermannstadt	28.35	720.1	29.72	755.0	68.0	20.0	58	SW			3		6			0.016	0.40		Prof. A. Gottschling.
Kremsmünster, Observatory	28.52	724.5	29.85	758.1	57.4	14.1	73	WNW			3		10			0.217	5.5		The Staff.
Lemberg	28.76	730.4	29.70	754.3	71.8	22.1	51	S			2		3			0	0		Dr. T. Stanecki.
Pola	29.67	753.5	29.77	756.2	76.3	24.6	62	WNW			2		6			0	0		I.R. Hydrographic Office.
Szathmar	29.34	745.1	29.78	756.4	71.1	21.7	56	SW			3		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.46	748.3	29.73	755.1	70.9	21.6	60	NE			2		3			0	0		Karl Stancel.
Trieste	29.69	754.0	29.79	756.6	69.8	21.0	86	NW			1		10			0.146	3.7	Raining	P. Busin.
Vienna	29.09	738.9	29.81	757.2	65.1	18.4	64	W			6		3			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.56	750.7	29.75	755.6	63.1	17.3	72	WSW			1		8		SW	0.126	3.20		Royal Observatory.
Furnes																0.118	3.0	Raining	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 23, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.70	754.4	29.80	756.9	55.6	13.1		ESE	5	2.2			4			0.020	0.51	Foggy	W. Boswell.
Ardrossan	29.73	755.1	29.75	755.6	65	18.3		NW			1		0					Misty	G. Carrick.
Armagh, (Observatory)	29.53	750.0	29.76	755.9	66.0	18.9		S	7	3.1			8					D. clouds	S. Call.
Bidston (Liverpool Obs)			29.76	755.9	64.8	18.2		W	12	5.4			4					D. clouds	John Hartnup.
Bolton (Sharples)	29.22	742.2	29.72	754.9	60.8	16.0		SSW	9	4.0			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.39	746.5	29.79	756.7	67.9	19.9	56	SW			2		8			0.17	4.3	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.02	762.5	83.5	28.6		NE			2		5					D. clouds	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.63	752.6	29.73	755.1	69.0	20.6		ESE			1		10					Overcast	H. Todd.
Cardington			29.73	755.1	71.0	21.7		W			0.4		9					Overcast	John McLaren.
Chatham (School M. E.)	29.64	752.8	29.77	756.1	56.1	13.4		Calm			0		10n					Raining	Lance Crp'l Hocker, R.E.
Donaghadee	29.74	755.4	29.78	756.4	62	16.7		E			3		3					D. clouds	J. Mac Gowan.
Dover	29.71	754.6	29.74	755.4	58	14.4		ENE			1		9					Raining	J. Costello.
Falmouth (Observatory)	29.63	752.6	29.85	758.2	67.4	19.7		WSW			3		5					D. clouds	The Staff.
Fort Napier, Natal	28.15	715.0	30.38	771.6	65.0	18.3		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.71	754.6	29.94	760.5	82	27.8		NW			1		8					D. clouds	
Galway (Queen's College)			29.71	754.6	61.5	16.4		WSW			1		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.00	762.0	30.05	763.3	70.6	21.4		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.54	750.3	29.74	755.4	69.5	20.8		NW			1		0					Blue sky	D. G. Maclean.
Great Yarmouth	29.75	755.6	29.76	755.9	59	15.0		ENE			2		4					Foggy	G. T. Watson.
Greenwich (Royal Obs'y)	29.59	751.6	29.76	755.9	58.5	14.7		S			1		10					Raining	The Staff, for G. B. Airy.
Guernsey	29.63	752.6	29.85	758.2	61	16.1		WNW			4		5					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.03	762.7	30.15	765.8	65	18.3		SW			4	c				0.05	1.3	Very fine	M. P. Moyle.
Holyhead	29.77	756.1	29.78	756.4	64	17.8		WSW			2		1					Blue sky	John Tilston.
Jersey	29.60	751.8	29.89	759.2	60.6	15.9		W			5		4					D. clouds	J. Fisher.
Kew (Observatory)	29.74	755.4	29.77	756.1	59.2	15.1		W	6	2.7			10					Misty	The Met'g'l Office.
Leicester (Museum)	29.48	748.8	29.72	754.9	63.5	17.5		SW			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.88	758.9	29.95	760.7	78	25.6		NW			2		0					Blue sky	A. King.
Nairn	29.68	753.9	29.77	756.1	64	17.8		Calm			0		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.01	762.2	82.0	27.8		SE			1		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.55	750.6	29.74	755.4	71.9	22.2		S			2		10k; ks; d]	NNE		0.977	24.82	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.22	742.2	29.72	754.9	66.6	19.2		WSW			2		9					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.55	750.6	29.80	756.9	55	12.8		N			1		10					Threatening	The Staff, for E. J. Stone, Esq
Plymouth	29.75	755.6	29.82	757.4	65.0	18.3		SW			4		8					D. clouds	John Merrifield.
*Roche's Point	29.71	754.6	29.83	757.7	70	21.1		SSW			3		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.65	753.1	29.81	757.2	62	16.7		W			2		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.82	757.4	60.2	15.7		ESE	10	4.5			10					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.64	752.8	29.70	754.4	71.6	22.0		NNE			2		8			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	29.48	748.8	29.76	755.9	71.2	21.8		Calm			0		10			0.66	16.8	Overcast	W. F. Cooper.
Silloth Rectory	29.71	754.6	29.74	755.4	70.6	21.4	59	W			1		8			0.304	7.72	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.76	755.9	69.0	20.6		WSW	3	1.3			10					Thunder-storm	Rev. S. J. Perry.
Stratfield Turgiss	29.56	750.8	29.78	756.4	57.7	14.3		SW			1		10					Raining	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.84	757.9	29.85	758.2	68	20.0		W			4		5					D. clouds	W. Newcombe.
Valencia (Observatory)	29.72	754.9	29.75	755.6	62.4	16.9		SSW	19	8.5			10					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.21	767.3	30.25	768.3	78.6	25.9	34	NNW	3.4	1.5		0	0			0	0	Clear.	The Staff, for D. Gill.
Hobart Town, Tasmania			30.33	770.4	49.0	9.4	81	NW			1		k			0.02	0.5		Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.80	756.9	56.0	13.3		E			1		10s			0.02	0.5	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.84	757.9	30.03	762.8	75.0	23.9	74	NNW	10.5	4.7		0	6		WNW	0.01	0.3	Cloudy	C. Meldrum.
Melbourne (Observatory)	30.02	762.5	30.11	764.8	43.8	6.6	78	NE	3	1.3			3			0	0	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.78	756.4	61	16.1		SSE			4	3	0	NW		0.4	10.		J. Youngclause.
North Unst, Shetland I's			29.84	757.9				E			4	4	2	E		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction frbm—		
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia, N. 45° 40′, W. 45° 10′	8	NNE; SSE	Overcast	Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 29° 40′, W. 79° 35′	3	E	Misty	Capt. W. Randall.
Ship Lochee, S. 31° 50′, E. 30° 15′			Blue sky	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N 47° 55′, W. 18° 31′			Showery	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 37° 15′, E. 8° 10′			Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.21	665.7	29.93	760.2	66.6	19.2	90	NE			1	9cs				0.31	8.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.75	755.7	29.80	756.9	69.1	20.6	45	SE			2		0						
Fanöe	29.72	754.9	29.74	755.4	71.1	21.7	45	SSE			2		1						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.94	760.4	29.98	761.5	54.0	12.2	84	SE			2		8						
Thorshavn (Faröe)	29.91	759.6	29.94	760.5	53.6	12.0	80	NE			3		10						
Vestervig	29.67	753.7	29.77	756.1	71.2	21.8	51	ENE			4		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.35	745.5	29.90	759.5	63.5	17.5	80	SW			1		8kn		SW	0.322	8.2	Very cloudy	Collignon, Director.
Amiens, Normal School	29.74	755.4	29.85	758.2	67.3	19.6	68	ESE			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.47	748.4	29.72	754.8	55.2	12.9	95	W			2		9n	E		0.252	6.40		Klein, Commandant.
Avignon, Normal School	29.90	759.4	29.98	761.4	75.9	24.4	44	NW			2		2		NW	0.04	1.	Partly cld'y	Giraud, Director.
Bar-sur-Seine	29.33	744.9	29.87	758.7	64.6	18.1	55	WSW			1		8kn		W	0.406	10.3	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.54	750.2	29.80	756.8	64.2	17.9	61	W			1		8	SW	W	0.157	4.0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.36	735.6	29.83	757.7	62.2	16.8	76	S			1		8		SW	0.59	15.	Very cloudy	A. Carré, Director.
Bordeaux	29.83	757.7	30.03	762.7	67.6	19.8	55	W			2		8		W	0.024	0.6	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.11	739.5	30.04	763.0	70.5	21.4	53	S			1		5cn	S	S	0.102	2.6	Cloudy	Marlot, Director.
Bourges, Normal School	29.42	747.2	29.98	761.6	64.0	17.8	81	WSW			4		kn		WSW	0.085	2.15		M. Gence, Director.
Brest, Naval Observatory	29.67	753.7	29.92	759.9	66.6	19.2	79	WSW			2		7		W	0	0		Ch. de Rermaree, Dir
Caen, Normal School	29.81	757.2	29.89	759.1	61.9	16.6	89	W			1		10			0.268	6.8	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.61	752.0	30.00	762.0	73.4	23	56	W			1		2		NW	0.346	8.8	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.53	750.1	29.84	757.9	68.5	20.3	57	SW			3		5		SW	0.047	1.2	Cloudy	Jadot, Director
Chartres, Normal School	29.26	743.3	29.82	757.4	64.9	18.3	72	SSW			1		6		S	0.610	15.5		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.60	726.5	29.92	759.9	67.6	19.8	50	SW			2		8		S	0.193	4.9		Alluard, Director.
Commercy, Normal School	29.00	736.6	29.84	757.8	63.0	17.2	67	W			4		kn	W	W	0.126	3.2		Dr. Coullet, Director.
Commune de Gréasque*	28.87	733.4	30.02	762.4	72.7	22.6	34	NW			4		5		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.17	741.0	29.91	759.8	70.5	21.4	53	WNW			2		kn			0.28	7.		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.80	756.9	30.02	762.4	63.0	17.2	76	W			1		5	NE	E	0.606	15.4	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.59	751.5	29.89	759.1	65.3	18.5	69	WNW			3		5	SSW	WSW	0.425	10.8	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.04	737.6	29.93	760.3	65.3	18.5	69	S			2		5k		S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.85	758.2	29.95	760.8	65.8	18.8	70	WSW			4		8		W	0.012	0.30	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.35	745.5	29.96	760.9	72.3	22.4	45	W			1		k		SW	0.161	4.1		Ch. André, Director.
Mâcon, Normal School																			Gaizin, Director.
Marseilles, Observatory	29.68	753.8	29.94	760.5	74.3	23.5	35	WNW			3–4		1		NW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.79	731.2	29.89	757.0	64.0	17.8	71	SSW			3		5		SSW	0.16	4.		Barbier, Director.
Mont-Louis	24.87	631.6	30.10	764.6	54.0	12.2	63	SE	7.4	3.3			7		E	0	0		M. Cave, for Dr. Fines.
Nice	29.77	756.1	29.80	756.9	73.4	23.0	61	E			4			E	E	0	0	Misty	Capt. Boissière, Director.
Nismes, Normal School	29.78	756.4	29.98	761.5	75.4	24.1	48	N			1		2		N	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.93	760.2	30.03	762.8	71.1	21.7	45	N	5.6	2.5			8		W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.58	573.4			43.3	6.3							10		SW	0.020	13.2	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.93	734.9	29.96	760.9	74.3	23.5	34	N			1		5	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.12	638.0			43.7	6.5	93	W			1		8		W	0.484	12.3		Alluard, Director.
Rochefort, Naval Obs'y	30.00	762.1	30.04	762.9	67.6	19.8	76	W			4		5	W	W	0	0	½ covered	Lt. E. Derante, Director
Rouen, Normal School	29.71	754.7	29.80	756.9	62.6	17.0	62	SW			1		10		W	0.283	7.2	Covered	Platrier, Director.
Saint Malo (Port) Obs'y	29.85	758.2	29.88	759.0	64.0	17.8	74	WNW			3		1	WNW	WNW	0.157	4.00	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.68	753.8	29.84	758.0	62.1	16.7	76	W			1		10	W	WSW	0.472	12.0	Covered	E. Renou, Director.
Tarbes, Normal School	28.93	734.9	30.00	762.1	59.0	15	68	NW			1								T. Huguet, Director
Toulouse, Observatory	29.39	746.6	30.12	765.0	68.4	20.2	43	WNW			4		5	WNW		0	0	Cloudy	B. Baillaud, Dir.
Tours	29.71	754.7	29.91	759.7	66.2	19.0	63	W			2		8		WNW	0.165	4.2	¾ covered	M. de Tastes.
Versailles, Observatory	29.36	745.7	29.85	758.2	58.6	14.8	84	WNW			2					0.255	6.47		Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.27	743.4	29.95	760.8	70.5	21.4	46	WSW			1		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.21	767.3	30.24	768.0	80.6	27										0.94	24.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.57	751.0			57.9	14.4	86	WNW			1		10		WSW	0.571	14.5	Raining	Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.93	760.3	29.96	761.0	69.3	20.7	88	E	7.4	3.3		10ck				0	0	Covered	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.97	735.9	29.83	757.7	65.7	18.7	76	W			4		7k	WSW		0.386	9.8		Prof. Dr. Hoh.
Berlin	29.52	749.9	29.69	754.1	80.4	26.9	35	E			2		6			0	0		Prof. Dr. Arndt.
Breslau	29.23	742.4	29.75	755.7	76.6	24.8	32	ESE			1		1			0	0		Royal University Obs'y
Carlsruhe	29.41	747.0	29.82	757.5	66.2	19.0	71	SW			1		10	SW		0.087	2.2	Raining	Albert Senz.
Cassel	29.16	740.7	29.76	756.4	65.8	18.8	84	NW			2		10	SW		0.130	3.30		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.51	749.5	29.87	758.7	72.7	22.6	43	SW			2		8			0.244	6.2		Physical Society.
Friedrichshafen	28.49	723.6	29.89	759.1	64.8	18.2	64	SW			4		5	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.65	753.2	29.72	755.0	73.9	23.3	30	SE			3		3			0	0		Dr. Reinhold Kleeman.
Kiel	29.71	754.6	29.72	755.0	71.2	21.8	43	E			2		2			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.75	755.7	29.84	757.8	66.4	19.1	44	NW			2		0			0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.36	745.7	29.77	756.1	66.2	19.0	74	SSW			2		10			0	0		Prof. Dr. Bruhns, Privy Counsel'r
Magdeburg	29.50	749.3	29.72	755.0	75.0	23.9	51	SE			3		9ks	SSE		0.161	4.6		Dr. Assmann.
Memel	29.79	756.6	29.84	757.8	59.2	15.1	78	NW			4		0						Reinbrecht & Issermann
Munich	28.09	713.4	29.94	760.5	63.7	17.6	50	W			2		10	W		0.244	6.2	Raining	Dr. C. Lang.
Neufahrwasser	29.84	757.8	29.85	758.2	60.4	15.8	61	ENE			2		0			0	0		A. Lothes.
Neustadt (Palatinate)	29.29	744.0	29.81	757.2	68.7	20.4	54	SW			2		9			0.083	2.1		Reallehrer Dicknether.
Posen	29.48	748.8	29.76	755.8	73.9	23.3	36	E			4		0			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.34	745.2	29.87	758.6	72.3	22.4	49	SW			3		8	SW		0.216	5.49	Raining	Imp. University Observatory.
Stuttgart	28.91	734.2	29.77	756.1	66.0	20.0	52	NW					8	W		0.094	2.4	Raining	Prof. Dr. Schoder.
Thorn	29.60	751.9	29.79	756.6	72.3	22.4	33	NE			2		0			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.40	721.4	29.97	761.3	63.1	17.3	68	W	2.7	1.2			0		W	0.213	5.4		Reallehrer J. Hopfner.
Wustrow	29.74	755.3	29.76	756.0	73.8	23.2	37	ENE			3		5ks			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.36	745.7	29.73	755.1	87.1	30.6		SW			3.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.52	749.8	29.57	751.0	85.8	29.9	72	SSW	42.0	18.8			5		W	0	0	Misty	
Deesa	29.08	738.7	29.54	750.2	97.1	36.2	30	SW	22.3	10.0			3			0	0	Misty	
Bombay	29.70	754.3	29.74	755.3	86.7	30.4	72	W	12.0	5.4			5		NW	0.11	2.8	D. clouds	
Poona (Yarrowda)	27.90	708.6	29.74	755.5	79.5	26.4	61	W	19.0	8.5			4		W	0	0	D. clouds	
Belgaum	27.27	692.6	29.82	757.3	73.4	23.0	76	W	14.0	6.3			9	W	W	0	0	D. clouds	
Lahore	28.68	728.4	29.38	746.2	105.3	40.7	30	Calm	3.2	1.4			0			0	0	Misty	
Roorkee	28.57	725.6	29.42	747.2	100.9	38.3	38	SW	3.0	1.3			4			0	0		
Agra	28.93	734.9	29.47	748.5	101.6	38.7	33	W	5.8	2.6			5		W	0	0		
Nagpur	28.57	725.6	29.59	751.5	87.7	30.9	53	NW	8.3	3.7			9		NW	0.01	0.3	Gloomy	
Jubbulpore	28.20	716.2	29.51	749.6	94.7	34.8	36	E	5.8	2.6			10			0	0	Overcast	
Lucknow	29.16	740.7	29.53	750.1	80.2	26.8	89	ENE	3.8	1.7			10	Calm		1.25	31.8	Overcast	
Allahabad	29.24	742.7	29.55	750.6	80.7	27.1	87	NE	2.7	1.2			10			0.81	20.6	Overcast	
Patna	29.33	744.9	29.50	749.4	89.7	32.1	71	WNW	2.8	1.2			10	WNW	WNW			Thunder-storm	
Hazaribagh	27.57	700.4	29.58	751.3	76.3	24.6	88	WNW	7.2	3.2			10		NW	0.17	4.3	Thunder-storm	
Cuttack	29.50	749.3	29.58	751.4	85.0	29.4	78	WNW	1.6	0.7			10			0.41	10.4	Overcast	
Calcutta (Alipore)	29.54	750.2	29.56	750.8	81.9	27.7	92	Calm	0	0			8	S		0.09	2.3	D. clouds	
Goalpara	29.18	741.1	29.58	751.3	86.5	30.3	79	S	1.7	0.8			1			0.18	4.6	D. clouds	
Chittagong	29.53	750.0	29.62	752.3	79.9	26.6	88	Calm	4.8	2.2			7			0.18	4.6	D. clouds	
Sibsagar	29.25	742.9	29.58	751.2	86.1	30.1	78	NE	1.5	0.7			2			0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,361 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.40	746.7	29.80	756.8	66.7	19.3	62	NE	3.8	1.7			10			0.772	19.6		Prof. Giovanni Clodig.
Milan	29.25	742.9	29.74	755.4	77.4	25.2	43	SW	5.6	2.5			5	SE		0.039	1.0		Prof. Schiaparelli.
Padua	29.67	753.5	29.78	756.3	74.7	23.7	54	S	1.3	0.6			5	NE		0.516	13.1		Prof. Dott. Lorenzoni.
Moncalieri	28.88	733.6	29.76	755.9	76.3	24.6	35	E	1.8	0.8			1			0	0		Prof. P. F. Denza.
Genoa	29.64	752.9	29.83	757 7	70.2	21.2	69	SW	6.3	2.8			2	SE		0.020	0.5		Prof. G. M. Garibaldi.
Mondovi	27.91	709.0	29.76	755.9	73.4	23.0	31	N			2		0			0.012	0.3		Prof. D. C. Bruno.
Pesaro	29.75	755.6	29.80	756.8	71.8	22.1	60	NE	5.7	3.0			5	W		0	0		Prof. Luigi Guidi.
Florence	29.59	751.5	29.84	757.9	74.8	23.8	48	SW			4		2	SW		0	0		Cav. F. Meucci.
Leghorn	29.78	756.3	29.86	758.4	71.6	22.0	66	SW	13.0	5.8			6			0	0		Prof. P. Monte.
Rome	29.72	754.8	29.89	759.2	77.7	25.4	55	SW					4			0	0		Prof. P. Tacchini, Dir.
Lecce	29.60	751.7	29.84	757.9	78.6	25.9	37	WSW	5.6	2.5			4	NW		0	0		Prof. C. De Giorgi.
Cosenza	29.03	737.4	29.88	759.0	82.0	27.8	66	NW	4.9	2.2			4			0	0		Prof. D. Conti.
Cagliari	29.74	755.4	29.93	760.3	81.3	27.4	36	NW			4		3	W		0	0		Prof. A. Pacinotti.
Palermo	29.72	755.0	29.97	761.3	79.0	26.1	34	NW	11.9	5.3			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.82	757.5	29.87	758.6	80.4	26.9	44	NE	9.8	4.4			2	W		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.37	746.0	29.87	758 8	76.3	24.6	54	ESE	1.8	0.8			5			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					75.2	24.0	60	ESE	7.3	3.3			9ks;ck;s;cs]			0.127	3.23	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.83	757.7	30.03	762.7	73.3	22.9	70	ESE	1.3	0.6		ck	9s			0.610	15.49	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.21	767.3	30.28	769.1	61.1	16.2	92	ESE	1.8	0.8		1cs	0	W		0	0	Fair	The Staff.
Wakayama	30.10	764.5	30.15	765.8	70.7	21.5	74	S	0.6	0.3		ck	5s			0	0	Fair	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the am unt of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.6	30.02	762.6	58.1	14.5	77	Calm			0		10n		E	0.62	15.8	Raining	Prof. L. Perez.
Guanaxuato	23.64	600.6			59.0	15.0	91	SW	Inap.	Inap.		0	10n		Calm	0.04	1.2	Covered	Vicente Fernandez.
Leon	24.40	619.7	30.04	762.9	62.1	16.7	90	NW			1		10kn		NE	0.59	15.0	Raining	Prof. M. Leal.
Mazatlan	29.64	752.8	29.89	759.3	77.0	25.0	91	SE			4	2cs	5k		NW	0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.03	585.0	29.94	760.4	58.8	14.9	75	Calm	0	0			10k			0	0	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.87	606.2	29.82	757.3	61.5	16.4	82	N			1	5c	0	NE		0.62	15.7	½ clouded	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.43	595.1	30.17	766.2	55.0	12.8	46	Calm	0	0		2ck	0	S		0.79	20.0	Clear	Prof. P. Spina.
San Luis Potosi	24.14	613.1	30.02	762.6	62.6	17.0	54	SW			1		9		E	0.008	0.2	Very cloudy	G. Barroeta, M. D.
Tlacotalpam	29.87	758.6	29.88	758.9	80.2	26.8	95	S			2	3	0	SE		0	0	Clear	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.55	572.7	30.08	763.9	55.8	13.2	92	W			2		10n		W	0.87	22.0	Covered	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.76	755.8	29.76	755.8	64.9	18.3		SW			3					0.220	5.6		
Groningen	29.67	753.7	29.73	755.1	65.7	18.7		SW			1					0.094	2.4		
Helder	29.73	755.1	29.73	755.1	61.2	16.2		NNW			1					0	0		
Hellevoetsluis	29.74	755.4	29.74	755.4	63.7	17.6	81	W			1					0	0		
Utrecht	29.70	754.4	29.75	755.6	68.0	20.0	71	SSW			3		8			0.213	5.4	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.74	755.3	29.79	756.7	75.2	24.0	48	SSW	10.3	4.6			0			0	0		
Brönø	29.84	757.9	29.88	758.9	50.7	10.4	68	WNW	9	4			7			0	0		
Christiania	29.60	751.8	29.74	755.3	76.6	24.8	45	WSW	9	4			4			0	0		
Tromsö	29.71	754.5	29.76	755.9	43.3	6.3	56	NNW	9	4			10			0.130	3.3		

Note.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.04	763.0	30.25	768.3	69.8	21.0	85	W			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.10	739.1	30.07	763.8	73.4	23.0	37	N	0.7	0.3			1			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.12	765.0	30.21	767.2	71.1	21.7	73	Calm	0	0			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.82	757.3	30.17	766.3	64.9	18.3	67	SW	15.0	6.7			3	SW		0	0		The Staff.
Ponta Delgada (Azores)	30.14	765.6	30.21	767.4	73.4	23.0	56	WNW	3.8	1.7			5			0.016	0.4		

Note.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE Naval Series. Vessels and Captains.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't.
Duque da Terceira																				J. C. M. Cabrate, 1st Lt.
Mindello [Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.87	758.7	70.7	21.5		NW			2		5		NW	1	NW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela.			30.03	762.8	71.6	22.0		W			3		1			2	NW		Blue sky	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

Note.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.53	750.0	29.55	750.5	53.4	11.9	75	W	9	4			6ks						Capt. Sseliwerstow.
Astrakhan	29.72	754.8	29.63	752.7	71.2	21.8	47	W	18	8			5s						Capt. Wisganow.
Barnaul	29.18	741.1	29.65	753.0	78.8	26.0	47	N	0	0			2						Meteorological Obs.
Dorpat	29.58	751.2	29.81	757.2	59.9	15.5	36	N	9	4			0						Prof. Dr. Weihrauch.
Ekaterinburg	28.71	729.3	29.63	752.6	70.3	21.3	44	SSE				1ck						Light clouds	Meteorological Obs.
Irkutsk																			
Kasan	29.34	745.2	29.60	751.8	60.4	15.8	53	SW	2	1			10n						Physical Cabinet.
Kertch	29.78	756.3	29.80	756.8	63.7	17.6	63	WNW	7	3			3						Lagorio.
Kieff	29.07	738.3	29.67	753.7	69.6	20.9	49	NE	4	2			6cks						Physical Cabinet.
Krotkowo*	29.26	743.2	29.72	755.0	54.9	12.7	86	N	7	3			10					Light rain	Cand. Fatjanow.
Lugan	29.45	747.9	29.65	753.0	65.1	18.4	48	SW	4	2			6			Blank	Blank		Meteorological Obs.
Moscow	29.08	738.5	29.60	751.8	64.6	18.1	64	SW	4	2			8n					Raining	Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.72	755.0	29.80	756.8	73.0	22.8	46	NNE	4	2			7k;ks						Kurdakof.
Nikolaievsk, on the Amoor.	29.80	757.0	29.89	759.2	59.2	15.1	91	SE	11	5		5ck							
Nukuss	29.66	753.3	29.87	758.8	92.5	33.6	34	NNW	3.6	1.6			1k						
Orenburg																			
Pekin (China)	29.79	756.6	29.93	760.2	71.2	21.8	91	Calm	0	0			10n					Thunder storm.	Physical Observatory.
St. Petersburg	29.71	754.7	29.73	755.1	59.4	15.2	44	NW	9	4			7kn						Central Physical Obs.
Tashkend	28.09	713.5	29.54	750.2	89.2	31.8		Calm	0	0			0						Teich, A. M.
Tiflis	28.28	718.2	29.62	752.3	74.5	23.6	49	W	13	6			9n					Raining	Physical Observatory.
Vladivostock																			
Warsaw	29.36	745.8	29.77	756.1	71.4	21.9	38	E	2	1			0						Astronomical Obs.
Wilna	29.35	745.5	29.75	755.7	69.3	20.7	31	NW	4	2			1					Light clouds	Astronomical Obs.
Yeniseisk	29.54	750.4	29.81	757.2	81.9	27.7	44	E	2	1			0						Marks.

Note.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.95	760.7	30.05	763.3	73.4	23	59	SSE	5.3	2.36			1k						Antonio Rave, Director
Bilbao, Met. Obs'y	30.07	763.7	30.12	765.1	70.5	21.4	64	NW	0.9	0.38		3	4	S		0.146	3.7	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.25	692.1			62.4	16.9	63	SW	7.7	3.46			4			0	0	Cloudy	Domingo Martin y Peres
Madrid, Royal Observatory	27.88	708.1	30.02	762.5	76.3	24.6	33	SW	8.9	4.00		0	0			0	0	Clear.	The Staff.
Murcia, Met. Obs'y	29.89	759.2	30.03	762.8	87.4	30.8	37	NE	4.8	2.14		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.11	739.5	29.99	761.8	65.5	18.6	73	SW	16.1	7.2			4			0.024	0.6	Cloudy	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	29.93	760.1	29.99	761.8	75.6	24.2	88	ESE	6.3	2.8		10cs	6n		SW	1.248	31.7	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands.	29.86	758.4	29.91	759.7	85.1	29.5	71	ESE	7.3	3.3			1s			0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.8	30.13	765.3	73.0	22.8	66	WNW	12.9	5.8		0	0			0	0		Capt. C. Palazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.00	761.9	30.09	764.2	80.6	27.0	86	E	8.4	3.78		3s	3k	E	E	0.246	6.25	Clear	Enrique Gadea, Chief Eng'r.

Note.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.67	753.6	29.71	754.6	50.4	10.2	.....	SW	.....	.....	2	.....	9	.....	.....	0	0	.....	
Umea	29.70	754.4	29.75	755.7	59.7	15.4	38	SW	.....	.....	4	.....	7	.....	.....	0	0	.....	
Hernosand	29.74	755.3	29.79	756.6	62.6	17.0	41	SSE	.....	.....	4	.....	3	.....	.....	0	0	.....	
Stockholm	29.68	753.9	29.86	758.4	66.6	19.2	25	SSW	.....	.....	2	.....	1	.....	.....	0	0	.....	
Wisby	29.81	757.1	29.87	758.6	63.3	17.4	47	SE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.72	754.8	29.80	757.0	72.0	22.2	31	SSW	15.0	6.7	.....	.....	1	.....	.....	0.020	0.50	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 33° 38′, W. 17° 27′	.....	.....	30.20	767.1	73.0	22.8	.....	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.56	725.4	29.96	761.0	62.6	17.0	57	SSW	.....	.....	3	.....	7	.....	.....	0.075	1.9	Cloudy	The Observatory.
Zurich	28.31	719.0	29.90	759.5	67.3	19.6	58	W	.....	.....	3	.....	6	.....	.....	0	0	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.4 mm.; Thermometer, —4.3 Cent. Relative Humidity, +2 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.75	755.7	70.3	21.3	69	N	13	6.0	.....	.....	9	.....	NNE	0.091	2.3	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.93	760.3	77.9	25.5	.....	SW	.....	.....	2	.....	0	.....	.....	0	0	Clear	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.77	756.2	84.2	29.0	58	SW	.....	.....	3	.....	6k	.....	SW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	55.0	12.8	.....	SE	8	3.6	.....	.....	10n	.....	.....	Inap.	Inap.	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.54	750.3	29.61	752.1	55.0	12.8	97	NE	7	3.1	.....	.....	10n	.....	.....	0.48	12.2	Light rain	G. A. Blair.
Charlottetown, P. E. Island	29.56	750.8	29.61	752.1	53.1	11.7	95	SE	24	10.7	.....	.....	10n	.....	.....	0.580	14.73	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.67	753.6	29.86	758.4	56.1	13.4	77	W	.....	.....	1	0	1s	.....	.....	0	0	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.52	749.8	29.69	754.1	53.0	11.7	100	E	.....	.....	6	.....	10n	.....	.....	0.67	17.0	Raining	H. A. Johnson.
Father Point, Quebec	29.73	755.1	29.75	755.6	49.6	9.8	96	N	5	2.2	.....	.....	10n	.....	.....	0.03	0.8	Light rain	J. McWilliams.
Fredericton, N. B.	29.51	749.5	29.57	751.1	55.8	13.2	83	NW	10	4.5	.....	6ck	5s	E	.....	0.330	8.38	Fair	Prof. Harrison.
Fort Garry, Manitoba	28.87	733.3	29.66	753.4	65.5	18.6	78	Calm	0	0	.....	0	5ks	.....	.....	0.055	1.40	Fair	James Stewart.
Granton, Ontario	28.86	733.0	29.91	759.7	71.0	21.7	80	NW	.....	.....	1	1c	0	NW	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.43	747.5	29.56	750.8	55.9	13.3	97	E	2	0.9	.....	.....	Fog	.....	.....	0.378	9.60	Foggy	A. Allison.
Hamilton, Ontario	29.54	750.3	29.92	760.0	70.5	21.4	80	SW	.....	.....	1	5ck	0	.....	.....	0	0	Fair	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.56	750.8	29.89	759.2	61.4	16.3	79	NE	4	1.8	.....	.....	10ks	.....	.....	0	0	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.71	754.6	29.75	755.6	47.5	8.6	92	SE	12	5.4	.....	.....	10n	.....	.....	0	0	Overcast	C. H. Rigby.
Montreal, Quebec	29.65	753.1	29.84	757.9	56.9	13.8	55	NW	8	3.6	.....	0	8ks;s	.....	.....	0	0	Fair	C. H. McLeod, C. E.
Moose Factory, Ontario	30.08	764.0	30.11	764.8	53.2	11.8	75	Calm	.....	.....	0	6ck	0	.....	.....	0	0	Fair	J. R. Nason.
Norwood, Ontario	29.22	742.2	29.90	759.4	61.0	16.1	66	NE	3	1.3	.....	.....	10s	.....	.....	0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.23	742.4	29.90	759.4	65.0	18.3	76	E	5	2.2	.....	1ck	2ks	NW	.....	0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.20	741.7	29.93	760.2	63.7	17.6	57	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast	J. F. Jeffers, M. A.
Port Dover, Ontario	29.25	742.9	29.91	759.7	72.1	22.3	90	Calm	0	0	.....	5ck	0	W	.....	0	0	Fair	H. Morgan.
Port Stanley, Ontario	29.32	744.7	29.94	760.5	71.8	22.1	79	NW	6	2.7	.....	0	0	.....	.....	0.13	3.3	Clear	M. Payne.
Quebec, Quebec	29.48	748.8	29.79	756.7	53.0	11.7	80	N	.....	.....	5	0	3s	.....	.....	0.01	0.3	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.41	747.0	29.86	758.4	57.2	14.0	79	Calm	0	0	.....	8ck	0	NW	.....	0	0	Fair	W. H. McIntyre.
St. John, N. B.	29.41	747.0	29.57	751.1	55.0	12.8	100	SE	1	0.4	.....	.....	10n	.....	.....	1.190	30.2	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.21	741.9	29.89	759.2	70.7	21.5	72	SW	8	3.6	.....	1cs	0	.....	.....	0	0	Clear.	K. Stewart
Stratford, Ontario	28.71	729.2	29.94	760.5	68.0	20.0	77	NW	3	1.3	.....	1ck	0	NW	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.72	754.9	29.76	755.9	49.0	9.4	93	E	10	4.5	.....	.....	10n	.....	.....	Inap.	Inap.	Cloudy	T. C. Hill, C. E
Toronto, Ontario	29.55	750.6	29.92	760.0	70.5	21.4	58	N	2	0.9	.....	6ck	Haze	W	.....	0	0	Fair	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.88	733.5	29.89	759.2	73.4	23.0	90	W	11	4.9	.....	1c	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.53	750.0	29.59	751.6	51.6	10.9	93	W	7	3.1	.....	.....	8s	.....	.....	0.51	13.0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.77	756.1	30.03	762.7	41	5.0	91	E	2	0.9	.....	.....	Fog	.....	.....	0.18	4.6	Foggy	John Delany.
St. Pierre, N. F., (Hôpital Maritime)	.....	.....	29.83	757.7	52.9	11.6	.....	E	.....	.....	1	.....	.....	.....	.....	0.87	22.1	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.77	756.1	29.85	758.2	70	21.1	77	NW	6	2.7		0	0			0	0	Clear.	
Alpena, Michigan	29.26	743.2	29.87	758.7	70	21.1	70	Calm	0	0		2ck	Haze	W	Calm	0	0	Clear.	
Attu, Aleutian Is., Alaska																			
Atlanta, Georgia	28.92	734.6	30.02	762.5	72	22.2	63	E	5	2.2		0	Haze			0	0	Clear.	
Atlantic City, New Jersey	29.88	758.9	29.90	759.4	73	22.8	81	NW	2	0.9		10k	Haze	NW	Calm	0.24	6.1	Cloudy	
Augusta, Georgia	29.92	760.0	30.11	764.8	72	22.2	71	Calm			0	0	Haze		Calm	0	0	Clear.	
Baltimore, Maryland	29.88	758.9	29.92	760.2	78	25.6	57	NW	8	3.6		0	8ks		NW	0	0	Fair	
Barnegat, New Jersey	29.85	758.2	29.87	758.7	70	21.1	70	NW	8	3.6		10ck	0	Calm		0.42	10.7	Cloudy	
Bismarck, Dakota	27.97	710.4	29.83	757.7	70	21.1	90	Calm	0	0		0	0			0.36	9.1	Clear	
Boerne, Texas	28.50	723.9	29.78	756.4	63	17.2	94	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.09	688.1	30.05	763.3	51	10.6	59	Calm	0	0		0	5s		NW	0	0	Fair	
Boston, Massachusetts	29.62	752.3	29.76	755.9	65	18.3	58	W	15	6.7		2cs	0	NW		0	0	Clear	
Brackettville, Texas	28.78	731.0	29.80	756.9	71	21.7	85	E	7	3.1		5k	0	S		0	0	Fair	
Breckenridge, Minnesota	28.70	729.0	29.93	752.6	70	21.1	85	W	4	1.8		5k	0	SW		0.66	16.8	Fair	
Brownsville, Texas	29.84	757.9	29.88	758.9	76	24.4	77	Calm	0	0		2cs	0	Calm		0.05	1.3	Clear.	
Buffalo, New York	29.21	741.9	29.87	758.7	70	21.1	70	SW	2	0.9		0	Haze		Calm	0	0	Dense haze.	
Burkes, Arizona					69	20.6	23	Calm			0	0	0			0	0	Clear.	
Burlington, Vermont	29.57	751.1	29.85	758.2	56	13.3	63	NW	7	3.1		2ck	8ks	W	NW	Inap.	Inap.	Cloudy	
Cairo, Illinois	29.70	754.4	30.07	763.8	75	23.9	68	NE	3	1.3		0	Haze			0	0	Clear.	
Campo, California	27.34	694.4	29.91	759.7	37	2.8	71	SW	3	1.3		0	0			0	0	Clear.	
Cape Hatteras, N. Carolina	30.13	765.3	30.13	765.3	75	23.9	77	W	15	6.7		5cs	Haze	Calm	Calm	0	0	Hazy	
Cape Henry, Virginia	29.95	760.7	29.97	761.2	74	23.3	59	SW	13	5.8		5cs	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.05	763.3	30.06	763.5	72	22.2	85	NW	16	7.2		5c	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	29.86	758.4	29.89	759.2	72	22.2	81	W	11	4.9		2cs	5s	NW	W	0	0	Fair	
Castroville, Texas	29.16	740.7	29.84	757.9	68	20.0	84	W	3	1.3		0	0			0	0	Clear	
Cedar Keys, Florida	30.02	762.5	30.04	763.0	71	21.7	90	E	5	2.2		0	8ks		E	0.55	14.0	Fair	
Charleston, South Carolina	30.02	762.5	30.07	763.8	77	25.0	73	NE	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.23	742.4	30.01	762.2	74	23.3	51	W	6	2.7		0	Haze		Calm	0	0	Clear.	
Chattanooga, Tennessee	29.29	744.0	30.07	763.8	69	20.6	75	Calm	0	0		1cs	Haze	Calm	Calm	0	0	Clear	
Cheyenne, Wyoming	24.02	610.1	29.96	761.0	54	12.2	55	NW	6	2.7		0	0			Inap.	Inap.	Clear	
Chicago, Illinois	29.31	744.5	29.96	761.0	75	23.9	68	SW	3	1.3		0	0			0	0	Clear.	
Chincoteague, Virginia	29.92	760.0	29.94	760.5	77	25.0	81	NW	14	6.3		2c	5s	W	W	0	0	Cloudy	
Cincinnati, Ohio	29.43	747.5	30.05	763.3	72	22.2	76	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.28	743.7	29.97	761.2	72	22.2	80	W	13	5.8		1c	0	W		0	0	Clear	
Coleman City, Texas	28.18	715.8	29.79	756.7	70	21.1	75	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.18	741.1	29.98	761.5	74	23.3	59	NW	2	0.9		0	Sm'e		Calm	0	0	Clear.	
Concho, Texas	28.08	713.2	29.69	754.1	71	21.7	71	NE	4	1.8		0	0			0	0	Clear.	
Corsicana, Texas	29.54	750.3	30.00	762.0	68	20.0	79	E	4	1.8		0	0			0	0	Clear.	
Davenport, Iowa	29.36	745.7	29.97	761.2	73	22.8	72	SW	4	1.8		5k	0	SW		0	0	Fair	
Dayton, Washington T'y					43	6.1	83	E			1	0	0			0	0	Clear.	
Deadwood, Dakota	25.28	642.1			58	14.4	53	Calm	0	0		0	0			0	0	Clear.	
Decatur, Texas	28.83	732.3	29.95	760.7	75	23.9	77	E	3	1.3		0	0			0	0	Clear	
Delaware Breakwater, Del.	29.89	759.2	29.91	759.7	74	23.3	72	NW	12	5.4		5c	2s	NW	NW	0	0	Fair	
Denison, Texas	29.21	741.9	29.98	761.5	70	21.1	80	E	1	0.4		0	Haze		Calm	0	0	Light haze.	
Denver, Colorado	24.74	628.4	29.96	761.0	60	15.6	65	S	2	0.9		0	0			0.27	6.9	Clear	
Des Moines, Iowa	29.09	738.9	29.93	760.2	71	21.7	62	SW	5	2.2		2c	0	NW		0	0	Clear.	
Detroit, Michigan	29.31	744.5	29.95	760.7	69	20.6	65	W	7	3.1		5cs;k	0	Calm;W		0	0	Fair	
Dodge City, Kansas	27.32	693.9	29.50	749.3	69	20.6	61	S	18	8.0		0	0			0	0	Clear.	
Dubuque, Iowa	29.29	744.0	29.96	761.0	74	23.3	63	S	6	2.7		8k	Haze	S	Calm	0	0	Fair	
Duluth, Minnesota	29.09	738.9	29.73	755.1	67	19.4	89	NE	7	3.1		2c	0	W		0	0	Fair	
Eagle Pass, Texas	29.18	741.1	29.88	758.9	77	25.0	69	SE	2	0.9		0	0			0	0	Clear	
Eastport, Maine	29.49	749.0	29.56	750.8	56	13.3	75	N	11	4.9			10ks		N	0.78	19.8	Cloudy	
Edinburg, Texas					78	25.6	83	Calm			0	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.23	742.4	29.91	759.7	71	21.7	71	W	8	3.6		0	5ks		W	0.59	15.0	Fair	
Escanaba, Michigan	29.26	743.2	29.87	758.7	74	23.3	55	SW	3	1.3		8c	0	Calm		0	0	Fair	
Florence, Arizona	28.31	719.1	29.91	759.7	75	23.9	64	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.01	635.2	30.46	773.7	54	12.2	80	E	4	1.8		5cs	0	S		0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.75	704.8	29.52	749.8	56	13.3	80	SW	6	2.7		0	0			0	0	Clear.	
Fort Custer, Montana	26.74	679.2			57	13.9	63	SW	5	2.2		0	0			0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.17	766.3	67	19.4	64	W	1	0.4		0	0			0	0	Clear.	
Fort Elliot, Texas	26.92	683.8	29.07	738.4	64	17.8	73	Calm	0	0		0	0			0	0	Clear	
Fort Gibson, Indian Ter.	29.47	748.5	29.99	761.7	68	20.0	74	Calm	0	0		0	0			0	0	Clear	
Fort Grant, Arizona	25.18	639.6	29.98	761.5	66	18.9	59	NE	3	1.3		5c	0	Calm		0	0	Fair	
Fort Griffin, Texas	28.72	729.5	29.96	761.0	66	18.9	79	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.12	688.8			57	13.9	73	W	3	1.3		0	0			0	0	Clear	
Fort McKavett, Texas	27.72	704.1	29.56	750.8	69	20.6	75	S	1	0.4		1ck	0	NW		0	0	Clear.	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.79	731.3	29.86	758.4	70	21.1	75	SE	3	1.3		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.93	709.4			64	17.8	83	Calm	0	0		0	0			0	0	Clear	
Fort Verde, Arizona					62	16.7	36	SW			1	0	0			0	0	Clear.	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.85	758.2	29.89	759.2	75	23.9	77	NW	16	7.2		2cs	0	Calm		0	0	Clear.	
Grand Haven, Michigan	29.34	745.2	29.96	761.0	75	23.9	68	SW	6	2.7		0	0			0	0	Clear	
Helena, Montana					50	10.0	52	S	3	1.3		0	0			0	0	Clear.	
Henrietta, Texas																			
Indianapolis, Indiana	29.26	743.2	30.00	762.0	74	23.3	72	Calm	0	0		10c	0	Calm		0	0	Cloudy	
Indianola, Texas	29.00	759.4	29.93	760.2	75	23.9	81	NE	12	5.4		0	0			0	0	Clear	
Jacksboro, Texas																			
Jacksonville, Florida	30.02	762.5	30.04	763.0	78	25.6	78	NE	6	2.7		5cs;k	0	NE		1.12	28.4	Fair	
Keokuk, Iowa	29.37	746.0	29.95	760.7	77	25.0	65	SW	4	1.8		2cs	Haze	Calm	Calm	0	0	Fair	
Key West, Florida	29.98	761.5	30.02	762.5	79	26.1	78	E	10	4.5			10s		Calm	0.09	2.3	Cloudy	
Kittyhawk, North Carolina	30.01	762.2	30.04	763.0	71	21.7	75	W	16	7.2		10c	0	N		0	0	Cloudy	
Knoxville, Tennessee	29.11	739.4	30.08	764.0	70.5	21.4	77	Calm	0	0		2cs	Haze	Calm		0	0	Fair	
La Crosse, Wisconsin	29.19	741.4	29.89	759.2	74	23.3	63	S	8	3.6		0	0			0	0	Clear	
La Mesilla, New Mexico	26.07	662.2	30.22	767.6	64	17.8	73	Calm	0	0		0	2s		Calm	Inap.	Inap.	Fair	
Laredo, Texas	29.47	748.5	29.79	756.7	75	23.9	77	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.14	740.1	29.95	760.7	70	21.1	61	S	3	1.3		0	0			0	0	Clear.	
Lewiston, Idaho	29.19	741.4	29.84	757.9	50	10.0	64	NE	1	0.4		0	0			0	0	Clear	
Little Rock, Arkansas	29.69	754.1	30.00	762.0	72	22.2	76	N	2	0.9		0	0			0	0	Clear.	
Los Angeles, California	29.59	751.6	29.93	760.2	59	15.0	88	W	1	0.4			10s		SW	0	0	Cloudy	
Louisville, Kentucky	29.49	749.0	30.03	762.7	72	22.2	67	NW	2	0.9		0	Sm'e		Calm	0	0	Clear	
Lynchburg, Virginia	29.34	745.2	29.98	761.5	77	25.0	61	Calm	0	0		10c	Haze	Calm		0	0	Cloudy	
Madison, Wisconsin	28.98	736.1	29.92	760.0	72	22.2	71	SW	7	3.1		10cs	0	W		0	0	Cloudy	
Marquette, Michigan	29.18	741.1	29.84	757.9	77	25.0	57	W	16	7.2		0	0			0	0	Clear.	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.34	719 8	30.05	763.3	67	19.4	84	SW	1	0.4		0	0			0	0	Clear	
Memphis, Tennessee	29.66	753.4	29.99	761.7	74	23.3	63	NE	5	2.2		Haze	Haze			0	0	Hazy	
Milwaukee, Wisconsin	29.25	742.9	29.94	760.5	76	24.4	56	SW	9	4.0		0	0			0	0	Clear	
Mobile, Alabama	29.92	760.0	29.96	761.0	73	22.8	90	SE	5	2.2			10n		Calm	0.05	1.3	Light rain	
Montgomery, Alabama	29.81	757.2	30.04	763 0	74	23.3	76	E	8	3.6		8cs	0	Calm		0	0	Fair	
Morgantown, West Virginia	29.03	737.3	29.97	761.2	73	22.8	72	NW	1	0.4		8cs	Haze	NW		0	0	Fair	
Mt Washington, N. H.	23.54	697.9	29.90	759.4	28	— 2.2	100	NW	15	6.7			Fog		NW	0	0	Dense fog	
Nashville, Tennessee	29.54	750.3	30.05	763.3	76	24.4	60	Calm	0	0		0	Sm'e		Calm	0	0	Clear	
New Haven, Connecticut	29.71	754.6	29.82	757.4	68	20.0	60	NW	3	1.3			10s		NW	0	0	Cloudy	
New London, Connecticut	29.78	756.4	29.82	757.7	72	22.2	54	W	8	3.6		0	0	Calm		0.41	10.4	Clear	
New Orleans, Louisiana	29.81	757.2	29.86	758.4	72	22.2	90	NE	11	4.9			10s		NE	0.24	6.1	Cloudy	
Newport, Rhode Island	29.73	755.1	29.78	756.4	67	19.4	50	W	12	5.4		0	0			0.56	14.2	Clear	
New River, North Carolina					73	22.8	76	W			1	5c	0	W				Fair	
New York, New York	29.70	754.4	29.87	758.7	69	20.6	75	W	3	1.3			10ks		W	Inap	Inap.	Cloudy	
Norfolk, Virginia	29.94	760.5	30.00	762.0	76	24.4	60	W	6	2.7		5c	Haze	SE	Calm	0	0	Fair	
North Platte, Nebraska	26.92	683.8	29.33	745.0	72	22.2	62	S	20	8.9		2k	0	S		0.22	5.6	Clear	
Olympia, Washington Ter.	30.00	762.0	30.04	763.0	47.0	8.3	92	N	1	0.4		0	0			0	0	Clear	
Omaha, Nebraska	28.78	731.0	29.82	757.4	76	24.4	56	S	11	4.9		1c	0	Calm		0	0	Clear	
Oswego, New York	29.60	751.8	29.91	759.7	63	17.2	83	N	5	2.2			10s		N	0	0	Cloudy	
Pembina, Dakota	28.82	732.0	29.61	752.1	63	17.2	94	S	2	0.9		0	0			0.58	14.7	Clear	
Pensacola, Florida	29.94	760.5	29.97	761.2	76	24.4	86	SE	15	6.7			10s		SE	Inap.	Inap.	Cloudy	
Philadelphia, Pennsylvania	29.85	758.2	29.90	759.4	71	21.7	75	W	4	1.8		5cs	2s;fg	Calm	Calm	0.50	12.7	Cloudy	
Phœnix, Arizona	28.67	728.2	30.36	771.1	89	31.7	32	Calm	0	0		0	0			0.		Clear	
Pike's Peak, Colorado	17.94	455.7	30.15	765.8	35	1.7	53	W	24	10.7		0	0			0.05	1.3	Clear	
Pilot Point, Texas	29.21	741.9	30.03	762.7	69	20.6	75	SE	2	0.9		0	0			0	0	Clear	
Pioche, Nevada	24.00	609.6	29.77	756.1	55	12.8	22	S	8	3.6		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.18	741.1	29.95	760.7	69	20.6	75	NW	2	0.9		0	0			0	0	Clear	
Port Huron, Michigan	29.29	744.0	29.92	760.0	72	22.2	62	W	8	3.6		0	0			0	0	Clear	
Portland, Maine	29.68	753.9	29.73	765.1	60	15.6	44	N	16	7.2		0	5ks		W	0	0	Fair	
Portland, Oregon	29.95	760.7	30.02	762.5	49	9.4	93	Calm	0	0		1cs	5ks	NW	NW	0	0	Fair	
Portsmouth, North Carolina					74	23.3	76	W	16	7.2		5c	0	Calm		0	0	Fair	
Prescott, Arizona	24.74	628.4	30.10	764.5	49	9.4	44	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	29.99	761.7	30.00	762 0	76	24.4	77	E	8	3.6		10cs	0	S		0.21	5.3	Cloudy	
Red Bluff, California	29.47	748.5	29.83	757.4	62.0	16.7	56	SW	5	2.2		0	0			0	0	Clear	
Rio Grande City, Texas	29.72	754.9	29.93	760.2	76	24.4	77	E	2	0.9		0	0			0	0	Clear	
Rochester, New York	29 29	744.0	29.88	758.9	65	18.3	78	N	7	3.1			10n		Calm	0.06	1.5	Light rain	
Roseburg, Oregon	29.73	755.1	30.00	762.0	47	8.3	88	Calm	0	0		1c	0	Calm		0	0	Clear	
Sacramento, California	29.74	755.4	29.82	757.4	54	12.2	80	SE	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.48	748.8	30.03	762.7	72	22.2	80	S	1	0.4		0	Sm'e			0	0	Clear	
St. Paul, Minnesota	28.97	735.8	29.74	755.4	73	22.8	67	S	6	2.7		2ck	0	W		0	0	Fair	
Salt Lake City, Utah	25.57	649.5	29.90	759.4	60	15.6	20	NE	1	0.4		0	0			0	0	Clear	
San Antonio, Texas	29.27	743.4	29.95	760.7	69	20.6	85	E	1	0.4		0	0			0	0	Clear	
San Diego, California	29.88	758.9	29.95	760.7	59	15.0	82	N	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.34	745.2	29.98	761.5	72	22.2	67	W	11	4.9		0	0			0	0	Clear	
Sandy Hook, New Jersey	29.83	757.7	29.86	758.4	70	21.1	80	W	12	5.4		5ck	5s	Calm	Calm	0.04	1.0	Cloudy	
San Francisco, California	29.85	758.2	29.92	760.0	51	10.6	93	SW	9	4.0			Fog		SW	0	0	Foggy	
Santa Fé, New Mexico	23.28	591.3	29.82	757.4	56	13.3	81	E	4	1.8		0	1ks		E	0.33	8.4	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	80	26.7	70	NE	3	1.3		2k	Haze	S	Calm	0	0	Fair	
Shreveport, Louisiana	29.72	754.9	29.94	760.5	72	22.2	75	Calm	0	0		5c	0	Calm		0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.08	764.0	30.12	765.0	75	23.9	77	N	2	0.9		0	0			0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.39	746.5	30.03	762.7	75	23.9	60	Calm	0	0		0	Sm'e		Calm	0	0	Smoky	
Springfield, Massachusetts	29.69	754.1	29.82	757.4	72	22.2	46	W	5	2.2		0	0			0.02	0.5	Clear	
Stockton, Texas	26.92	683.8	29.92	760.0	70	21.1	66	S	12	5.4		0	0			0	0	Clear	
Thatcher's Island, Mass.	29.71	754.6	29.76	755.9	62	16.7	72	NW	21	9.4		10k	0	NW		0	0	Cloudy	
Toledo, Ohio	29.35	745.5	30.00	762.0	76	24.4	60	W	5	2.2		2c	Sm'e	NW	Calm	0	0	Fair	
Tucson, Arizona	27.42	696.5	29.97	761.2	84	28.9	44	SE	2	0.9		0	5s		Calm	0	0	Fair	
Umatilla, Oregon	29.65	753.1	30.14	765.5	52	11.1	60	S	5	2.2		1c	0	E		0	0	Clear	
Uvalde, Texas	29.02	737.1	29.80	756.9	77	25.0	69	S	1	0.4		5k	0	N		0	0	Fair	
Vicksburg, Mississippi	29.70	754.4	29.95	760.7	74	28.3	63	E	6	2.7		2c	5s	Calm	E	0	0	Fair	
Virginia City, Montana	24.23	615.4	29.71	754.6	46	7.8	33	W	2	0.9		0	0			0	0	Clear	
Visalia, California	29.43	747.5	29.80	756.9	56	13.3	63	SE	4	1.8		0	0			0	0	Clear	
Washington, D. C.	29.85	758.2	29.96	761.0	77	25.0	61	W	6	2.7		5cs	0	NW		0	0	Fair	
Wickenburg, Arizona					61	16.1	41	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.00	762.0	30.08	764.0	71	21.7	80	NW	4	1.8		0	0			0	0	Clear	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	41	5.0	49	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.74	755.4	29.77	756.1	64	17.8	63	NW	20	8.9		0	0			0.21	5.3	Clear	
Yankton, Dakota	28.56	725.4	29.76	755.9	78	25.6	54	NW	6	2.7			10ks		NW	0	0	Cloudy	
Yuma, Arizona	29.60	751.8	29.74	755.4	70	21.1	61	NW	1	0.4		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3			55.0	12.8	74	Calm	0	0			10n			0.06	1.5	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	77	25.0	86	Calm	0	0		10cs	4ks	Calm	Clam	1.22	31.0	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.00	762.0	30.01	762.2	80.0	26.7	81	Calm	0	0			2ks		E	0	0	Fine	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	81	27.2	74	E	12	5.4		2k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	80	26.7	87	E			2	3ck	5k	E		0.400	10.16	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.46	748.3	30.02	762.5	73	22.8	94	Calm			0		10ks;s			0.87	22.1		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25		NW					6k		NW	0	0		Earl Flint.
Santiago de Cuba, W. I.	30.01	762.2	30.03	762.7	82	27.8	74	Calm	0	0		8ck	4k	NE		0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	30.06	763.5	30.12	765.0	52.0	11.1	90	NW	5	2.2		0	0			0	0	Clear	J. Fortsecue & W. Wood

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) nf.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75 2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126 0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm.; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	29.97	761.2	77	25.0	86	SE	12	5.4			10n		SE					Threatening	
§Navy Yard, Portsmouth, N. H.	29.80	756.9	61	16.1	61	NW	22	9.8			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	30.20	767.1	67	19.4	84	Calm			0		0			Slight	Slight			Clear	
§Adams, S. 4° 55′, W. 81° 29′	30.02	762.5	65	18.3	94	SE			5		8		SE					Cloudy	
§Alaska, Callao, Peru *	29.98	761.5	62	16.7	83	Calm			0		10					Long	SW	Cloudy	
§Alert, N. 34° 29′, E. 139° 43′	30.03	762.7	74	23.3	76	ENE			5		2		ENE	0	0	Mod'ate	ENE	Fair	
§Alliance, St Pierre, Newfoundland	29.88	758.9	53	11.7	93	NNE			1		10		Calm	Heavy	Heavy	Smooth	E	Overcast	
§Ashuelot, N. 32° 19′, E. 127° 14′	30.02	762.5	71	21.7	85	NE			3		10		Calm	0	0	Mod ate	NE	Cloudy	
§Colorado, New York, N. Y.	29.81	757.2	71	21.7	66	NW	3	1.3			10		NW					Overcast	
§Constellation, N. 39° 04′, W. 73° 53′	29.84	757.9	71	21.7	85	NW			3		10		NW			Smooth		Cloudy	
§Constitution, Navy Yard, Brooklyn, N.Y.	29.85	758.2	71	21.7	75	NNW	6	2.7			10		N					Cloudy	
§Franklin, Off Navy Yard, Norfolk, Va	29.98	761.5	72	22.2	67	WSW	8	3.6			2		SW	0	0			Fair	
§Independence, Mare I'd, Navy Yard, Cal.	29.90	759.4	58	14.4	76	SW	3.6	1.6			10		SW	0	0			Overcast	
§Jamestown, Sitka, Alaska *	29.85	758.2	48	8.9	92	SSW			3		10		S			Mod'ate	S	Rain & fog	
§Kearsarge, Boston, Mass	29.81	757.2	65	18.3	54	WNW			2		0							Clear	
§Lackawanna, N. 8° —′, W. 80° 46′ †	30.03	762.7	81	27.2	83	Calm			0		10		S					Cloudy	
§Marion, S. 46° 40′, W. 55° 57′	29.76	755.9	47	8.3	100	ENE			2		10			0	0	Smooth	NE	Cloudy	
§Michigan, Erie, Pa.	29.85	758.2	70	21.1	90	SW			3		2		W					Clear	
§Minnesota, Newburgh, N. Y *	29.86	758.4	68	20.0	70	WSW			2		10		Calm					Cloudy	
§Monocacy, Chefoo, China	30.01	762.2	69	20.6	85	S			1		0			0	0			Clear	
§New Hampshire, Port Royal, S. C.	30.04	763.0	77	25.0	82	ENE	7	3.1			2		Calm	0	0			Clear	
Nipsic, N. 33° 55′, E. 24° 28′	29.89	759.2	77	25.0	73	NW			5		2		NW			Long	NW	Hazy	
§Onward, Chimbote, Peru †	29.97	761.2	66	18.9	84	NE			2		10		SSW			Long	W	Cloudy	
§Palos, Shanghai, China	30.01	762.2	70	21.1	95	ESE			1		10							Overcast	
§Passaic, Washington, D. C.	29.96	761.0	77	25.0	91	SW			1		0			0	0			Clear	
§Pensacola, N. 42° 13′, W. 124° 30′	29.83	757.7	51	10.6	93	NNW			6		1		NNW			Rough	NNW	Clear	
§Portsmouth, N. 36° 21′, W. 32° 20′	30.25	768.3	67	19.4	79	NE			4		8		NE			Long	WNW	Cloudy	
§Powhatan, New York, N. Y.	29.84	757.9	72	22.2	85	Calm			0		10		NW					Cloudy	
§Quinnebaug, Stockholm, Sweden	29.85	758.2	67	19.4	42	SW			2		0					Smooth		Clear	
§Richmond, Kobe, Japan	30.17	766.3	73	22.8	95	ENE			3		8		ENE	0	0			Fair	
Rio Bravo, Brownsville, Texas †	30.08	764.0	73	22.8	90	NW	2	0.9			5		Calm	0	0			Fair	
§Saratoga, N. 10° 40′, E. 13° 03′	29.95	760.7	74	23.3	72	NW			2		0			0	0	Smooth		Clear	
§Shenandoah, Buenos Ayres, Argentine Republic	29.97	761.2	59	15.0	94	NW			3		0					Smooth		Misty	
§St. Louis, League Island, Pa.	29.90	759.4	71	21.7	90	Calm	0	0			8		W	0.57	14.5			Cloudy	
Swatara, Hong-Kong, China †	29.88	758.9	81	27.2	87	SW			2		10		Calm			Smooth		Cloudy	
§Tennessee, New York, N. Y.	29.87	758.7	72	22.2	71	WNW			1		10		WNW	0	0	Smooth		Hazy	
§Ticonderoga, Nagasaki, Japan	30.01	762.2	77	25.0	82	ENE			1		8		NNW			Smooth		Cloudy	
§Trenton, N. 38° 25′, W. 11° 57′	30.15	765.8	66	18.9	79	SW			4		2			0	0	Long	W	Cloudy	
§Vandalia, Boston, Mass	29.79	756.7	63	17.2	57	NW			3		1		S					Clear	
§Wabash, Boston, Mass	29.76	755.9	63	17.2	47	WNW	13	5.8			2			0	0			Fair	
§Wachusett, Valparaiso, Chili	30.10	764.5	56	13.3	94	SE			1		8		S;E			Long	N	Cloudy	
Wyoming, Gibraltar, Mediterranean	30.06	763.5	71	21.7	66	SSE			2		2		S			Mod'ate	S	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent, N. 49° 59', W. 23° 54'	29.80	756.9	50	10.0	64	WNW			5		8		WNW	Mod'ate	Mod'ate	Mod'ate	WNW	Cloudy	
S. S. Ohio, Henry Morrison, N. 39° 45', W. 57° 54'.....†	29.92	760.0	79	26.1	91	SW			3		1		SW	1 h'r	1 h'r	Small	SW	Very fine	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger, N. 31° 40', W. 117° 00'....†	29.96	761.0	59	15.0	88	NNW			3		10		NNW	0	0	Small	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson.																			
S. S. Scythia, W. H. O. Hains, N. 44° 26', W. 37° 18'	29.91	759.7	66	18.9	68	S			1		8		S	0	0	Smooth	N	Dull	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 47° 28', W. 31° 08'	30.03	762.7	69	20.6	52	NNW			5		2		NW	0	0	Mod'ate	NW	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, L. Meyer, N. 38° 22', W. 124° 16'....†	30.00	762.0	50	10.0	86	NW			6		10		NW			Heavy	NW	Overcast	D. A. Joyce.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China.....†	29.88	758.9	83	28.3	87	SE			3		ks		Var.	Heavy	Heavy	Smooth		Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 38° 30', W. 137° 50'....*	30.34	770.6	58	14.4	94	N			4		7		NW	0	0	Mod'ate	N	D. clouds	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lach'an																			
S. S. Oregon, E. Polemann, Portland, Oregon.....†	29.96	761.0	53.0	11.7		NNW			2		0							Clear	J. M. Lachlan. L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, San Francisco, Cal....†	29.94	760.5	52	11.1		SW			2		10		Calm					Cloudy	
S. S. Orizaba, C. B. Johnson, N. 34° 23', W. 119° 40'...†	29.94	760.5	45	7.2		NW			1		Fog		NW	0	0	Smooth	NW	Fair	Harrison & Marshall.
S. S. State of California, G. Dehney, N. 44° 10', W. 124° 20'....†	29.99	761.7	50	10.0		N			3		5		NW			Rough	NW	Fair	
S. S. Victoria, H. M. Haywood, Canal de Haro, N. 48°, W. 123°	30.10	764.5	54	12.2	67	Calm			0		5		NE			Smooth		Fair	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Punta Arenas, Costa Rica†	29.84	757.9	80	26.7	87	Calm			0		5		NE			Smooth		Fair	F. A. Johnston.
§S. S. Australia, S. 34° 50′. E. 175° 30′.....†	29.35	745.5				SSW			6		10					High		Cloudy	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30.05	763.3	54	12.2	87	Calm			0		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 23° 02′, W. 109° 10′...†	29.88	758.9	76	24.4	95	WSW			1		2		NW	0	0	Smooth	SW	Clear	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 41° 38′. E. 154° 32′.....†	30.32	770.1	53	11.7	93	ENE			1		10		NE	0	0	Light	NE	Cloudy	
§S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama.....†	29.95	760.7	79	26.1	100	N			2		5		NE	0	0			Fair	
§S.S. Dakota, H. G. Morse, N. 44° 45′, W. 124° 48′...†	30.01	762.2	54	12.2	80	NNW			3		8		N	0	0	Heavy	NW	Cloudy	
§S.S. Granada, J. M. Cavarly N. 35° 10′, W. 121° 27′...†	29.96	761.0	52	11.1	100	Calm			0		10			0	0	Light	WNW	Cloudy	C. T. Rode.
§S. S. Idaho, E. Alexander, N. 46° 00′ W. 124° 40′...†	30.14	765.5	61	16.1		NW			1		8		Calm	0	0	Smooth	NW	Fair	E. Alexander.
§S.S. Zealandia, R. C. Ghest, S. 13° 57′, W. 170° 18′.....	29.91	759.7	82	27.8		NE			3		5		NE			Smooth	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 47′, W. 53° 22′.....†	29.92	760.0	67	19.4		SSW			3		2		S	0	0	Mod'ate	W	Fine	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell, N. 46° 15′, W. 39° 18′.....†	30.13	765.3	55	12.8		WSW			4		10		SW	Light 2 h'rs	Light 2 h'rs	Mod'ate	WSW	Cloudy	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.00	762.0	77	25.0		NE			1		1		S	1.25	31.7			Clearing	A. R. Mehaffey.
Schr. Adale Fuller, J. Jorgensen, Boston, Mass	29.77	756.1	72	22.2	90	WNW					0							Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 33° 32′, W. 73° 04′ ...†	30.06	763.5	75	23.9		W			3		2		SW	0	0	Long	SE	Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 10° 40′. W. 29° 14′.....*†	30.08	764.0	79	26.1		NNE			4		10		NNE			Smooth	NNE	Clearing	B. F. Woodbury.
Schr. Della Hodgkins, N. 54° 50′, W. 53° 35′.....†	30.21	767.3				E			3		10		E			Long	E	Foggy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 37° 57′, W. 68° 37′.....†	30.07	763.8	74	23.3		WSW			3		8		W	0	0	Rough	WSW	Cloudy	
Iron Cross, W. Randall, N. 29° 40′, W. 75° 34′.....*	30.06	763.5	84	28.9	74	SSE			2		5		E	Heavy	Heavy		FSE	Misty	W. Randall.
British Barque Ivigtut, Adam Smith. N. 40° 38′, W. 69° 50′....*	29.79	756.7				W			4		2		E			Mod'ate	ENE	Clear	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.76	755.9	52	11.1	100	ESE			5		10		E	0	0			Threatening	James S. Garvin.

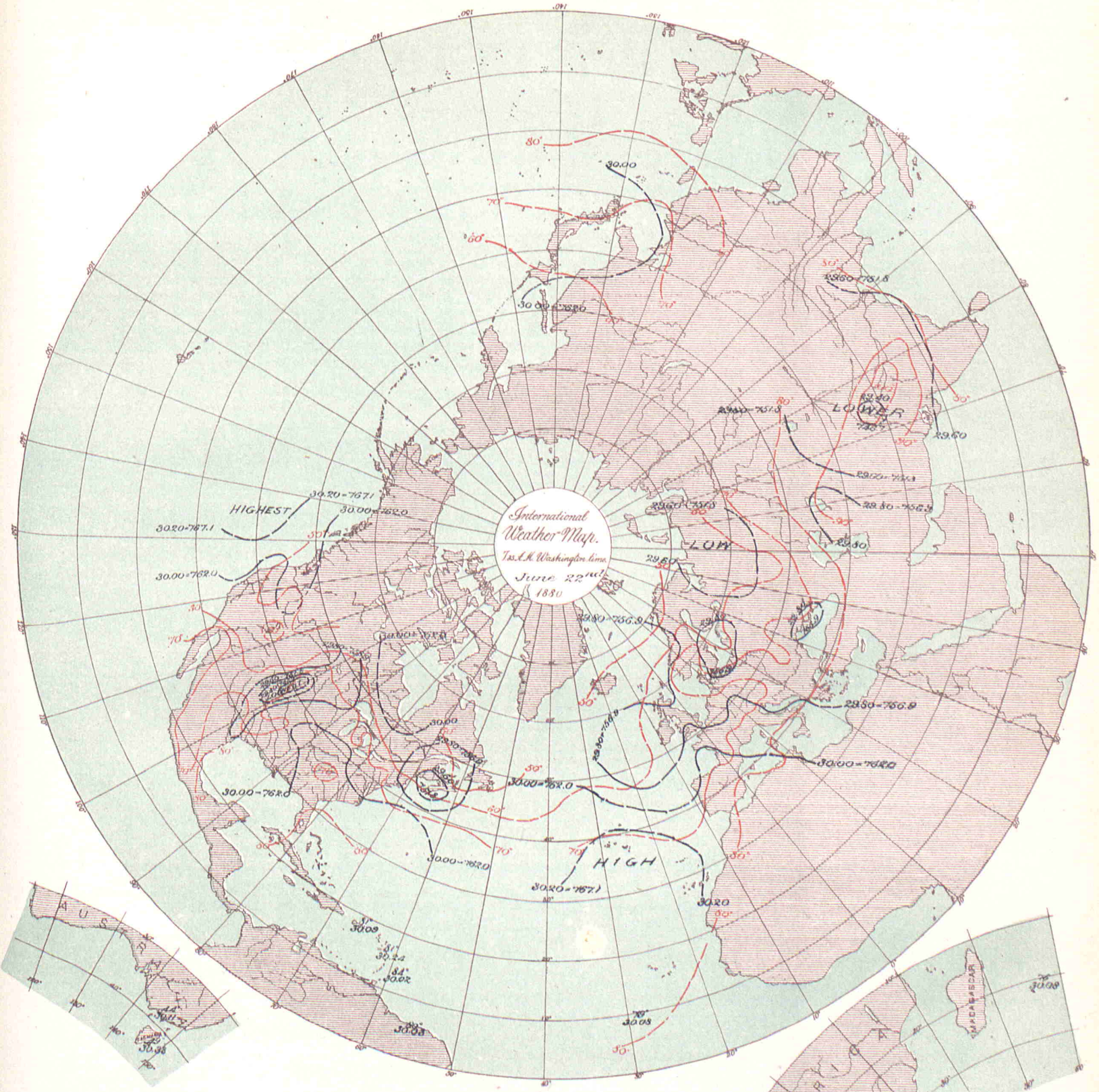
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f. p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D.) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO 211 TREMONT ST. BOSTON

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 23, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.09	764.2	79.2	26.2	66	Calm			0		0			0	0	Clear.	Metge.
Algiers			30.02	762.6	75.2	24.0	70	W			6		2			0	0	Fair	Nicolas.
La Calle			30.06	763.5	72.5	22.5	68	ENE			6		3			0	0	Pretty fair.	Fonfrède.
Tunis			30.02	762.4															Jacques
Sfax			30.10	764.6															Gau.
Saida			30.07	763.7															Charon.
Tebessa			30.02	762.4	91.8	33.2	16	S			8		3			0	0	Pretty fair.	Watrin.
Geriville			30.03	762.8	89.6	32.0	79	NW			2		0			0	0	Clear	Lonchamp.
Laghouat			30.02	762.5	102.9	39.4	11	SSW			6		0			0	0	Clear.	Herlin.
Biskra			30.00	762.0	96.4	35.8	31	E			4		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.39	746.5	29.92	760.0	69.1	20.6	61	E			4		4			0.016	0.4		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.09	738.8	29.82	757.5	74.1	23.4	51	SSE	6.3	2.8			10			0.031	0.8		Dr. Wierzbicki.
Eperies	28.95	735.4	29.80	756.9	68.0	20.0	64	Calm			0		10ks		S	0	0		Julius Mikolik.
Gratz	28.69	728.8	29.90	759.5	70.0	21.1	60	S			2		7			0.370	9.4		Andreas Rospini.
Hermannstadt	28.47	723.0	29.87	758.6	61.3	16.3	95	NW			1		10			0.770	19.55		Prof. A. Gottschling.
Kremsmünster, Observatory	28.56	725.5	29.85	758.3	69.3	20.7	56	WNW			1		2			0.299	7.6		The Staff.
Lemberg	28.80	731.6	29.74	755.4	73.9	23.3	52	S			1		2			0	0		Dr. T. Stanecki.
Pola	29.84	757.9	29.95	760.7	76.6	24.8	52	WSW			1		5			0	0		I.R. Hydrographic Office.
Szathmar	29.37	746.0	29.82	757.3	74.5	23.6	54	SW			3		7			0	0		Pet. Pancsics, S. J.
Szegedin	29.50	750.9	29.83	757.7	74.8	23.8	49	SW			1		6			0.022	0.55		Karl Stancel.
Trieste	29.84	757.9	29.94	760.5	74.1	23.4	61	NW			1		5			0	0		P. Busin.
Vienna	29.19	741.5	29.93	760.1	71.2	21.8	53	W			2		1			0.059	1.5		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau
Brussels	29.61	752.2	29.81	757.1	64.6	18.1	63	W			4	0	8		SW	0.026	0.65		Royal Observatory.
Furnes	29.81	757.2	29.84	757.8	64.9	18.3	80	SW			2		5			0.004	0.1		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:6, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 24, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrument'al error and temperature. Inches.	Barometer. Corrected for instrument'al error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.66	753.4	29.76	755.9	54.7	12.6		E	10	4.5			7			Blank	Blank	D. clouds	W. Boswell.
Ardrossan	29.71	754.6	29.73	755.1	56	13.3		Calm			0		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.49	749.0	29.72	754.9	65.1	18.4		NE	6	2.7			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.74	755.4	63	17.2		NNW	8	3.6			5					D. clouds	John Hartnup.
Bolton (Sharples)	29.19	741.4	29.69	754.1	60.1	15.6		NW	10	4.5			5					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.32	744.7	29.72	754.9	61.7	16.4	78	SW			2		9			0.24	6.1	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	29.98	761.5	30.01	762.2	77	25.0		NE			1		9					Raining	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.63	752.6	29.72	754.9	68.4	20.0		SSW			1		10			Blank	Blank	Overcast	H. Todd.
Cardington			29.72	754.9	71.0	21.7		W			0.4		9					Overcast	John McLaren.
Chatham (School M. E.)	29.64	752.8	29.77	756.1	67.9	19.9		SW			1		8k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.70	754.4	29.74	755.4	54	12.2		NE			2		10					Drizzling	J. Mac Gowan.
Dover	29.75	755.6	29.78	756.4	60	15.6		SW			4		5					½ clouded	J. Costello.
Falmouth (Observatory)	29.56	750.8	29.79	756.7	61.0	16.1		SE			1		9					Overcast	The Staff.
Fort Napier, Natal	28.06	712.7	30.27	768.8	67.4	19.7		NW			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.71	754.6	29.94	760.5	86	30.0		S			1		10					D. clouds	
Galway (Queen's College)			29.70	754.4	65	18.3		SW			3		8					Gloomy	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.01	763.0	30.09	764.3	75.2	24.0		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.51	749.5	29.71	754.6	60.7	15.9		NE			1		10					Foggy	D. G. Maclean.
Great Yarmouth	29.73	755.1	29.74	755.4	60	15.6		WSW			1		6					Drizzling	G. T. Watson.
Greenwich (Royal Obs'y)	29.58	751.3	29.75	755.6	69.8	21.0		SW			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.54	750.3	29.75	755.6	60.7	15.8		ESE			1		6					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	29.97	761.2	30.09	764.3	64	17.8		SW			2	ck				0	0	Fine	M. P. Moyle.
Holyhead	29.72	754.9	29.74	755.4	63	17.2		SW			3		10					Overcast	John Tilston.
Jersey	29.59	749.8	29.81	757.2	60.3	15.7		ESE			2		9					Gloomy	J. Fisher.
Kew (Observatory)	29.73	755.1	29.77	756.1	64.0	17.8		NW	14	6.3			7					Threatening	The Met'g'l Office.
Leicester (Museum)	29.47	748.5	29.72	754.9	61.0	16.1		W			1		10			Blank	Blank	Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.91	759.7	29.98	761.5	78.4	25.8		NW			2		0					Blue sky	A. King.
Nairn	29.64	752.8	29.74	755.4	63	17.2		ENE			2		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.06	763.5	85.0	29.4		SE			2		7					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.55	750.6	29.74	755.4	66.7	19.3		SW			2		7k		NW	0.657	16.69	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.29	741.7	29.70	754.4	68.5	20.2		SW			2		7					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.52	749.8	29.78	756.4	64	17.8		WSW			1		6					Showery	The Staff, for E. J. Stone, Esq.
Plymouth	29.70	754.4	29.78	756.4	63.0	17.2		S			2		10					Overcast	John Merrifield.
*Roche's Point	29.69	754.1	29.81	757.4	67	19.4		SW			4		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.61	752.1	29.77	756.1	59	15.0		SSW			1		5					D. clouds	John C. Walker.
Sandwick Manse, Orkneys			29.80	756.9	57.4	14.1		E	11	4.9			5					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.81	757.2	29.88	758.9	79.0	26.1		NE			2		4					D. clouds	Serg't W. H. Lyne.
Sheffield	29.48	748.8	29.75	755.6	63.4	17.4		W			1		10			0.55	14.0	Overcast	W. F. Cooper.
Silloth Rectory	29.70	754.4	29.73	755.1	62.2	16.8	78	W			1		10			0.020	0.51	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.75	755.6	61.0	16.1		WNW	8	3.6			10			Blank	Blank	Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.56	750.8	29.77	756.4	66.2	19.0		SW			3		7					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.89	758.9	29.81	757.2	65	18.3		N			4		10					Gloomy	W. Newcombe.
Valencia (Observatory)	29.75	755.6	29.77	756.1	61.5	16.4		W	10	4.5			4					D. clouds	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.15	765.8	30.19	766.8	71.5	21.9	52	NNW	6.5	2.9		8	10			0	0	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			30.02	762.5	47.0	8.3	80	NW	2	0.9			10k			0	0	Cloudy	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc't'd			29.75	755.6	62.2	16.8		E			2					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.91	760.5	30.13	765.4	69.9	21.1	70	S	16.0	7.2		4	5	NNW	SSE	0.04	1.0	Squally	C. Meldrum.
Melbourne (Observatory)	29.98	761.5	30.07	763.8	48.0	8.9	76	NE	8	3.6			4			0.01	0.3	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.75	755.6	60	15.6		N			4		Fog			0	0		J. Youngclause.
North Unst, Shetland I's			29.82	757.4				E			4	4	2	E		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—		
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Clonmewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia, N. 48° 47′, W. 39° 30′	2	NNE	Overcast	Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 30 35′, W. 79° 00′	3	SE	D. clouds	Capt. W. Randall.
Ship Lochee, S. 34° 30′, E 26° 50′			Misty	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N 48 25, W. 15 52			Showery	Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 37° 00′, E. 4° 06′			D. clouds	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	L'w'r 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	67.1	19.5	88	SE			1	1cs				0.20	5.	Clear	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.66	753.3	29.71	754.5	67.1	19.5	67	S			2		7						
Fanöe	29.71	754.6	29.73	755.1	59.9	15.5	89	SW			2		10					Raining	
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.85	758.2	29.89	759.3	53.6	12.0	96	SE			2		8						
Thorshavn (Faröe)	29.86	758.4	29.89	759.3	52.2	11.2	86	NE			3		10						
Vestervig	29.60	751.8	29.69	754 2	67.6	19.8	74	W			2		3						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.35	745.4	29.90	759.4	68.0	20	67	S			1		8kn		SW	0.126	3.2	Very cloudy	Collignon, Director.
Amiens, Normal School	29.78	756.5	29.89	759.2	69.8	21	63	S			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.49	749.0	29.74	755.4	55.4	13.0	95					c	7n	E		0.071	1.80		Klein, Commandant.
Avignon, Normal School	29.90	759.5	29.98	761.5	75.6	24.2	49	NW			1		5		SW	0	0	Cloudy	Girand, Director.
Bar-sur-Seine	29.36	745.7	29.90	759.4	68.0	20.0	51	WSW			1		8kn		W	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.58	751.3	29.84	757.8	70.3	21.3	60	SSE			2		5		SSW	0.020	0.50	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.10	739.1	29.96	761.0	70.7	21.5	48	W			1		2		SW	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.75	755.7	29.95	760.7	67.3	19.6	60	WNW			1		8	SW	NW	0.016	0.4	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.08	738.6	29.97	761.2	72.3	22.4	48	S			3		5cn	S	S	0.110	2.8	Cloudy	Marlot, Director.
Bourges, Normal School	29.41	746.9	29.95	760.7	63.7	17.6	82	W			1	ck		W		0	0		M. Gence, Director.
Brest, Naval Observatory	29.43	747.6	29.68	753.8	62.6	17.0	77	ESE			2		8		ESE	0.010	0.25		Ch. de Kermaree, Dir.
Caen, Normal School	29.72	754.8	29.79	756.7	65.5	18.6	75	S			1		5		W	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.47	748.4	29.86	758.4	77.4	25.2	45	E			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.58	751.3	29.89	759.2	68.2	20.1	54	SSW			2		5		SW	0	0	Cloudy	Jadot, Director
Chartres, Normal School	29.34	745.3	29.89	759.3	65.8	18.8	61	SW			1		8		E	0.12	3.		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.56	726.3	29.87	758.7	65.7	18.7	53	W			2		10			0.075	1.9		Alluard, Director.
Commercy, Normal School	29.05	737.9	29.89	759.3	65.8	18.8	54	W			4		kn	W	W	0.110	2.8		Dr. Coullet, Director.
Commune de Gréasque*	28.90	734.1	30.04	763.1	74.5	23.6	36	SW			2		5		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.14	740.1	29.88	758.9	72.0	22.2	58	NW			2	ck				0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.67	753.7	29.88	759.0	61.2	16.2	81	SW			3		5	W	NE	0	0	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.57	751.0	29.87	758.7	63.9	17.7	74	S			2		10			0.240	6.1	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.97	735.9	29.87	758.6	70.7	21.5	56	W			2	2ck			SW			Slightly cl'dy	M. Cadoret, Director
Lorient, Naval Observatory	29.65	753.2	29.76	755.8	62.2	16.8	72	S			8		10		S	0.004	0.10	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.31	744.5	29.90	759.5	75.7	24.3	45	S			1		5kn		NW	0	0	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galsin, Director.
Marseilles, Observatory	29.72	754.8	29.98	761.6	72.7	22.6	47	WSW			1		3		WSW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.84	732.5	29.84	758.0	68.4	20.2	64	SW			1		ks		SW	0.20	5.		Barbier, Director.
Mont-Louis	24.84	630.8	30.07	763.8	59.0	15.0	54	SW	9.4	4.2			6		W	0	0		M. Cave, for Dr. Fines.
Nice	29.93	760.1	29.96	760.9	73.8	23.2	66	SE			2		10	S	SE	0	0	Lightly cov'd	Capt. Boissière, Director.
Nismes, Normal School	29.77	756.1	29.97	761.1	76.5	24.7	49	W			1		2		W	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.84	757.8	29.94	760.4	71.4	21.9	63	NE	9.4	4.2			6	W	W	0	0		Dr. Fines.
Pic du Midi (Plantade) H P	22.50	571.5			45.0	7.2							10		SW	0.146	3.7	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H P																			
Privas, Normal School	28.91	734.4	29.93	760.3	77.0	25	34				1		5			0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.09	637.2			44 6	7.0	94	WSW			6		10			0.225	5.8	Showery	Alluard, Director.
Rochefort, Naval Obs'y	29.92	760.0	29.95	760.8	65.7	18.7	71	W			6		10	W	W	0.35	9.	Raining	Lt E. Devante, Director
Rouen, Normal School	29.75	755.6	29.84	757.8	67.5	19.7	50	SSW			1		5		SW	0.051	1.3	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.71	754.7	29.74	755.5	63.1	17.3	66	SSE			4		8	SSE	SSE	0.069	1.75	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.72	754.8	29.88	759.0	64.9	18.3	63	SSW			1		10		WSW	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	28.91	734.2	29.98	761.6	55.4	13	66	NW			1								T. Huguet, Director
Toulouse, Observatory	29.36	744.1	30.02	762.6	70.2	21.2	58	WNW			4		10			0	0	Covered	B. Baillaud, Dir.
Tours	29.67	753.6	29.87	758.6	66.2	19.0	66	ESE			1		8		SW	0.173	4.4	¾ covered	M. de Tastes.
Versailles, Observatory	29.39	746.5	29.88	759.0	64.8	18.2	60	SW			2					0	0		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S	29.19	741.4	29.87	758.7	77.0	25	44	ESE			1		2			0	0	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	79.2	26.2										0.83	21.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.61	752.0			64.0	17.8	72	SW			1		10		SW	0.031	0.8		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.92	759.9	29.94	760.5	68.5	20.3	97	NE	7.8	3.5			10n		NE	0.087	2.2	Raining	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,206.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,012.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.02	737.0	29.87	758 8	67.3	19.6	60	SW			6		7n	SW		0	0		Prof. Dr. Hoh.
Berlin	29.60	751.9	29.77	756.1	71.6	22.0	49	SW			1		8			0.224	5.7	Rainy	Prof. Dr. Arndt
Breslau	29.34	745.2	29.87	758.6	66.2	19.0	71	W			3		10			0.036	0.92	Rainy	Royal University Obs'y
Carlsruhe	29.47	748.4	29.88	758.9	67.5	19.7	68	SW			2		10	SW		0.114	2.9		Albert Senz.
Cassel	29.21	741.9	29.81	757.2	66.6	19.2	69	W			4		8	SW		0.045	1.14		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.52	749.7	29.88	758.9	67.1	19.5	55	WSW			2		8			Inap.	Inap.		Physical Society.
Friedrichshafen	28.50	723.8	29.89	759.2	66.9	19.4	53	SW			3		5	SW		0.075	1.9		Chief Telegrapher Wilhelm.
Hamburg	29.67	753.7	29.74	755.5	64.0	17.8	78	NNE			3		9			0.189	4.8		Dr. Reinhold Kleeman.
Kiel	29.72	755.0	29 74	755.4	61.9	16.6	87						10			0.640	16.26		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.71	754.5	29.78	756.5	76.3	24.6	43	NE			1		8			0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.43	747.5	29.84	757.8	72.7	22.6	46	SW			3		8	WSW		0.055	1.4		Prof. Dr. Bruhns, Privy Counsel'r
Magdeburg	29.59	751.5	29.81	757.2	70.5	21.4	46	SSW			4		6ks	S		0.035	0.9		Dr. Assmann.
Memel	29.76	755.9	29.81	757.1	69.1	20.6	47	NW			1-2	1c							Reinbrecht & Issermann
Munich	28.11	713.9	29.97	761.1	67.8	19.9	41	Calm			0		6	NE	SW	0	0		Dr. C. Lang.
Neufahrwasser	29.74	755.4	29.76	755.8	68.7	20.4	67	ENE			3		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.35	745.4	29.87	758.7	69.1	20.6	48	W			2		8			0	0		Reallehrer Dicknether.
Posen	29.51	749.5	29.78	756.5	72.3	22.4	54	NW			6		7			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.38	746.3	29.91	759.7	72.1	22.3	54	SSW			3		7	SW		0.028	0.72		Imp. University Observatory.
Stuttgart	28.96	735.5	29.82	757.5	67.1	19.5	62	N					7	W		0.016	0.4		Prof. Dr. Schoder.
Thorn	29.58	751.2	29.76	755.9	70.0	21.1	60	SW			4		9			0.004	0.09		Dr. Cunerth.
Weissenburg (Bavaria)	28.43	722.2	30.01	762.2	66.6	19.2	56	WSW	2.0	0.9			9kn		W	0.020	0.5		Reallehrer J. Hopfner.
Wustrow	29.74	755.4	29.77	756.1	63.7	17.6	75	SW			2		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.: Memel, 2:1, instead of 2:7, p. m.: Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.50	749.3	29.87	758.8	79 9	26.6		E			1.0		5					½ Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published, occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.56	750.8	29.61	752.0	85.2	29.6	76	SW	35.5	15.9			5		W	0	0	Misty	
Deesa	29.09	739.0	29.55	750.5	97.2	36.2	33	SW	16.8	7.5			2	W		0	0	D. clouds	
Bombay	29.68	753.8	29.72	754.8	84.7	29.3	81	WNW	16.0	7.2			8		WNW	0.33	8.4	D. clouds	
Poona (Yarrowda)	27 88	708 1	29.74	755.3	76.0	24.4	69	WSW	17.0	7.6			8		W	0	0	D. clouds	
Belgaum	27.27	692.6	29.84	757.8	69.5	20.8	92	W	6.0	2.7			8	W	W	0.14	3.6	D. clouds	
Lahore	28.82	731.9	29.54	750.3	88.1	31.2	57	E	6.7	3.0			6			0.04	1.0	Misty	
Roorkee	28.69	728.7	29.56	750.9	90.2	32.3	58	NW	5.0	2.2			6			0.43	10.9		
Agra	28.97	735.9	29.51	749.5	100.6	38.1	44	W	4.4	2.0						0	0		
Nagpur	28.55	725.1	29.59	751.5	77.9	25.5	84	Calm	5.1	2.3			10		W	0.68	17.3	Overcast	
Jubbulpore	28.22	716.9	29.55	750.6	89.2	31.8	55	E	4.1	1.8			4			0.50	12.7	D. clouds	
Lucknow	29.15	740 5	29.52	749.9	82.2	27.9	81	NNE	1.7	0.8			10	Calm		0	0	Overcast	
Allahabad	29.22	742.0	29.52	749 7	92.7	33.7	74	Calm	9.0	4.0			6	E		0	0	D. clouds	
Patna	29.43	747 6	29.61	752.2	82.7	28.2	88	ENE	2.8	1.2			10	ENE	ENE	0.34	8.6	Overcast	
Hazaribagh	27.59	700 7	29.58	751.4	78.6	25.9	84	ENE	7.6	3.4			0		E	0.20	5.1	Thunder-storm.	
Cuttack	29.48	748.9	29.57	751.0	81.0	27.2	86	Calm	1.2	0.5			8			0.72	18.3	D. clouds	
Calcutta (Alipore)	29.58	751.4	29.60	751.9	79.4	26.3	92	SE	3.0	1.3			9	S	S	0.16	4.1	Showery	
Goalpara	29.27	743.4	29.67	753 7	80.6	27.0	81	SSW	2.4	1.1			7			1.38	35.0	D. clouds	
Chittagong	29.57	751.1	29.66	753.4	82 9	28.3	87	SSE	5.9	2.6			6			0	0	D. clouds	
Sibsagar	29.34	745.2	29.67	753.6	86.3	30.2	71	NE	2.5	1.1			2			0.23	5.8	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.56	750.7	29.95	760.8	74.8	23.8	49	SW	1.8	0.8			5			0	0		Prof. Giovanni Clodig.
Milan	29.40	746.7	29.90	759.4	76.3	24.6	48	E	4.9	2.2			6	NE		0	0		Prof. Schiaparelli.
Padua	29.85	758.2	29.96	761.0	73.6	23.1	46	SE	8.7	3.9			4	W		0.559	14.2		Prof. Dott. Lorenzoni.
Moncalieri	29.60	736.5	29.87	758.8	72.5	22.5	56	ENE	3.1	1.4			8	NNW		0	0		Prof. P. F. Denza.
Genoa	29.78	756.3	29.97	761.1	69.4	20.8	70	SE	16.1	7.2			6	SE		0	0		Prof. G. M. Garibaldi.
Mondovi	28.04	712.1	29.88	759.0	70.0	21.1	54	SE			4		1			0	0		Prof. D. C. Bruno.
Pesaro	29.90	759.5	29.95	760.7	72.1	22.3	71	NE	12.5	5.6			4	W		0	0		Prof. Luigi Guidi.
Florence	29.71	754.6	29.96	761.0	77.0	25.0	44	SW			2		7	SW		0	0		Cav. F. Meucci.
Leghorn	29.92	760.0	30.01	762.2	73.6	23.1	59	WSW	6.3	2.8			7			0	0		Prof. P. Monte.
Rome	29.81	757.2	29.98	761.6	81.5	27.5	43	W					7			0	0		Prof. P. Tacchini, Dir.
Lecce	29.72	754.9	29.97	761.1	79.3	26.3	59	ENE	3.8	1.7			5	WNW		0	0		Prof. C. De Giorgi.
Cosenza	29.12	739.6	29.97	761.2	80.6	27.0	66	SW	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.80	756.9	29.99	761.8	77.0	25.0	44	S			2		2	W		0	0		Prof. A. Pacinotti.
Palermo	29.81	757.2	30.06	763.5	73.9	23.3	46	E	8.1	3.6			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.93	760.2	29.97	761.3	76.3	24.6	61	E	11.2	5.0			0			0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.48	748.7	29.98	761.6	76.1	24.5	63	E	1.3	0.6			3			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					66.8	19.3	89	NNE	7.5	3.3			10n			0.760	19.30	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.75	755.6	29.94	760.5	69.6	20.9	95	E	1.3	0.6			10n			0.640	16.26	Raining	S. Takehayashi.
Tokei, (Yeddo) Observatory	30.16	766.0	30.23	767.8	62.4	16.9	90	E	3.3	1.5			10s			0	0	Cloudy	The Staff.
Wakayama	30.09	764.3	30.14	765.5	69.6	20.9	80	SSW	1.3	0.6			10n			0.015	0.38	Raining	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the am unt of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Señor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.01	635.3	30.00	762.0	59.0	15.0	73	N			1		9ks		NE	0.02	0.6	Very cloudy	Prof. L. Perez.
Guanaxuato	23.62	600.1			61.3	16.3	92	Calm	0	0		10kn	2kn	NE	NE	0.19	5.0	Covered	Vicente Fernandez.
Leon	24.37	619.0	29.97	761.3	64.0	17.8	84	W			2		10kn			0.27	6.8	Covered	Prof. M. Leal.
Mazatlan	29.66	753.4	29.92	759.9	76.6	24.8	82	Calm			0	2cs	6k		NW	0.06	1.5	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	28.03	584.9	29.96	760.9	57.2	14.0	90	Calm	0	0			10n			0.25	6.3	Covered	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.87	606.3	29.82	757.4	62.8	17.1	84	N			1	2c	4k	NE	NE	0.32	8.1	Fair	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.48	595.2	30.17	766.3	55.2	12.9	48	Calm	0	0		3ck	0	S		0.26	6.7	Clear	Prof. P. Spina.
San Luis Potosi	24.16	613.6	30.04	763.1	63.0	17.2	51	NW			1	3	4	W	E	0	0	Almost cl'd'y	G. Barroeta, M D.
Tlacotalpam	29.83	757.7	29.84	758.0	78.1	25.6	97	S			1	2	6	N	S	0.035	0.9	Threatening	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell.
Zacatecas	22.55	572.7	30.11	764.7	57.2	14.0	91	Calm			0	5c	0	NW		0	0	½ clouded	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.3 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.81	757.1	29.81	757.1	64.4	18.0		W			4					0.252	6.4		
Groningen	29.70	754.3	29.75	755.7	61.5	16.4		NE			1					0.705	17.9		
Helder	29.74	755.4	29.74	755.4	62.6	17.0		SW			1					0.020	0.5		
Hellevoetsluis	29.77	756.2	29.77	756.2	63.5	17.5	78	WSW			3					0.039	1.0		
Utrecht	29.74	755.4	29.79	756.6	57.9	14.4	90	SW			1		10			0.335	8.5	Dull	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.61	752.2	29.67	753.6	68.0	20.0	60	W	12.3	5.5			0			0	0		
Brönø	29.80	756.9	29.84	757.9	47.5	8.6	55	N	18	8			0			0	0		
Christiania	29.47	748.6	29.61	752.1	76.5	24.7	36	SSW	11	5			3			0	0		
Tromsö	29.69	754.2	29.75	755.6	38.8	3.8	80	WNW	9	4			10			0.059	1.5		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.15	765.7	30.35	771.0	70.2	21.2	80	WNW			4		3			0	0		Dr. J. A. Sampaio.
Campo Major	29.11	739.4	30.09	764.3	70.2	21.2	39	WNW	6.9	3.1			7			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.19	766.9	30.28	769.1	71.1	21.7	68	SW	6.3	2.8			10			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.85	758.3	30.21	767.4	67.5	19.7	57	WNW	11.2	5.0			9			0	0		The Staff.
Ponta Delgada (Azores)	30.26	768.7	30.34	770.5	69.4	20.8	58	W	3.8	1.7			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																				
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello—[Costa																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando			29.86	758.4	70.2	21.2		NNW			2		0			1	NNW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.05	763.2	64.4	18.0		WSW			5		2			3	WSW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Feigos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation: no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.59	751.5	29.61	752.0	52.0	11.1	74	W	13	6			9k						Capt. Sseliwerstow.
Astrakhan	29.83	757.6	29.74	755.5	75.4	24.1	43	SW	13	6			10ks						Capt. Wisganow.
Barnaul	29.18	741.1	29.64	752.9	80.8	27.1	44	N	0	0			3					Light clouds	Meteorological Obs.
Dorpat	29.54	750.3	29.77	756.2	70.0	21.1	41	WSW	9	4		7ck							Prof. Dr. Weihrauch.
Ekaterinburg	28.36	720.3	29.26	743.3	70.9	21.6	64	SE	9	4		ck	10cs;n						Meteorological Obs.
Irkutsk																			
Kasan	29.10	739.1	29.36	745.8	55.2	12.9	88	NNW	7	3			10					Light rain	Physical Cabinet.
Kertch	29.85	758.2	29.87	758.7	68.7	20.4	72	N	2	1			0						Lagorio.
Kieff	29.15	740.5	29.76	755.9	72.3	22.4	44	Calm	0	0		c;ck	4ks						Physical Cabinet.
Krotkowo*	29.06	738.1	29.53	750.0	52.7	11.5	96	NNW	2	1			10					Light rain	Cand. Fatjanow.
Lugan	29.51	749.5	29.71	754.6	72.1	22.3	48	SW	4	2			5						Meteorological Obs.
Moscow	29.26	743.3	29.79	756.7	64.2	17.9	39	NNW	13	6			7ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.78	756.5	29.85	758.3	76.8	24.9	48	Calm	0	0			10cs;n						Kurdakof.
Nikolaievsk, on the Amoor	29.64	752.9	29.73	755.1	60.3	15.7	92	SE	11	5			5ks						
Nukuss	29.40	746.8	29.62	752.3	91.6	33.1	35	NNW	2.2	1.0			0						
Orenburg																			
Pekin (China)	29.86	758.4	30.00	762.0	69.8	21.0	78	Calm	0	0			8n						Physical Observatory.
St. Petersburg	29.71	754.5	29.72	754.9	56.7	13.7	63	W	16	7			10kn						Central Physical Obs.
Tashkend	28.23	717.0	29.69	754.0	88.0	31.1		Calm	0	0			0						Teich, A. M.
Tiflis	28.31	719.1	29.66	753.3	75.2	24.0	59	SE	4	2			10s						Physical Observatory.
Vladivostock																			
Warsaw	29.35	745.4	29.74	755.5	78.8	26.0	38	WSW	4	2			3k						Astronomical Obs.
Wilna	29.39	746.4	29.79	756.6	73.0	22.8	28	WNW	4	2			1					Light clouds	Astronomical Obs.
Yeniseisk	29.44	747.7	29.71	754.5	80.2	26.8	52	SE	1	1			9						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.89	759.2	29.99	761.8	76.5	24.7	65	SSW	5.1	2.28			1k			0	0		Antonio Rave, Director.
Bilbao, Met. Obs'y	30.00	762.0	30.06	763.4	71.1	21.7	60	E	2.6	1.14		4	6	N		0.008	0.2	Covered	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.17	690.1			65.1	18.4	59	SW	9.4	4.23			6			0.079	2.0	Cloudy	Domingo Martin y Perez.
Madrid, Royal Observatory	27.82	706.5	29.96	761.0	74.3	23.5	42	SW	26.8	12.00		1	2	W		0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.85	758.1	29.99	761.7	87.8	31.6	35	SSW	4.3	1.92		0	2			0	0	Almost clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.14	740.2	30.02	762.5	65.1	18.4	73	SW	16.1	7.2			7			0.161	4.1	Cloudy	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	29.96	760.9	30.02	762.5	77.2	25.1	84	SE	2.9	1.3		6cs;ck	2ks	SW		1.059	26.9	Fair	Benito Vines, S. J.
Manila, Philippine Islands	29.82	757.5	29.87	758.8	83.1	28.4	75	SE	2.9	1.3			7ck		W	0.053	13.5	Very cloudy	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.08	764.0	30.18	766.5	71.8	22.1	67	W	14.8	6.6		0	1		W	0	0		Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.01	762.2	30.13	764.5	83.1	28.4	80	E	10.5	4.70		2k	3k	E	E	0	0	Clear	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0-10.	Clouds. Amount. Up'er 0-10.	Lo'er 0-10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.67	753.7	29.71	754.7	50.7	10.4	.....	N	.....	.....	4	.....	10	.....	.....	0	0	.....	
Umea	29.68	753.9	29.73	755.2	55.8	13.2	39	E	.....	.....	6	.....	8	.....	.....	0	0	.....	
Hernosand	29.68	753.8	29.73	755.1	59.0	15.0	60	S	.....	.....	2	.....	5	.....	.....	0	0	.....	
Stockholm	29.51	749.5	29.69	754.0	64.4	18.0	62	ENE	.....	.....	6	.....	9	.....	.....	0	0	.....	
Wisby	29.69	754.1	29.75	755.6	66.6	19.2	51	W	.....	.....	2	.....	0	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.58	751.3	29.67	753.5	67.8	19.9	38	ENE	12.1	5.4	.....	.....	3	.....	.....	0	0	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Barque Australia	.....	.....	.....	.....	J. P. Åhlson.
H. M. Corvette Balder	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 34° 42′, W. 15° 30′	.....	.....	.....	Blue sky	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

	28.52	724.4	29.89	759.3	72.0	22.2	42	SW	.....	.....	3	.....	5	.....	.....	0.087	2.2	Cloudy	The Observatory.
Geneva																			
Zurich	28.31	719.2	29.89	759.3	71.6	22.0	51	W	.....	.....	3	.....	4	.....	.....	0.047	1.2	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —2.5 mm.; Thermometer, +0.8 Cent. Relative Humidity, —13 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.89	759.3	71.4	21.9	55	NE	13	6.0	.....	.....	4	.....	NNE	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	30.08	764.1	77.0	25.0	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.77	756.1	84.7	29.3	56	SW	.....	.....	3	.....	3k	.....	SW	0	0	.....	Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	49.0	9.4	.....	NE	5	2.2	.....	.....	10n	.....	.....	0.15	3.8	Raining	Hon. J. Ferguson.
Chatham, N. B.	29.76	755.9	29.82	757.4	48.2	9.0	92	N	15	6.7	.....	.....	10n	.....	.....	0.99	25.1	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.56	750.8	29.60	751.8	52.1	11.2	90	NE	12	5.4	.....	.....	10n	.....	.....	0.600	15.24	Cloudy	H. J. Cundall, C. E
Cornwall, Ontario	29.72	754.9	29.91	759.7	60.2	15.7	88	E	.....	.....	1	.....	10s	.....	.....	Inap.	Inap.	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.70	754.4	29.87	758.7	52.3	11.3	91	SE	.....	.....	1	.....	10k	.....	.....	0.65	16.5	Cloudy	H. A. Johnson.
Father Point, Quebec	29.92	760.0	29.94	760.5	51.6	10.9	90	Calm	0	0	.....	0	Sm'o	.....	.....	0.46	11.7	Smoky	J. McWilliams.
Fredericton, N. B.	29.72	754.9	29.78	756.4	55.0	12.8	75	NE	16	7.2	.....	.....	10s	.....	.....	0.290	5.84	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	28.84	732.5	29.62	752.3	67.0	19.4	72	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	James Stewart.
Granton, Ontario	28.89	733.8	29.94	760.5	72.1	22.3	71	NW	.....	.....	1	0	0	.....	.....	0	0	Clear.	James Grant.
Halifax, N. S.	29.46	748.3	29.59	751.6	62.0	11.1	91	NW	7	3.1	.....	.....	10n	.....	.....	0.010	0.25	Cloudy	A. Allison.
Hamilton, Ontario	29.55	750.6	29.92	760.0	70.7	21.5	81	W	.....	.....	2	0	0	.....	.....	0	0	Clear.	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.61	752.1	29.93	760.2	64.2	17.9	80	S	3	1.3	.....	0	0	.....	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.58	751.3	29.61	752.1	43.2	6.2	97	SE	10	4.5	.....	.....	10n	.....	.....	1.55	39.4	Raining	C. H. Rigby.
Montreal, Quebec	29.76	755.9	29.96	761.0	58.1	14.5	82	E	4	1.8	.....	.....	10s	.....	.....	0	0	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.88	758.9	29.91	759.7	62.5	16.9	82	SE	.....	.....	1	5ck	0	.....	.....	0.18	4.6	Fair	J. R. Nason.
Norwood, Ontario	29.21	741.9	29.88	758.9	67.9	19.9	61	SW	3	1.3	.....	3c	0	.....	.....	0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.20	741.7	29.86	758.4	71.0	21.7	80	S	9	4.0	.....	0	0	.....	.....	0	0	Clear.	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.90	759.4	74.7	23.7	28	E	.....	.....	1	0	0	.....	.....	0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.28	743.7	29.95	760.7	68.1	20.1	90	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	H. Morgan.
Port Stanley, Ontario	29.34	745.2	29.95	760.7	76.9	24.9	65	W	5	2.2	.....	2ck	0	W	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.63	752.6	29.95	760.7	55.0	12.8	85	W	.....	.....	3	0	3s	.....	.....	0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.44	747.8	29.90	759.4	58.0	14.4	94	Calm	0	0	.....	.....	10s	.....	.....	0.08	2.0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.55	750.6	29.71	754.6	52.0	11.1	79	NE	19	8.5	.....	.....	10ks	.....	.....	0.070	1.78	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	29.22	742.2	29.89	759.2	73.1	22.8	71	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear	K. Stewart.
Stratford, Ontario	28.71	729.2	29.93	760.2	70.0	21.1	74	NW	5	2.2	.....	0	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.56	750.8	29.61	752.1	44.2	6.8	98	NE	3	1.3	.....	.....	10n	.....	.....	0.87	22.1	Raining	T. C. Hill, C. E.
Toronto, Ontario	29.55	750.6	29.92	760.0	66.5	19.2	73	NE	2	0.9	.....	0	0	.....	.....	0.03	0.8	Clear.	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.90	734.0	29.91	759.7	73.5	23.1	74	SW	9	4.0	.....	1ck	0	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.58	751.3	29.64	752.8	51.6	10.9	94	N	21	9.4	.....	3ck	5s	NW	.....	Inap.	Inap.	Light rain	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.74	755.4	30.00	762.0	42	5.6	100	E	2	0.9	.....	.....	10	.....	.....	0.03	0.8	Light rain	John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.65	753.1	44.6	7.0	.....	NE	.....	.....	4	.....	.....	.....	.....	1.22	31.0	.....	The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR.

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.90	759.4	29.98	761.5	66	18.9	59	S	2	0.9		10k	0	NW		0	0	Cloudy	
Alpena, Michigan	29.28	742.4	29.83	757.7	74	23.3	59	SW	10	4.5		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.91	734.3	30.00	762.0	75	23.9	59	E	3	1.3		10k	0	Calm		0	0	Cloudy	
Atlantic City, New Jersey	30.00	762.0	30.00	762.0	70	21.1	61	N	8	3.6		0	0			0.18	4.6	Clear	
Augusta, Georgia	29.90	759.9	30.09	764.3	75	23.9	81	Calm			0	2cs	7s;hz'	NW	Calm	0	0	Fair	
Baltimore, Maryland	29.96	761.0	30.01	762.2	75	23.9	68	E	6	2.7		0	Haze		Calm	0	0	Fair	
Barnegat, New Jersey	29.96	761.0	29.98	761.5	68	20.0	60	N	7	3.1		8ck	0	N		0	0	Fair	
Bismarck, Dakota	28.04	712.2	29.89	759.2	61	16.1	71	NW	5	2.2		0	0			0	0	Clear	
Boerne, Texas	28.43	722.1	29.71	754.6	62	16.7	88	Calm	0	0		0	0			0	0	Clear	
Boise City, Idaho	27.13	689.1	30.09	764.3	57	13.9	44	E	3	1.3		5cs	0	NW		0	0	Fair	
Boston, Massachusetts	29.76	755.9	29.90	759.4	64	17.8	53	NW	11	4.9		Haze	0	Calm		0	0	Clear	
Brackettville, Texas	28.71	729.2	29.71	754.6	73	22.8	67	E	4	1.8		0	0			0	0	Clear	
Breckenridge, Minnesota	28.78	731.0	29.72	754.9	63	17.2	94	S	6	2.7			10s		S	1.47	37.3	Cloudy	
Brownsville, Texas	29.80	756.9	29.85	758.2	77	25.0	77	S	2	0.9		2k	0	Calm		0	0	Clear	
Buffalo, New York	29.23	742.4	29.90	759.4	69	20.6	90	SW	6	2.7		1k	Haze	Calm	Calm	Inap.	Inap.	Clear	
Burkes, Arizona					74	23.3	29	Calm			0	2c	0	Calm		0	0	Clear	
Burlington, Vermont	29.69	754.1	29.97	761.2	61	16.1	66	NE	1	0.4		5ck	2s	NW	NE	0	0	Fair	
Cairo, Illinois	29.66	753.4	30.03	762.7	80	26.7	70	Calm	0	0		2c	Haze	Calm		0	0	Fair	
Campo, California	27.34	694.4	29.91	759.7	37	2.8	71	SW	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.01	762.2	30.01	762.2	77	25.0	65	W	16	7.2		5cs	0	SW		0	0	Fair	
Cape Henry, Virginia	29.96	761.0	29.97	761.2	77	25.0	69	W	10	4.5		2cs	0	Calm		0	0	Clear	
Cape Lookout, N. Carolina	30.03	762.7	30.04	763.0	75	23.9	81	W	16	7.2		2c	Haze	Calm	Calm	0	0	Fair	
Cape May, New Jersey	29.95	760.7	29.98	761.5	69	20.6	65	NE	7	3.1		2k	2s	N	NW	0.45	11.4	Cloudy	
Castroville, Texas	29.08	738.6	29.76	755.9	67	19.4	74	NW	3	1.3		0	0			0	0	Clear	
Cedar Keys, Florida	30.03	762.7	30.06	763.5	77	25.0	82	SE	11	4.9			10ks		E	0.07	1.8	Cloudy	
Charleston, South Carolina	30.01	762.2	30.06	763.5	77	25.0	61	Calm	0	0		0	0			0	0	Clear	
Charlotte, North Carolina	29.21	741.9	29.98	761.5	77	25.0	49	SW	5	2.2		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.28	743.7	30.04	763.0	73	22.8	72	W	1	0.4		1cs	Sm'e	Calm	Calm	0	0	Clear	
Cheyenne, Wyoming	24.05	610.9	29.99	761.7	56	13.3	40	NW	6	2.7		0	0			0	0	Clear	
Chicago, Illinois	29.27	743.4	29.92	760.0	77	25.0	61	SW	2	0.9		0	0			0	0	Clear	
Chincoteague, Virginia	29.97	761.2	29.99	761.7	72	22.2	90	E	16	7.2		2cs	Haze	Calm	Calm	0	0	Fair	
Cincinnati, Ohio	29.43	747.5	30.06	763.5	72	22.2	76	E	2	0.9		0	Sm'e		Calm	0	0	Clear	
Cleveland, Ohio	29.29	744.0	29.98	761.5	75	23.9	64	SW	4	1.8		1k	0	W		0	0	Clear	
Coleman City, Texas	28.13	714.5	29.74	755.4	67	19.4	79	E	4	1.8		0	0			0	0	Clear	
Columbus, Ohio	29.20	741.7	29.99	761.7	74	23.3	68	NW	2	0.9		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	28.01	711.4	29.62	752.3	70	21.1	66	SW	1	0.4		0	0			0	0	Clear	
Corsicana, Texas	29.44	747.8	29.88	758.9	72	22.2	80	E	4	1.8		0	2ks		Calm	0	0	Clear	
Davenport, Iowa	29.32	744.7	29.92	760.0	75	23.9	68	SW	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					54	12.2	67	NE			1	0	0			0	0	Clear	
Deadwood, Dakota	25.37	644.4			56	13.3	63	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.76	730.5	29.88	758.9	75	23.9	77	NE	5	2.2		0	0			0	0	Clear	
Delaware Breakwater, Del.	29.96	761.0	29.99	761.7	70	21.1	66	NE	10	4.5		2ck	5s	W	NE	0	0	Fair	
Denison, Texas	29.15	740.4	29.91	759.7	73	22.8	81	E	2	0.9		2c	0	SW		0	0	Fair	
Denver, Colorado	24.77	629.2	29.99	761.7	60	15.6	49	S	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	29.03	737.3	29.86	758.4	74	23.3	59	SW	4	1.8		5c	0	W		0	0	Fair	
Detroit, Michigan	29.31	744.5	29.95	760.7	70	21.1	70	W	3	1.3		2k	Haze	W	Calm	0	0	Clear	
Dodge City, Kansas	27.38	695.4	29.58	751.3	66	18.9	74	SW	4	1.8			10n		Calm	0.10	2.5	Light rain	
Dubuque, Iowa	29.23	742.4	29.88	758.9	74	23.3	59	SW	7	3.1		Haze	Haze	Calm	Calm	0	0	Hazy	
Duluth, Minnesota	29.09	738.9	29.73	755.1	68	20.0	84	W	9	4.0		1k	0	W		0.23	5.8	Clear	
Eagle Pass, Texas	29.06	738.1	29.75	755.6	78	25.6	46	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.65	753.1	29.71	754.6	52	11.1	79	N	20	8.9			10s		N	0.19	4.8	Clearing	
Edinburg, Texas					74	23.3	86	S			1	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.26	743.2	29.94	760.5	77	25.0	61	SW	4	1.8		0	0			0	0	Clear	
Escanaba, Michigan	29.18	741.1	29.80	756.9	72	22.2	71	S	8	3.6		2k	0	SW		0	0	Clear	
Florence, Arizona	28.29	718.6	29.89	759.2	78	24.4	52	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.00	635.0	30.45	773.4	55	12.8	68	SE	3	1.3		0	5s		Calm	0	0	Fair	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.81	706.4	29.59	751.6	55	12.8	73	S	5	2.2		2c	0	NW		0	0	Clear	
Fort Custer, Montana	26.73	678.9			57	13.9	74	NW	4	1.8			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.16	639.0	30.12	765.0	63	17.2	72	W	4	1.8		0	0			0	0	Clear	
Fort Elliot, Texas	26.90	683.2	29.05	737.9	63	17.2	67	SE	8	3.6		5k	0	SE		0	0	Fair	
Fort Gibson, Indian Ter.	29.41	747.0	29.93	760.2	70	21.1	70	E	4	1.8		1c	0	E		0	0	Clear	
Fort Grant, Arizona	25.17	639.3	29.97	761.2	69	20.6	52	E	3	1.3		0	0			0	0	Clear	
Fort Griffin, Texas	28.66	728.0	29.89	759.2	65	18.3	75	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.21	691.1			56	13.3	62	SW	6	2.7		0	0			0	0	Clear	
Fort McKavett, Texas	27.65	702.3	29.50	749.3	67	19.4	55	Calm	0	0		1ck	0			0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.73	729.7	29.79	756.7	70	21.1	66	NE	5	2.2		0	0			0	0	Clear	
Fort Stevenson, Dakota	27.98	710.7			56	13.3	74	SW	2	0.9		0	0			0	0	Clear	
Fort Verde, Arizona					63	17.2	83	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.77	756.1	29.82	757.4	72	22.2	85	W	1	0.4			10ks		W	0.46	11.7	Cloudy	
Grand Haven, Michigan	29.30	744.2	29.91	759.7	77	25.0	65	S	8	3.6		2k	0	S		0	0	Clear	
Helena, Montana					56	13.3	57	W	1	0.4		2cs	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.26	743.2	30.00	762.0	77	25.0	73	Calm	0	0		0	0			0	0	Clear	
Indianola, Texas	29.83	757.7	29.86	758.4	73	22.8	81	W	13	5.8		5ck	1s	Calm	Calm	0.02	0.5	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.05	63.3	30.07	763.8	79	26.1	74	NE	2	0.9		5cs	0	Calm		0	0	Fair	
Keokuk, Iowa	29.32	744.7	29.90	759.4	78	25.6	61	SW	7	3.1		6cs;k	0	SW		0	0	Fair	
Key West, Florida	30.00	762.0	30.01	763.0	82	27.8	83	E	7	3.1		8k	0	SE		0.27	6.9	Cloudy	
Kittyhawk, North Carolina	29.98	761.5	30.01	762.2	75	23.9	64	W	15	6.7		8c	0	W		0	0	Cloudy	
Knoxville, Tennessee	29.10	739.1	30.06	763.5	73	22.8	65	N	1	0.4		8c	0	Calm		0	0	Fair	
La Crosse, Wisconsin	29.09	738.9	29.78	756.4	74	23.3	63	S	8	3.6		0	5s		S	0	0	Fair	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	64	17.8	78	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.40	746.7	29.72	754.9	80	26.7	66	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.09	738.9	29.89	759.2	74	23.3	63	S	4	1.8		1cs	0	SW		0	0	Clear	
Lewiston, Idaho	29.18	741.1	29.81	757.2	56	13.3	62	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.07	753.6	29.97	761.2	72	22.2	90	Calm	0	0		5ck	0	E		0	0	Fair	
Los Angeles, California	29.61	752.1	29.94	760.5	57	13.9	87	SW	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.47	748.5	30.01	762.2	72	22.2	71	N	4	1.8		1c	Sm'e	Calm	Calm	0	0	Clear	
Lynchburg, Virginia	29.35	745.5	30.00	762.0	77	25.0	65	Calm	0	0		Haze	Sm'e			0	0	Dense smoke	
Madison, Wisconsin	28.93	734.8	29.88	758.9	71	21.7	66	S	12	5.4		0	0			0	0	Clear	
Marquette, Michigan	29.08	738.6	29.72	754.9	78	25.6	57	SW	11	4.9		0	0			0.02	0.5	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.26	717.8	29.96	761.0	66	18.9	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.72	754.9	30.04	763.0	76	24.4	73	E	5	2.2	.....	8cs	2s	Calm	SE	0	0	Cloudy	
Milwaukee, Wisconsin	29.20	741.7	29.88	758.9	78	25.6	57	SW	10	4.5	.....	1ck	Haze	Calm	.....	0	0	Clear	
Mobile, Alabama	29.92	760.0	29.96	761.0	74	23.3	90	E	5	2.2	.....	.....	10s	.....	SE	0.65	16.5	Cloudy	
Montgomery, Alabama	29.81	757.2	30.04	763.0	74	23.3	85	E	5	2.2	.....	.....	10s	.....	E	0.05	1.3	Cloudy	
Morgantown, West Virginia	29.05	737.9	30.00	762.0	73	22.8	72	Calm	0	0	.....	1c	0	Calm	.....	0	0	Clear	
Mt Washington, N. H.	23.72	602.5	30.08	764.0	37	2.8	90	NW	38	17.0	.....	8c	2s;sm	NW	NW	0	0	Cloudy	
Nashville, Tennessee	29.52	749.8	30.04	763.0	74	23.3	63	Calm	0	0	.....	2ck	Sm'e	Calm	Calm	0	0	Fair	
New Haven, Connecticut	29.85	758.2	29.96	761.0	71	21.7	53	NW	6	2.7	.....	0	2cs	.....	Calm	0	0	Clear	
New London, Connecticut	29.89	759.2	29.94	760.5	71	21.7	49	N	4	1.8	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.87	758.7	29.93	760.2	77	25.0	72	E	1	0.4	.....	8c	Sm'e	SW	Calm	0.22	5.6	Fair	
Newport, Rhode Island	29.88	758.9	29.93	760.2	66	18.9	54	NW	8	3.6	.....	1c	0	Calm	.....	0	0	Clear	
New River, North Carolina	.....	.....	.....	.....	74	23.3	76	NW	.....	.....	1	Haze	Haze	Calm	Calm	.....	.....	Light haze	
New York, New York	29.82	757.4	29.99	761.7	67	19.4	55	NW	2	0.9	.....	2ck	Haze	W	Calm	0	0	Hazy	
Norfolk, Virginia	29.92	760.0	29.98	761.5	81	27.2	48	NE	1	0.4	.....	1c	Haze	Calm	Calm	0	0	Clear	
North Platte, Nebraska	26.99	685.5	29.43	747.5	66	18.9	74	SW	6	2.7	.....	10cs	0	S	.....	0	0	Cloudy	
Olympia, Washington Ter.	29.95	760.7	29.98	761.5	48.0	8.9	93	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	28.74	730.0	29.78	756.4	72.5	22.5	65	S	8	3.6	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.66	753.4	29.97	761.2	63	17.2	72	S	4	1.8	.....	2ck	2s	NW	NW	0	0	Fair	
Pembina, Dakota	28.83	732.3	29.61	752.1	64	17.8	83	SW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pensacola, Florida	29.93	760.2	29.96	761.0	76	24.4	86	E	23	10.3	.....	.....	10s	.....	E	1.04	26.4	Cloudy	
Philadelphia, Pennsylvania	29.96	761.0	30.01	762.2	71	21.7	49	NE	9	4.0	.....	2ck	Haze	NW	Calm	0	0	Fair	
Phœnix, Arizona	28.67	728.2	30.34	770.6	89	31.7	30	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.95	455.9	30.16	766.1	36	2.2	61	NW	6	2.7	.....	1k	0	Calm	.....	0.03	0.8	Clear	
Pilot Point, Texas	29.15	740.4	29.97	761.2	71	21.7	80	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Pioche, Nevada	24.02	610.1	29.79	756.7	56	13.3	29	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.22	742.2	30.00	762.0	69	20.6	85	Calm	0	0	.....	0	Fog	.....	.....	0	0	Clear	
Port Huron, Michigan	29.30	744.2	29.92	760.0	74	23.3	63	W	6	2.7	.....	8k	Haze	W	.....	0	0	Fair	
Portland, Maine	29.81	757.2	29.86	758.4	63	17.2	57	NW	12	5.4	.....	2cs	0	NW	.....	0	0	Clear	
Portland, Oregon	29.88	758.9	29.95	760.7	56	13.3	81	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Portsmouth, North Carolina	.....	.....	.....	.....	76	24.4	69	W	16	7.2	.....	0	Haze	.....	Calm	0	0	Light haze	
Prescott, Arizona	24.74	628.1	30.10	764.5	60	15.6	29	S	2	0.9	.....	2k	0	S	.....	0	0	Clear	
Punta Rassa, Florida	30.02	762.5	30.03	762.7	79	26.1	87	SE	14	6.3	.....	.....	10n	.....	SE	0.05	1.3	Light rain	
Red Bluff, California	29.52	749.8	29.87	758.7	62.0	16.7	67	S	3	1.3	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.67	753.6	29.88	758.9	77	25.0	73	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.32	744.7	29.91	759.7	69	20.6	70	W	4	1.8	.....	0	Haze	.....	.....	Inap.	Inap.	Clear	
Roseburg, Oregon	29.38	746.2	29.94	760.5	51	10.6	86	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.78	756.4	29.86	758.4	54	12.2	80	SE	7	3.1	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.43	747.5	29.98	761.5	75	23.9	77	S	1	0.4	.....	1c	Sm'e	Calm	.....	0	0	Fair	
St. Paul, Minnesota	28.95	735.3	29.73	755.1	68	20.0	79	S	7	3.1	.....	2c	0	SW	.....	0.35	8.9	Clear	
Salt Lake City, Utah	28.58	649.7	29.91	759.7	60	15.6	29	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.18	741.1	29.85	758.2	72	22.2	67	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.89	759.2	29.96	761.0	62	16.7	72	N	2	0.9	.....	.....	10s	.....	N	0	0	Cloudy	
Sandusky, Ohio	29.34	745.2	29.97	761.2	75	23.9	64	SW	5	2.2	.....	5ck	0	SW	.....	0	0	Fair	
Sandy Hook, New Jersey	29.95	760.7	29.99	761.7	66	18.9	69	NW	9	4.0	.....	5ck	0	N	.....	0	0	Fair	
San Francisco, California	29.90	759.4	29.96	761.0	53	11.7	86	S	8	3.6	.....	.....	10s;fg	.....	SW	0	0	Cloudy	
Santa Fé, New Mexico	23.24	590.3	29.78	756.4	55	12.8	36	Calm	0	0	.....	0	0	.....	.....	0.02	0.5	Clear	
Savannah, Georgia	29.99	761.7	30.08	764.0	80	26.7	82	Calm	0	0	.....	2c	Haze	Calm	Calm	0	0	Fair	
Shreveport, Louisiana	29.68	753.9	29.89	759.2	72	22.2	85	E	4	1.8	.....	0	2s	.....	Calm	0.25	6.3	Fair	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.05	763.3	30.08	764.0	76	24.4	82	SW	3	1.3	.....	1k	0	Calm	.....	0	0	Clear	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.36	745.7	30.00	762.0	75	23.9	56	S	4	1.8	.....	2ck	0	W	.....	0	0	Clear	
Springfield, Massachusetts	29.83	757.7	29.95	760.7	71	21.7	53	S	2	0.9	.....	5cs	0	N	.....	0	0	Fair	
Stockton, Texas	26.86	682.2	29.86	758.4	73	22.8	46	S	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.82	757.4	29.87	758.7	64	17.8	73	NW	13	5.8	.....	5cs	Haze	NW	.....	0	0	Fair	
Toledo, Ohio	29.32	744.7	29.97	761.2	78	25.6	65	W	6	2.7	.....	0	Sm'e	.....	Calm	0	0	Clear	
Tucson, Arizona	27.40	696.0	29.95	760.7	82	27.8	39	S	1	0.4	.....	0	2s	.....	Calm	0	0	Fair	
Umatilla, Oregon	29.62	752.3	30.10	764.5	59	15.0	59	SE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	28.97	735.8	29.75	755.6	74	23.3	63	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.71	754.6	29.96	761.0	74	23.3	86	E	6	2.7	.....	1c	2s	Calm	SE	0.35	8.9	Fair	
Virginia City, Montana	24.30	617.2	29.78	756.4	44	6.7	52	SE	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.46	748.3	29.83	757.7	54.5	12.5	78	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C.	29.89	759.2	30.00	762.0	76	24.4	73	NE	1	0.4	.....	0	Sm'e	.....	Calm	0	0	Dense smoke	
Wickenburg, Arizona	.....	.....	.....	.....	71	21.7	33	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	29.98	761.5	30.06	763.5	77	25.0	73	W	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	50	10.0	39	NE	16	7.2	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	29.86	758.4	29.90	759.4	64	17.8	63	NW	12	5.4	.....	1cs	0	NE	.....	0	0	Clear	
Yanktoa, Dakota	28.59	726.2	29.81	757.2	72	22.2	62	Calm	0	0	.....	.....	10ks	.....	Calm	0.26	6.6	Cloudy	
Yuma, Arizona	29.58	751.3	29.72	754.9	69	20.6	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6	.....	.....	54.0	12.2	85	Calm	0	0	.....	5k	2ks	.....	.....	0.02	0.5	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	29.98	761.5	30.03	762.7	77	25.0	80	Calm	0	0	.....	8cs	0	Calm	.....	1.07	27.2	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.03	762.7	30.04	763.0	75.5	24.2	80	Calm	0	0	.....	5c	0	S	.....	0	0	Fine	Maxwell Hall.
Navassa, W. I.	29.94	760.5	30.02	762.5	80	26.7	75	E	5	2.2	.....	5ck	5s	SE	E	0.07	1.8	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.08	762.7	79	26.1	87	E	.....	.....	3	5ck	7ks	E	.....	0	0	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.37	746.0	29.92	760.0	75	23.9	94	Calm	.....	.....	0	.....	Fog	.....	.....	0	0	.....	Francesco J. Cisneros.
§ Rivas, Nicaragua	.....	.....	.....	.....	75	24	.....	ESE	.....	.....	.....	4ck	6	WNW	SSE	2.48	63.	.....	Earl Flint.
Santiago de Cuba, W. I.	30.05	763.5	30.07	763.8	82	27.8	74	Calm	0	0	.....	8c	2k	.....	.....	0	0	.....	Robert Mason.
St. Thomas, W. I.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gyllich.
York Factory, B. A.	30.02	762.5	30.07	763.8	46.0	7.8	96	SW	8	3.6	.....	1c	1s	S	S	0	0	Fair	J. Fortescue & W. Woo

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,500 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,130.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.86 in., or 119.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	29.99	761.7	78	25.6	86	SE	5	2.2	.....	.....	10	.....	SE	.....	.....	.....	.....	Threatening	
§ Navy Yard, Portsmouth, N. H.	29.86	758.4	62	16.7	66	NW	5	2.2	.....	.....	2	.....	.....	0	0	.....	.....	Fair	
Naval Hospital, Yokohama, Japan	30.22	767.6	67	19.4	81	E	.....	.....	1	c	10s	.....	SW	0	0	.....	.....	Lightly cov'd	
§ Adams, S. 5° 06′, W. 81° 45′	30.06	763.5	66	18.9	94	SSE	.....	.....	1	.....	10	.....	SSE	.....	.....	.....	.....	Cloudy	
§ Alaska, S. 12° 01′, W. 77° 04′ *	30.03	762.7	62	16.7	88	Calm	.....	.....	0	.....	10	.....	.....	.....	.....	Long	SW	Cloudy	
§ Alert, N. 31° 55′, E. 139° 44′	29.95	760.7	74	23.3	90	ENE	.....	.....	6	.....	8	.....	ENE	0	0	Mod'ate	ENE	Cloudy	
§ Alliance, N. 46° 40′, W. 55° 50′	29.65	753.1	46	7.8	100	E	.....	.....	5	.....	10	.....	Calm	Heavy	Heavy	Smooth	E	Rainy	
§ Ashuelot, Nagasaki, Japan	30.00	762.0	71	21.7	95	N	.....	.....	1	.....	10	.....	Calm	0	0	None	.....	Overcast	
§ Colorado, New York, N. Y.	29.97	761.2	67	19.4	55	NNW	1.5	0.7	.....	.....	2	.....	NW	.....	.....	.....	.....	Foggy	
§ Constellation, N. 39° 43′, W. 73° 42′	29.86	758.4	68	20.0	74	NNE	.....	.....	3	.....	2	.....	NNW	.....	.....	Smooth	.....	Fair	
§ Constitution, Navy Yard, Brooklyn, N.Y.	29.96	761.0	67	19.4	64	NNW	1	0.4	.....	.....	2	.....	Calm	.....	.....	.....	.....	Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	29.93	760.2	74	23.3	76	WSW	3.6	1.6	.....	.....	5	.....	NW	0	0	.....	.....	Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.94	760.5	52	11.1	??	SW	3.6	1.6	.....	.....	10	.....	.....	0	0	.....	.....	Overcast	
§ Jamestown, Sitka, Alaska *	29.97	761.2	47	8.3	92	S	.....	.....	2	.....	10	.....	S	.....	.....	Mod'ate	S	Light rain	
§ Kearsarge, Boston, Mass	29.93	760.2	64	17.8	58	W	.....	.....	2	.....	2	.....	W	.....	.....	Smooth	.....	Clear	
§ Lackawana, N. 7° 20′, W. 80° —′ †	30.06	763.5	80	26.7	82	NNE	.....	.....	3	.....	8	.....	NNE	.....	.....	Smooth	NNE	Fair	
§ Marion, S 46° 01′, W. 56° 09′	29.96	761.0	47	8.3	100	Calm	.....	.....	0	.....	10	.....	.....	0	0	Smooth	E	Cloudy	
§ Michigan, Erie, Pa.	29.90	759.4	72	22.2	76	SW	.....	.....	2	.....	0	.....	.....	.....	.....	.....	.....	Clear	
§ Minnesota, Newburgh, N. Y. *	29.88?	758.9?	70	21.1	75	SSW	.....	.....	1	.....	2	.....	Calm	.....	.....	.....	.....	Clear	
§ Monocacy, Chefoo, China	30.03	762.7	70	21.1	95	S	.....	.....	0–1	.....	8	.....	.....	.....	.....	.....	.....	Cloudy	
§ New Hampshire, Port Royal, S. C.	30.09	764.3	79	26.1	86	Calm	0	0	.....	.....	1	.....	Calm	0	0	.....	.....	Clear	
Nipsic, N. 39° 20′, E. 27° 22′	29.91	759.7	78	25.6	69	NW	.....	.....	4	.....	5	.....	NW	.....	.....	Long	NW	D. clouds	
§ Onward, Chimbote, Peru	29.99	761.7	62	16.7	88	NNE	.....	.....	1	.....	5	.....	NW	.....	.....	Long	W	Fair	
§ Palos, Shanghai, China	29.99	761.7	70	21.1	95	NNE	.....	.....	1	.....	10	.....	.....	.....	.....	.....	.....	Drizzling	
§ Passaic, Washington, D. C.	29.96	761.0	74	23.3	90	Calm	.....	.....	0	.....	0	.....	.....	0	0	.....	.....	Clear	
§ Pensacola, N. 40° 28′, W. 124° 40′	29.82	757.4	50	10.0	93	SE	.....	.....	2	.....	2	.....	.....	.....	.....	Long	NW	Misty	
§ Portsmouth, N. 36° 19′, W. 34° 30′	30.32	770.1	72	22.2	71	SE	.....	.....	2	.....	1	.....	SW	.....	.....	Long	SW	Clear.	
§ Powhatan, New York, N. Y.	29.97	761.2	64	17.8	88	NNW	.....	.....	2	.....	2	.....	NW	.....	.....	.....	.....	Fair	
§ Quinnebaug, Stockholm, Sweden.	29.66	753.4	66	18.9	68	E	.....	.....	2	.....	8	.....	W	.....	.....	Smooth	.....	Cloudy	
§ Richmond, Kobe, Japan	30.15	765.8	72	22.2	90	ENE	.....	.....	3	.....	10	.....	ENE	0	0	Smooth	.....	Cloudy	
Rio Bravo, Brownsville, Texas. †	30.07	763.8	73	22.8	95	S	1	0.4	.....	.....	5	.....	Calm	0	0	.....	.....	Fair	
§ Saratoga, Naples, Italy	29.98	761.5	76	24.4	64	SW	.....	.....	3	.....	2	.....	W	0	0	.....	.....	Hazy	
§ Shenandoah, Buenos Ayres, Argentine Republic.	29.92	760.0	59	15.0	94	NNE	.....	.....	4	.....	8	.....	.....	.....	.....	Mod'ate	E	Fair	
§ St. Louis, League Island, Pa.	29.98	761.5	71	21.7	85	Calm	0	0	.....	.....	0	.....	.....	0.03	0.8	.....	.....	Clear	
Swatara, N. 22° 15′, E 114° 36′ †	29.88	758.9	83	28.3	63	SE	.....	.....	2	.....	2	.....	SE	.....	.....	Smooth	.....	Clear	
§ Tennessee, New York, N. Y.	29.99	761.7	68	20.0	60	NW	.....	.....	1	.....	5	.....	Calm	.....	.....	Smooth	.....	Fair	
§ Ticonderoga, Nagasaki, Japan	29.93	760.2	72	22.2	100	NNE	.....	.....	1	.....	10	.....	Calm	.....	.....	Smooth	.....	Rainy	
§ Trenton, N. 40° 04′, W. 11° 58′	30.18	766.6	72	22.2	62	W	.....	.....	3	.....	5	.....	.....	0	0	None	.....	Cloudy	
§ Vandalia, Boston, Mass.	.....	.....	62	16.7	88	WNW	.....	.....	2	.....	2	.....	Calm	.....	.....	.....	.....	Fair	
§ Wabash, Boston, Mass.	29.90	759.4	62	16.7	56	NW	10	4.5	.....	.....	2	.....	.....	0	0	.....	.....	Fair	
§ Wachusett, Valparaiso, Chili	29.92	760.0	58	14.4	94	NNE	.....	.....	3	.....	10	.....	N	.....	.....	Long	N	Cloudy.	
Wyoming, Gibraltar, Mediterranean	30.11	764.8	69	20.6	75	SSW	.....	.....	3–4	.....	2	.....	S	.....	.....	Mod'ate	S	Clear.	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.16 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer																			
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 47° 48′, W. 30° 42′	29.96	761.0	62	16.7	88	WSW			7		8		W	Mod'ate	Mod'ate	Mod'ate	WSW	Cloudy	
S. S. Ohio, Henry Morrison N. 39° 45′, W. 50° 21′ †	29.91	759.7	71	21.7	??	SW			3		10		SW	1 h'r	1 h'r	Mod'ate	SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger, N. 34° 11′, W. 119° 25′ †	29.98	761.5	55	12.8	93	W			3		5		WNW	0	0	Gentle	WSW	Fair	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains N. 46° 56′, W. 30° 08′	29.74	755.4	66	18.9	79	SSW			3		10		S	0	0	Mod'ate	SW	Dull	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 45° 51′, W. 37° 07′	29.94	760.5	74	23.3	63	WSW			6		5		WNW	1 h'r	1 h'r	Rough	WNW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Helmbruch																			

NOTE.—The S. S. Amerika gives sea-swell n general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China †	29.88	758.9	84	28.9	83	Var.			3		k		Var.	0	0	Smooth		D. clouds	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 39° 35′, W. 143° 43′ *	30.13	765.3	62	16.7	83	SE			3		7		SSW	0	0	Smooth	SW	Overcast	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lach'an																			
S. S. Oregon, E. Polemann, Astoria, Oregon †	29.98	761.5	55.0	12.8		SE			1		10							Foggy	J. M. Lachlan. L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander N. 35° 38′, W. 121° 21′ †	30.03	762.7	52	11.1		NE			3		0					Mod'ate		Clear	
S. S. Orizaba, C. B. Johnson N. 36° 30′, W. 122° 00′ †	29.90	759.4	52	11.1		Calm			0		Fog		NW	0	0	Mod'ate	NW	Cloudy	Harrison & Marshall.
S. S. State of California, G. Dabney, Astoria, Oregon †	29.96	761.0	52	11.1		Calm			0		2						NW	Fair	
S. S. Victoria, H. M. Haywood, Off Fraser river †	30.01	762.2	59	15.0	35	SW			3		2		W					Fair	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 6° 40′, W. 84° 03′....†...	29.88	758.9	79	26.1	86	ESE			1		8		Calm			Small Cross	SSE;SW	Cloudy	F. A. Johnston.
§ S. S. Australia, S. 31° 58′, E. 178° 50′.....†	29.70	754.4				WSW			4		0					Cross	SW	Clear.	Banneman.
§S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb. Sydney, N. S. W.....†	29.95	760.7	54	12.2	100	N			3		0							Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly. N. 24° 42′, W. 112° 26′...†	29.89	759.2	64	17.8	94	NW			2		2		NW	0	0	Mod'ate	NW	Hazy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 43° 36′, E. 159° 55′.....†	30.28	769.1	46	7.8	84	WNW			2		5		W	0	0	Light	NE	Fair	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama.....†	29.96	761 0	78	25.6	100	NW			2		5		NW	0	0			Fair	
§S.S. Dakota, H. G. Morse. N. 48° 10′, W. 124° 52′...†	30.03	762.7	54	12.2	93	W			2		10			0	0	Mod'ate	N	Overcast	
§S.S. Granada, J. M. Cavarly N. 31° 30′, W. 118° 50′...†	30.01	762.2	56	13.3	87	WNW			3		10			0	0	Long	WNW	Cloudy	C. T. Rode.
§ S. S. Idaho, E. Alexander, N. 43° 26′ W. 124° 40′...†	29.94	760.5	60	15.6		NW			1		5		NW	0	0	Heavy	NW	Fair	E. Alexander.
§S.S. Zealandia, R. C. Ghest, S. 18° 04′, W. 172° 30.....	29.94	760 5	70	21.1		W			2		5		W			Smooth	SE	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 40° 33′, W. 58° 42′.....†	29.61	749.6	64	17.8		WSW			4		8		W	6 h'rs	6 h'rs	Small Mod'ate	W	Showery	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry.																			J. Jones.
S. S. Celtic, B. Gleadell, N. 44° 06′, W. 46° 17′.....†	29.91	759.7	54	12.2		WSW			4		10		WSW	Light 1 h'r	Light 1 h'r	Mod'ate	WSW	Cloudy	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.02	762.5	80.5	26.9		S			1		8		S	0.09	2.3			Cloudy	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.	29.90	759.4	66	18.9	64	WNW					0			0	0			Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 36° 41′, W. 73° 14′ ...†	29.96	761.0	71	21.7		W			1		0			0	0	Mod'ate	WSW	Clear.	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 13° 00′, W. 30° 38′....*†	30.08	764.0	81	27.2		ENE			5		2		ENE			Mod'ate	NE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 53° 20′, W 52° 33′.....†	30.11	764.8				E			5		10		E			Long	E	Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 35° 55′, W. 68° 28′.....†	30.13	765.3	74	23.3		W			3		8		Calm	Light	Light	Mod'ate	WSW	Clearing	
Iron Cross, W. Randall, N. 30° 35′, W. 79° 00′.....*	30.10	764.5	84	28.9	74	SE			1-2		3			0	0		SE	Misty	W. Randall.
British Barque Ivigtut, Adam Smith. N. 40° 35′, W. 67° 09′....*	29.82	757.4				NNW			5		8		S			Mod'ate	Confused	Cloudy	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.59	751.6	46	7.8	100	NE			3		10		NE	23 hours				Raining	James S. Garvin.

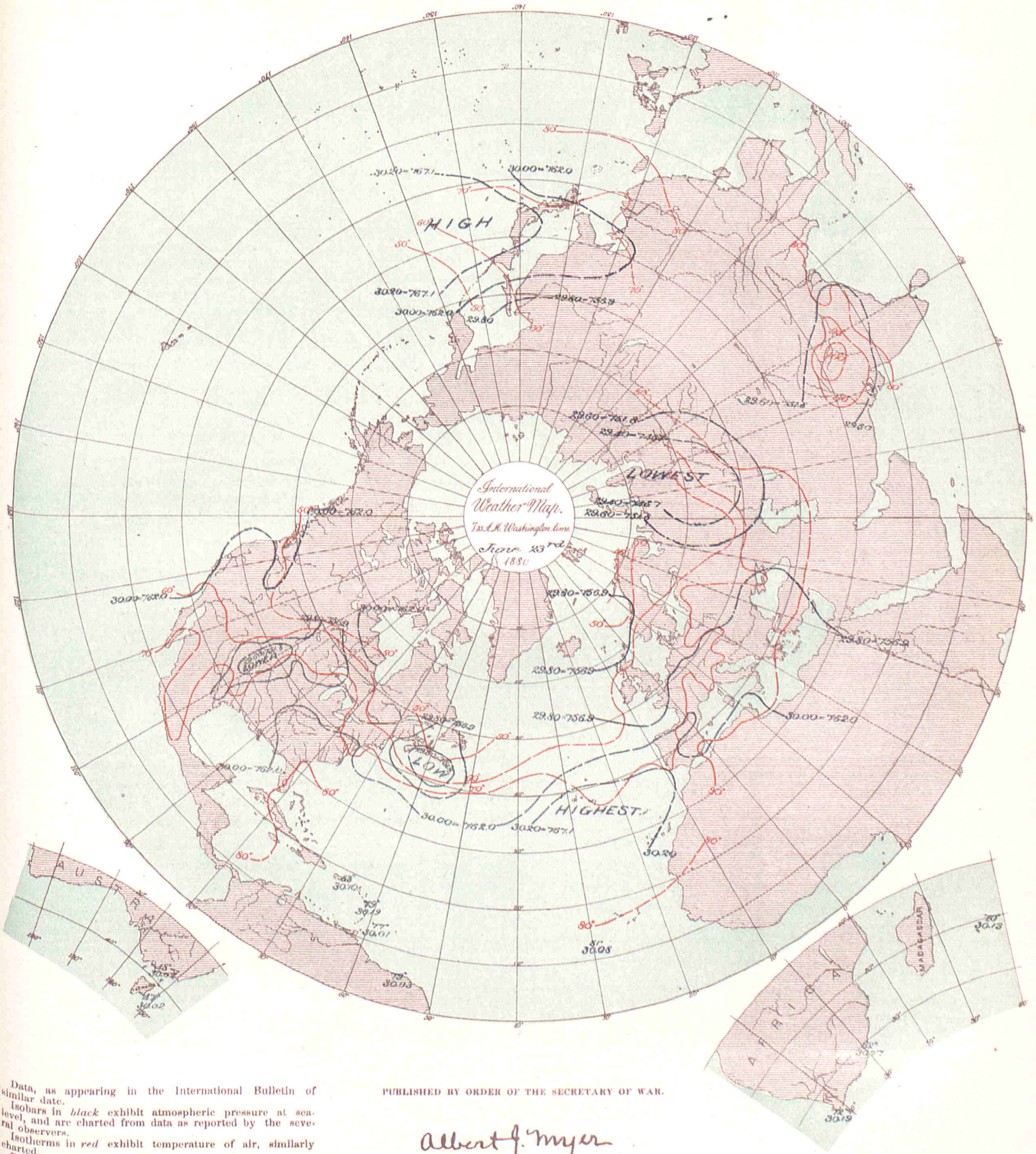
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 24, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.10	764.5	80.1	26.7	64	Calm			0		0			0	0	Clear	Metge.
Algiers			30.07	763.7	76.3	24.6	60	ENE			1		0			0	0	Clear.	Nicolas.
La Calle			30.08	764.0	81.5	27.5	67	NW			1		0			0	0	Clear.	Fonfrède.
Tunis			30.04	763.1															Jacques.
Sfax			30.11	764.8															Gau.
Saida			30.08	763.9															Charon.
Tebessa			30.04	763.0	89.6	32.0	25	W			2		1			Inap.	Inap.	Very fair	Watrin.
Geriville			30.06	763.4	89.6	32.0	67	SE			1		0			0	0	Clear	Lonchamp.
Laghouat			30.07	763.6	92.8	33.8	20	W			2		0			0	0	Clear	Herlin.
Biskra			30.03	762.7	91.8	33.2	27	WNW			5		0			0	0	Clear.	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Agram	29.31	744.4	29.84	757.8	70.0	21.1	64	N			5		5			0.217	5.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.08	738.5	29.81	757.1	74.5	23.6	48	SSW	3.8	1.7			5			0	0		Dr. Wierzbicki.
Eperies	28.95	735.3	29.79	756.6	70.9	21.6	60	Calm			0		9cs		S	0	0		Julius Mikolik.
Gratz	28.61	726.7	29.83	757.7	62.6	17.0	77	SW			2		10			0	0		Andreas Rospini.
Hermannstadt	28.48	723.4	29.84	757.9	75.6	24.2	50	NNW			2		6			0.124	3.15		Prof. A. Gottschling.
Kremsmünster, Observatory	28.53	724.7	29.84	757.8	64.4	18.0	71	NNW			1		10			0.031	0.8		The Staff.
Lemberg	28.85	732.9	29.82	757.3	64.6	18.1	70	NW			2		10			0.083	2.1		Dr. T. Stanecki.
Pola	29.82	757.3	29.92	760.0	74.5	23.6	51	SSW			1		8			0	0		I.R. Hydrographic Office.
Szathmar	29.41	747.0	29.85	758.3	74.5	23.6	56	E			4		8			0	0		Pet. Pancsics, S. J.
Szegedin	29.58	751.3	29.85	758.1	74.5	23.6	58	Calm			0		8			0.128	3.25		Karl Stancel.
Trieste	29.82	757.5	29.93	760.1	71.8	22.1	83	W			1		10			0.567	14.4	Thunder-storm	P. Busin.
Vienna	29.12	739.7	29.85	758.2	72.3	22.4	54	S			1		8			0	0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Arlon																			Prof. M. Passau.
Brussels	29.53	750.0	29.72	755.0	65.8	18.8	57	WSW			2	0	6	E	WSW	0.620	15.75		Royal Observatory.
Furnes	29.76	756.0	29.79	756.6	70.3	21.3	68	NW			3		1			0.020	0.5		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and tem-perature. Inches.	Barometer. Corrected for instru-m'tal error and tem-perature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.68	753.9	29.78	756.4	55.0	12.8		ENE	17	7.6			3			0	0	Blue sky	W. Boswell.
Ardrossan	29.70	754.4	29.72	754.9	65	18.3		W			1		7					D. clouds	G. Carrick.
Armagh, (Observatory)	29.53	750.0	29.76	755.9	59.0	15.0		NW	2	0.9			10					Showery	S. Call.
Bidston (Liverpool Obs)			29.76	755.9	60.6	15.9		WNW	12	5.4			3					Blue sky	John Hartnup.
Bolton (Sharples)	29.21	741.9	29.71	754.6	63.0	17.2		NW	13	5.8			5					D. clouds	Thomas Mackereth.
Bradford, Yorkshire	29.32	744.7	29.71	754.6	63.6	17.6	71	NE			2		8			0.17	4.3	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	30.02	762.5	30.05	763.3	83	28.3		NE			2		3					D. clouds	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.66	753.4	29.75	755.6	60.0	15.6		N			1		10			Blank	Blank		H. Todd.
Cardington			29.72	754.9	71.0	21.7		NW			0.4		8					Overcast	John McLaren.
Chatham (School M. E.)	29.64	752.8	29.77	756.1	64.0	17.8		Calm			0		10k					Misty	Lance Crp'l Hocker, R.E.
Donaghadee	29.71	754.6	29.75	755.6	56	13.3		SE			2		8					Foggy	J. Mac Gowan.
Dover	29.73	755.1	29.76	755.9	57	13.9		W			3		10					Thunder-storm	J. Costello.
Falmouth (Observatory)	29.64	752.8	29.87	758.7	59.8	15.4		WNW			1		6					D. clouds	The Staff.
Fort Napier, Natal	27.99	710.9	30.20	767.1	68.2	20.1		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.64	752.8	29.87	758.7	87	30.6		S			1		10					D. clouds	
Galway (Queen's College)			29.74	755.4	65	18.3		WSW			3		4					Blue sky	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.02	762.5	30.07	763.8	71.2	21.8		W			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.53	750.0	29.73	755.1	61.7	16.5		E			2	5c						D. clouds	D. G. Maclean.
Great Yarmouth	29.72	754.9	29.73	755.1	58	14.4		N			1		6					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.58	751.3	29.75	755.6	70.1	21.2		WSW			1		8					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.67	753.6	29.89	759.2	62.5	16.9		WSW			3		3					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.06	763.5	30.18	766.6	66	18.9		SW			4	c				0	0	Very fine	M. P. Moyle.
Holyhead	29.74	755.4	29.77	756.1	67	16.1		W			2		10					Overcast	John Tilston.
Jersey	29.64	752.8	29.92	760.0	62.0	16.7		W			4		2					D. clouds	J. Fisher.
Kew (Observatory)	29.71	754.6	29.75	755.6	67.0	19.4		W	10	4.5			7					Misty	The Met'g'l Office.
Leicester (Museum)	29.49	749.0	29.74	755.4	58.0	14.4		NE			1		10					Raining	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.88	758.9	30.11	760.7	80.4	26.9		SE			2		0					Blue sky	A. King.
Nairn	29.65	753.1	29.74	755.4	63	17.2		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			29.95	764.8	83.0	28.3		SE			1		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.56	750.8	29.74	755.4	62.3	16.8		S			1		10k; ks;d]	NW		1.225	31.12	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.21	741.9	29.72	754.9	65.0	18.3		WSW			1		8					Misty	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.52	749.8	29.78	756.4	67	19.4		W			1		7					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.77	756.1	29.84	757.9	69.0	20.6		WSW			3		2					D. clouds	John Merrifield.
*Roche's Point	29.74	755.4	29.86	758.4	64	17.8		SW			3		8					Showery	Wm. Kennedy.
St. Ann's Head	29.66	753.4	29.82	757.4	60	15.6		W			1		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.82	757.4	56	13.3		ESE	9	4.0			0					Blue sky	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.89	759.2	29.96	761.0	81.0	27.2		NE			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.49	749.0	29.76	755.9	60.0	15.6		SE			1		10			0.65	16.3	Overcast	W. F. Cooper.
Silloth Rectory	29.71	754.6	29.74	755.4	60.4	15.8	74	W			1		9			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.75	755.6	61.0	16.1		SSW	8	3.6			10					Misty	Rev. S. J. Perry.
Strathfield Turgiss	29.55	750.6	29.76	755.9	67.9	19.9		W			3		8					Raining	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	29.86	758.4	29.87	758.7	66	18.9		W			6		4					D. clouds	W. Newcombe.
Valencia (Observatory)	29.79	756.7	29.82	757.4	61.3	16.3		SW	22	9.8			6					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	29.94	760.5	29.98	761.5	66.2	19.0	60	NNW	10.1	4.5		10	10			0	0	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			29.65	753.1	45.0	7.2	74	NW			1		10k			0.07	1.8	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.78	756.4	60.8	16.0		E			1					0	0	Fine	Andrew Gibb.
Mauritius (Observatory)	29.97	761.2	30.16	766.0	72.0	22.2	59	SE	22.5	10.1		2	1	NNW	SE	0.01	0.3	Squally	C. Meldrum.
Melbourne (Observatory)	29.61	752.1	29.70	754.4	50.6	10.3	76	NNE	21	9.4			9			0.17	4.3	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.77	756.1	60	15.6		Calm			0		10			0	0		J. Youngclause.
North Unst, Shetland I's			29.78	756.4				N			4		10			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.																Sea or swell. Height scale 0—9	Sea or swell. Direction from—		
H. M. S. Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Commewyne																			Capt. Jas. Buchan.
Ship British Commodore																			Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia, N. 51° 25′, W. 33° 27′			30.02	762.5	55	12.8		N			4		8			3	NNE	D. clouds	Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German																			Capt. C. D. Coxwell
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
Iron Cross, N. 31° 10′, W. 78° 10′			30.18	766.6	86	30.0		S			2		2			3	SE	Misty	Capt. W. Randall.
Ship Lochee, S. 36° 15′, E. 22° 35′			29.95	760.7	69.3	20.7		N			7	10c		W				Overcast	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria, N 49° 22′, W. 12° 41′			29.88	758.9	59.6	15.3		S			5		10					Raining	Capt. M. Parry.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson
S. S. Sunbeam																			Capt. C. M. Dobson.
S. S. Wyberton, N. 35° 50′, W. 0° 08′			30.10	764.5	73.0	22.8		WSW			1		1					Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.23	666.2	29.95	760.7	67.6	19.8	98	SE			1	1c	2d		NE	Inap.	Inap.	Fair	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.65	753.2	29.70	754.4	56.8	13.8	94	WNW			2		10					Thunder-storm.	
Fanöe	29.63	752.5	29.65	753.0	64.2	17.9	79	WSW			4		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.80	756.9	29.84	758.0	50.7	10.4	95	W			2		10					Foggy	
Thorshavn (Faröe)	29.75	755.7	29.79	756.6	57.2	14.0	68	SW			4		7						
Vestervig	29.54	750.3	29.63	752.7	63.0	17.2	75	SW			4		7						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.40	746.8	29.95	760.8	66.2	19	66	SW			1		8kn		SW	0.31	8.	Very cloudy	Collignon, Director.
Amiens, Normal School	29.74	755.3	29.85	758.1	69.8	21	58	N			1		0			0	0	Clear.	Vaillant, Director.
Arras, Engineer School	29.62	752.4	29.88	759.0	54.0	12.2	77	E			2		6k;n		E	0.039	1.00		Klein, Commandant.
Avignon, Normal School	29.96	761.0	30.04	763.0	74.8	23.8	48	WNW			1		5		WSW	0.319	8.1	Threatening	Giraud, Director.
Bar-sur-Seine	29.34	745.3	29.89	759.3	58.1	14.5	82	NW			2		8kn		W	0	0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.58	751.3	29.84	757.9	65.1	18.4	58	W			3		8		W	0.128	3.25	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.10	739.0	29.97	761.3	61.0	16.1	65	S			2		8		SW	0.283	7.2	Very cloudy	A. Carré, Director.
Bordeaux	29.87	758.6	30.07	763.6	64.6	18.1	79	W			1		8		WNW	0.646	16.4	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.14	740.2	30.07	763.6	66.2	19	57	SW			1		10cn	SW	SW	0.244	6.2	Covered	Marlot, Director.
Bourges, Normal School	29.46	748.2	30.00	762.1	57.2	14	100	WSW			3		kn		WSW	0.319	8.10		M. Gence, Director.
Brest, Naval Observatory	29.72	754.8	29.96	761.0	66.2	19.0	75	WSW			3		9		WSW	0.148	3.75		Ch. de Rermaree, Dir.
Caen, Normal School	29.78	756.5	29.86	758.4	66.4	19.1	79	W			2		5		NNW	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.64	752.9	30.04	763.1	72.0	22.2	47	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.51	749.6	29.82	757.5	61.0	16.1	87	SW			2		10		SW	0	0	Covered	Jadot, Director
Chartres, Normal School	29.34	745.3	29.90	759.4	63.7	17.6	70	NW			3		5		W	0.138	3.5		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.65	727.8	30.00	762.0	57.7	14.3	97	W			2		10		W	0.024	0.6		Alluard, Director.
Commercy, Normal School	28.98	736.0	29.82	757.4	60.4	15.8	81	SW			4		kn	SW	SW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.94	735.0	30.08	764.0	68.0	20	46	NW			3		5		NW	0	0		L. Kina, Director.
Grenoble, Normal School	29.22	742.1	29.96	761.0	69.8	21	50	WNW			1		k			0.20	5.		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.84	757.9	30.05	763.2	66.2	19.0	70	W			1		5	SW	E	0.228	5.8	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.65	753.1	29.95	760.8	57.7	14.3	83	W			2		8		W	0.67	17.	Very cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.93	737.3	29.93	760.1	63.5	17.5	62	SW			3		5kn		SW			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.90	759.4	30.00	761.9	66.6	19.2	70	WSW			6		8		W	0.106	2.70	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.38	746.3	29.99	761.7	71.6	22.0	53	NW			1		5n		W	0.028	0.7	Cloudy	Ch. André, Director.
Mâcon, Normal School																			Galxin, Director.
Marseilles, Observatory	29.75	755.6	30.02	762.4	73.4	23.0	38	WNW			2		2		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.87	733.4	29.90	759.4	61.3	16.3	69	SW			3		kn		SW	0.20	5.		Barbier, Director.
Mont-Louis	24.82	630.5	30.06	763.5	53.6	12.0	74	W	9.4	4.2			5		E	0	0		M. Cave, for Dr. Fines.
Nice	29.85	758.3	29.89	759.2	75.2	24.0	59	SW			6		5	W	W	0	0	Fair	Capt. Boissière, Director
Nismes, Normal School	29.79	756.6	29.99	761.7	76.6	24.8	43	N			1		2		N	0.39	10.	Slightly cld'y	M. Boyer, Director.
Perpignan	29.97	761.3	30.08	763.9	69.8	21.0	53	SW	7.4	3.3			8		W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.62	574.3			37.9	3.3							10		SW	0.264	6.7	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.01	736.9	30.04	763.1	70.9	21.6	43	Calm			0		5	NE	NE	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.15	638.8			41.0	5.0	100	W			6		10			0.142	3.6	Rain & fog	Alluard, Director.
Rochefort, Naval Obs'y	30.03	762.8	30.07	763.6	68.0	20.0	72	W			2		10	W	W	0.04	1.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.78	756.3	29.86	758.5	64.8	18.2	68	W			4		2		W	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	29.88	759.0	29.91	759.8	64.8	18.2	71	NW			3		1	WNW	WNW	0.258	6.56	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.71	754.6	29.87	758.8	62.2	16.8	74	W			3		10	W	WNW	0.331	8.4	Covered	E. Renou, Director.
Tarbes, Normal School	29.02	737.0	30.09	764.2	60.8	16	59	W			1								T. Huguet, Director.
Toulouse, Observatory	29.42	747.3	30.15	765.8	67.5	19.7	54	WNW			6		8	NNW		0.201	5.1	Very cloudy	B. Baillaud, Dir.
Tours	29.76	755.8	29.95	760.8	66.2	19.0	54	WNW			3		8		WNW	0.189	4.8	¾ covered	M. de Tastes.
Versailles, Observatory	29.39	746.4	29.88	758.9	62.2	16.8	68	WNW			4					0.402	10.20		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N.S	29.29	743.9	29.97	761.2	74.8	23.8	54	W			1		5			0.094	2.4	Cloudy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	79.5	26.4										0.24	6.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.60	751.7			61.9	16.6	80	W			2		7		W	0.232	5.9		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.95	760.6	29.97	761.2	66.7	19.3	96	NE	2.9	1.3			8k			0.051	1.3	Fair	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P,) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 306.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 183 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.02	737.0	29.87	758.8	64.4	18.0	90	W			4		3k	W		0.165	4.2	Raining	Prof. Dr. Hoh.
Berlin	29.58	751.4	29.75	755.6	70.9	21.6	50	W			1		6			0.043	1.1	Raining	Prof. Dr. Arndt
Breslau	29.31	744.4	29.84	757.8	70.2	21.2	46	NNW			1		4			0.391	9.92	Rainy	Royal University Obs'y
Carlsruhe	29.41	746.9	29.82	757.4	63.7	17.6	81	SW			2		2	SW		0.248	6.3	Raining	Albert Senz.
Cassel	29.17	741.0	29.78	756.3	68.5	20.3	58	W			4		8	W		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.46	748.2	29.82	757.4	69.4	20.8	43	SSW			2		6			0.461	11.7		Physical Society
Friedrichshafen	28.52	724.4	29.92	760.0	64.4	18.0	70	SE			5		6	WSW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.63	752.7	29.71	754.5	66.4	19.1	68	WNW			3		9			0.858	21.8		Dr. Reinhold Kleeman.
Kiel	29.67	753.5	29.68	753.9	68.4	20.2	60	SW			2		7			0	0		Prof. Dr. G. Karsten
Königsberg (Prussia)	29.68	753.8	29.76	755.8	70.7	21.5	41	W			4		3	W		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.39	746.5	29.80	756.9	68.2	20.1	65	SW			2		7	SW		0.067	1.7		Prof. Dr. Bruhns, Privy Counselo
Magdeburg	29.56	750.9	29.79	756.6	64.0	17.8	76	SSW			4		7cs	S		0.433	11.0		Dr. Assmann.
Memel	29.70	754.4	29.75	755.6	66.4	19.1	72	W			2–3	2c							Reinbrecht & Issermann
Munich	28.12	714.2	29.98	761.4	60.4	15.8	76	W			5		10	W		0.146	3.7		Dr. C. Lang.
Neufahrwasser	29.71	754.6	29.72	755.0	74.7	23.7	39	WSW			3		7			0.331	8.4		A. Lothes.
Neustadt (Palatinate)	29.33	744.9	29.85	758.3	65.8	18.8	55	W			3		10	W		0.079	2.0	Rainy	Reallehrer Dicknether.
Posen	29.51	749.5	29.78	756.5	74.5	23.6	52	W			4		7			0.059	1.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.34	745.3	29.88	758.9	65.7	18.7	63	SW			6		6	SW		0.013	0.32	Raining	Imp. University Observatory.
Stuttgart	28.91	734.4	29.78	756.3	68.0	20.0	88	W					5	W				Light rain	Prof. Dr. Schoder.
Thorn	29.58	751.4	29.77	756.1	73.8	23.2	40	W			3		4			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.41	721.7	29.99	761.7	65.3	18.5	52	W	2.0	0.9			7k		W	0.79	2.0		Reallehrer J. Hopfner.
Wustrow	29.72	754.8	29.74	755.5	65.1	18.4	70	W			3		8cs			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.59	751.5	29.97	761.1	81.9	27.7		SW			4.0		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published, occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.53	750.2	29.58	751.4	85.0	29.4	78	SSW	56.1	25.1			3		W	0	0	Misty	
Deesa	29.06	738.1	29.51	749.6	98.6	37.0	25	W	14.7	6.7			0			0	0	Blue sky	
Bombay	29.68	754.0	29.72	755.0	75.7	24.3	94	W	16.0	7.2			10		W	4.61	117.1	Overcast	
Poona (Yarrowda)	27.88	708.0	29.75	755.7	70.5	21.4	92	WSW	17.0	7.6			10	W	W	0.45	11.4	Drizzling	
Belgaum	27.23	691.7	29.80	756.8	69.0	20.6	92	W	9.0	4.0			9	W	W	0.15	3.8	Showery	
Lahore	28.81	731.7	29.52	749.9	92.1	33.4	70	W	3.5	1.6			4			1.00	25.4	D. clouds	
Roorkee	28.64	727.5	29.51	749.6	90.8	32.7	58	SW	5.0	2.2			2			0	0		
Agra	28.95	735.3	29.49	749.0	98.6	37.0	66	E	5.1	2.3						0	0		
Nagpur	28.51	724.2	29.55	750.5	77.6	25.3	91	Calm	2.8	1.2			9		NW	0.79	20.1	Gloomy	
Jubbulpore	28.20	716.3	29.55	750.6	80.0	26.7	83	W	3.2	1.4			10			0.65	16.5	Raining	
Lucknow	29.15	740.3	29.51	749.6	91.6	33.1	57	ENE	5.4	2.4			7		SW	0	0	D. clouds	
Allahabad	29.19	741.5	29.49	749.1	91.7	33.2	64	ESE	3.3	1.5			4	E		0.10	2.5	D. clouds	
Patna	29.40	746.6	29.57	751.2	88.2	31.2	69	E	2.8	1.2			6	E	E	0	0	D. clouds	
Hazaribagh	27.59	700.8	29.60	751.7	75.8	24.3	87	SE	13.1	5.8			9		SE	0.10	2.5	Raining	
Cuttack	29.47	748.6	29.55	750.6	84.9	29.4	75	ESE	1.3	0.6			10			0.15	3.8	Drizzling	
Calcutta (Alipore)	29.58	751.4	29.60	752.0	83.9	28.8	79	SSE	7.0	3.1			8			0	0	D. clouds	
Goalpara	29.26	743.3	29.67	753.6	79.7	26.5	89	SW	3.6	1.6			9			1.02	25.9	Gloomy	
Chittagong	29.58	751.4	29.67	753.6	83.9	28.8	86	SSE	4.8	2.2			5					Showery	
Sibsagar	29.35	745.6	29.69	754.0	83.2	28.4	82	W	3.4	1.5			6			2.58	65.5	D. clouds	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.50	749.4	29.90	759.5	66.7	19.3	75	NE	1.3	0.6			8			0.327	8.3		Prof. Giovanni Clodig.
Milan	29.37	745.9	29.87	758 7	72.7	22.6	61	SE	1.3	0.6			7	SW		0.240	6.1		Prof. Schiaparelli.
Padua	29.79	756 6	29.90	759.4	73.6	23.1	54	W	9.4	4.2			9	WSW		0	0		Prof. Dott. Lorenzoni.
Moncalieri	28.94	735.1	29.82	757.4	73.6	23.1	62	SSE	3.8	1.7			4	NNE		0	0		Prof. P. F. Denza.
Genoa	29.76	755.8	29.95	760.6	67.5	19.7	82	SE	13.0	5.8			8	W		0.098	2.5		Prof. G. M. Garibaldi.
Mondovi	27.98	710.6	29.82	757.5	71.6	22.0	41	E			4		2	SW		0	0		Prof. D. C. Bruno.
Pesaro	29.87	758.8	29.92	760.0	73.3	25.7	42	SW	9.8	4.4			7	SW		0	0		Prof. Luigi Guidi.
Florence	29.71	754.6	29.96	761.0	73.4	23.0	55	SW			2		10	SW		0.008	0.2		Cav. F. Meucci
Leghorn	29.90	759.4	29.98	761.5	72.3	22.4	72	S	6.3	2.8			6			0	0		Prof. P. Monte.
Rome	29.84	757.8	30.01	762.2	80.1	26.7	41	WSW					8			0	0		Prof. P. Tacchini, Dir.
Lecce	29.73	755.2	29.98	761.4	82.8	28.2	32	WSW	8.1	3.6			1	S		0	0		Prof. C. De Giorgi.
Cosenza	29.10	739.1	29.95	760.7	83.5	28.6	65	SE	0	0			0			0	0		Prof. D. Conti.
Cagliari	29.80	756.8	29.99	761.7	76.5	24.7	58	SE			4		1			0	0		Prof. A. Pacinotti.
Palermo	29.79	756.6	30.04	762.9	75.4	24.1	56	ENE	8.7	3.9			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.92	760.0	29.97	761.1	81.3	27.4	59	S	8.7	3.9			0			0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.50	749.2	30.00	762.1	77.0	25.0	54	WSW	0	0			3			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					62.6	17.0	95	NNE	2.8	1.2			10n			0.470	11.94	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.67	753.6	29.86	758.4	68.5	20.3	96	SW	5.0	2.2			10s			0.160	4.06	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.99	761.7	30.06	763.5	60.8	16.0	94	NW	5.4	2.4			10n			0.870	22.10	Raining	The Staff.
Wakayama	29.72	754.9	29.88	758.9	65.9	18.8	84	N	1.1	0.5			10ck			0.153	3.89	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.4	29.98	761.6	60.8	16.0	77	SW			2		10n		NW	0	0	Covered	Prof. L. Perez.
Guanaxuato	23.64	600.6			58.5	14.7	93	Calm	0	0		1c	0	E	Calm	0.45	11.5	Clear.	Vicente Fernandez.
Leon	24.39	619.5	30.00	761.9	64.0	17.8	90	E			1	3c	1k	NE	NE	Inap.	Inap.	Clear	Prof. M. Leal.
Mazatlan	29.67	753.6	29.93	760.1	79.0	26.1	82	SE			1	1cs	8k		NE	0	0	Cloudy	F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.1	29.94	760.5	59.0	15.0	86	Calm	0	0			9k			0.08	2.0	Cloudy	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.87	606.2	29.82	757.4	61.3	16.3	89	Calm			0	3c	2k	NE		0.68	17.3	½ clouded	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.47	596.0	30.19	766.8	56.5	13.6	57	Calm	0	0		2ck	0	SW		0.89	22.5	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.2	30.07	763.8	63.0	17.2	40	N			1	0	0			0	0	Clear	G. Barroeta, M. D.
Tlacotalpam	29.85	758.1	29.86	758.4	78.8	26.0	97	SW			1	4	6	Calm	S	0	0	Threatening	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.57	573.3	30.14	765.5	56.8	13.8	89	Calm			0	1c	0	Calm		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.75	755.7	29.75	755.7	62.6	17.0		W			2					0.067	1.7		
Groningen	29.64	752.8	29.69	754.2	65.1	18.4		W			4					0.803	20.4		
Helder	29.69	754.0	29.69	754.0	63.3	17.4		WSW			1					0	0		
Hellevoetsluis	29.73	755.1	29.73	755.1	65.8	18.8	70	WNW			2					0	0		
Utrecht	29.69	754.2	29.74	755.4	64.6	18.1	84	W			1		5			0.457	11.6	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.51	749.6	29.57	751.0	61.5	16.4	66	WNW	4.9	2.2	.....	.....	0	.....	.....	0	0	.....	
Brönö	29.63	752.7	29.67	753.7	50.0	10.0	70	NNE	18	8	.....	.....	3	.....	.....	0	0	.....	
Christiania	29.37	746.0	29.51	749.5	73.4	23.0	48	SSW	18	8	.....	.....	3	.....	.....	0	0	.....	
Tromsö	29.47	748.6	29.53	750.0	45.7	7.6	70	SSW	25	11	.....	.....	10	.....	.....	0.075	1.9	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.13	765.4	30.34	770.7	69.4	20.8	80	W	.....	.....	4	.....	2	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.15	740.5	30.13	765.2	73.8	23.2	24	N	3.1	1.4	.....	.....	1	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.23	767.8	30.32	770.1	71.4	21.9	56	SW	3.8	1.7	.....	.....	9	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.89	759.1	30.24	768.1	68.5	20.3	46	N	7.4	3.3	.....	.....	5	.....	.....	0	0	.....	The Staff.'
Ponta Delgada (Azores)	30.27	768.9	30.34	770.7	70.9	21.6	67	W	8.7	3.9	.....	.....	4	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A.M. de Sande, Com'd't
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva.	.....	.....	29.87	758.8	71.1	21.7	.....	N	.....	.....	1	.....	3	.....	NW	1	N	.....	D. clouds	C. J. de Senna Barcellos, Q. M.
St. Paul de Loando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J.T.d'Oliveria, Com'd't
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q.M.
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sado, J. A. de Brito Capello,	.....	.....	30.02	762.6	70.7	21.5	.....	W	.....	.....	3	.....	2	.....	.....	2	NW	.....	D. clouds	A. Tito da Silva, Q. M.
Mossamedes, Benguela.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
Tejo, J. M. T. Guimaraes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.62	752.4	29.64	752.9	48.7	9.3	67	NW	9	4	.....	.....	6k	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	30.01	762.3	29.93	760.2	76.5	24.7	28	N	7	3	.....	.....	3ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.08	738.5	29.55	750.5	71.4	21.9	71	NE	2	1	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Dorpat	29.46	748.3	29.69	754.2	70.9	21.6	43	NW	4	2	.....	5ck	.....	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.56	725.4	29.50	749.2	55.0	12.8	55	W	31	14	.....	.....	5kn	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.52	749.7	29.78	756.3	63.9	17.7	46	W	11	5	.....	.....	9kn	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.98	761.4	30.00	761.9	74.1	23.4	76	Calm	0	0	.....	.....	4	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.21	741.8	29.82	757.3	68.4	20.2	58	Calm	0	0	.....	c;ck	7cs;ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.47	748.5	29.93	760.2	63.7	17.6	42	WNW	2	1	.....	.....	8	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.74	755.3	29.93	760.3	76.5	24.7	31	NE	9	4	.....	.....	0	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.30	744.3	29.82	757.5	73.8	23.2	43	SW	4	2	.....	.....	3ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.91	759.8	29.98	761.6	79.3	26.3	42	SSW	13	6	.....	.....	2cs	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.56	750.8	29.65	753.0	54.9	12.7	91	Calm	0	0	.....	.....	10n	.....	.....	.....	Raining	.....	.....
Nukuss	29.32	744.6	29.53	750.0	102.2	39.0	20	ESE	6.0	2.7	.....	.....	1k	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.71	754.5	29.85	758.1	73.2	22.9	88	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.69	754.0	29.70	754.4	64.4	18.0	57	NNE	.....	.....	.....	c	5ks	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.15	715.0	29.60	751.8	89.6	32.0	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.53	724.7	29.91	759.6	69.8	21.0	53	NW	22	10	.....	.....	9k	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.39	746.5	29.80	756.8	70.3	21.3	65	WSW	4	2	.....	.....	10ks;n	.....	.....	.....	Light rain	.....	Astronomical Obs.
Wilna	29.33	744.9	29.73	755.1	72.9	22.7	48	SW	7	3	.....	.....	7	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.46	748.2	29.73	755.1	77.4	25.2	45	W	4	2	.....	.....	1	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.99	761.8	30.10	764.4	72.3	22.4	69	SE	4.0	1.78	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.14	765.6	30.20	767.0	69.1	20.6	62	NW	1.8	0.82	.....	8	4	W	.....	0.122	3.1	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.28	692.9	.....	.....	64.2	17.9	58	S	3.0	1.35	.....	.....	5	.....	.....	0.098	2.5	Cloudy	Domingo Martin y Perez
Madrid, Royal Observatory	27.92	709.2	30.07	763.8	75.9	24.4	34	SW	8.2	3.67	.....	0	0	.....	.....	0	0	Clear.	The Staff.
Murcia, Met. Obs'y	29.93	760.1	30.07	763.7	88.7	31.5	33	SW	5.0	2.22	.....	0	0	.....	.....	0	0	Clear.	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.25	743.0	30.14	765.6	61.9	16.6	75	SW	10.5	4.7	.....	.....	8	.....	.....	0.075	1.9	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.00	762.1	30.07	763.7	79.2	26.2	88	Calm	0	0	.....	3cs;ck	1k	SSE	ESE	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands.	29.81	757.2	29.86	758.5	84.5	29.2	73	E	3.3	1.5	.....	.....	2s	.....	E	0	0	Fair	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.08	764.0	30.18	766.5	69.6	20.9	63	WNW	17.6	7.9	.....	0	0	.....	.....	0	0	.....	Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	29.98	761.5	30.07	763.8	82.4	28.0	85	E	11.5	5.15	.....	6cs	4kn	E	E	0.118	3.00	Cloudy	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.61	752.0	29.65	753.0	53.6	12.0	.....	S	.....	.....	4	.....	0	.....	.....	0	0	.....	
Umea	29.60	751.9	29.65	753.2	59.4	15.2	52	SW	.....	.....	6	.....	1	.....	.....	0	0	.....	
Hernosand	29.64	752.9	29.69	754.2	57.2	14.0	57	S	.....	.....	4	.....	5	.....	.....	0	0	.....	
Stockholm	29.48	748.9	29.66	753.4	57.6	14.2	74	E	.....	.....	2	.....	10	.....	.....	0.028	0.7	.....	
Wisby	29.61	752.0	29.67	753.5	70.5	21.4	53	WSW	.....	.....	6	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.55	750.6	29.64	752.8	57.7	14.3	77	ESE	7.2	3.2	.....	.....	10	.....	S	0.012	0.30	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pâhlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 34° 37′, W. 19° 16′	.....	.....	30.35	770.9	72.9	22.7	.....	NNW	.....	.....	0	.....	1	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.58	725.9	29.07	761.2	66.9	19.4	44	SSW	.....	.....	4	.....	7	.....	.....	0.213	5.4	Cloudy		The Observatory.
Zurich	28.32	719.3	29.02	759.9	66.2	19.0	55	W	.....	.....	6	.....	4	.....	.....	0	0	Lightly cl'dy		The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —1.0 mm.; Thermometer, —2.1 Cent. Relative Humidity, —11 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	30.02	762.5	74.7	23.7	45	ENE	10	4.5	.....	.....	0	.....	.....	0	0	.....		The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Valona	.....	.....	30.08	763.9	79.2	26.2	.....	S	.....	.....	2	.....	0	.....	.....	0	0	Clear		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y	.....	.....	29.89	759.1	80.4	26.9	64	NW	.....	.....	2	.....	3k	.....	NW	0	0	.....		Prof. C. V. A van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B	.....	.....	.....	.....	54.0	12.2	.....	NE	6	2.7	.....	.....	8s	.....	.....	Inap.	Inap.	Fair		Hon. J. Ferguson.
Chatham, N. B	29.84	757.9	29.90	759.4	50.3	10.2	82	NE	6	2.7	.....	.....	10ks	SE	.....	0.01	0.3	Cloudy		G. A. Blair.
Charlottetown, P. E. Island	29.76	755.9	29.80	756.9	46.3	7.9	93	N	10	4.5	.....	.....	10n	.....	.....	0.170	4.32	Cloudy		H. J. Cundall, C. E
Cornwall, Ontario	29.57	751.1	29.75	755.6	69.2	20.7	92	SW	.....	.....	1	.....	9s	.....	.....	0.026	0.66	Cloudy		James Smith, M. A.
Dalhousie, N. B	29.72	754.9	29.89	759.2	54.5	12.5	82	E	.....	.....	1	2cs	0	.....	.....	0	0	Clear.		H. A. Johnson.
Father Point, Quebec	29.87	758.7	29.89	759.2	48.6	9.2	74	W	2	0.9	.....	3c	0	.....	.....	0	0	Fair		J. McWilliams.
Fredericton, N. B	29.84	757.9	29.91	759.7	56.0	13.3	63	NE	5	2.2	.....	2ck	0	NW	.....	0	0	Clear		Prof. Harrison.
Fort Garry, Manitoba	28.94	735.1	29.72	754.9	64.5	18.1	57	NW	8	3.6	.....	0	1s	.....	.....	0	0	Fair		James Stewart.
Granton, Ontario	28.83	732.3	29.86	758.4	75.0	23.9	72	W	.....	.....	1	2cs	0	.....	.....	0	0	Clear.		James Grant.
Halifax, N. S	29.67	753.6	29.80	756.9	51.2	10.7	80	NW	14	6.3	.....	.....	9ks	.....	.....	0.073	1.86	Cloudy		A. Allison.
Hamilton, Ontario	29.48	748.4	29.85	758.2	76.6	24.8	75	SW	.....	.....	1	3cs	0	NW	.....	0	0	Clear.		Geo. Dickson, B. A.
Heart's Content, N. F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		E. Weedon.
Kingston, Ontario	29.47	748.5	29.78	756.4	70.8	21.6	80	SW	5	2.2	.....	0	0	.....	.....	0	0	Clear.		S. Woods, M. A.
Little Glace Bay, N. S	29.68	753.9	29.72	754.9	45.7	7.6	96	N	8	3.6	.....	.....	10n	.....	.....	0.20	5.1	Overcast		C. H. Rigby.
Montreal, Quebec	29.58	751.3	29.78	756.4	62.0	16.7	98	SE	4	1.8	.....	.....	10s	.....	.....	0.13	3.3	Cloudy		C. H. McLeod, C. E.
Moose Factory, Ontario	29.76	755.9	29.79	756.7	68.5	20.3	87	Calm	.....	.....	0	.....	8n	.....	.....	0.63	16.0	Clearing		J. R. Nason.
Norwood, Ontario	29.11	739.4	29.77	756.1	74.3	23.5	72	SW	2	0.9	.....	0	0	.....	.....	0	0	Clear		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.12	739.6	29.78	756.4	72.4	22.4	69	W	8	3.6	.....	0	0	.....	.....	0	0	Clear.		Rev. R. Mosley.
Peterboro, Ontario	29.09	738.9	29.79	756.7	79.7	26.5	54	SW	.....	.....	2	0	0	.....	.....	0	0	Clear		J. F. Jeffers, M. A.
Port Dover, Ontario	29.23	742.4	29.88	758.9	74.1	23.4	90	SW	4	1.8	.....	7k	0	W	.....	0	0	Fair		H. Morgan.
Port Stanley, Ontario	29.29	744.0	29.90	759.4	72.0	22.2	78	W	4	1.8	.....	5ck	0	W	.....	0	0	Fair		M. Payne.
Quebec, Quebec	29.54	750.3	29.86	758.4	56.0	13.3	87	E	.....	.....	5	.....	10n	.....	.....	0	0	Cloudy		Capt. Ashe, R. N.
Rockliffe, Ontario	29.32	744.7	29.76	755.9	64.0	17.8	83	Calm	0	0	.....	1c	0	W	.....	0.06	1.5	Fair		W. H. McIntyre.
St. John, N. B	29.73	755.1	29.89	752.2	52.0	11.1	73	NE	10	4.5	.....	3k	0	.....	.....	0	0	Fair		G. Murdock, C. E.
Saugeen, Ontario	29.13	739.9	29.80	756.9	73.1	22.8	71	SW	12	5.4	.....	2cs	0	.....	.....	0	0	Clear		K. Stewart.
Stratford, Ontario	28.65	727.7	29.87	758.7	72.2	22.3	74	W	10	4.5	.....	2cs	0	.....	.....	0	0	Clear.		C. J. MacGregor, M. A.
Sydney, C. B	29.66	753.4	29.70	754.4	48.2	9.0	93	N	6	2.7	.....	.....	10n	.....	.....	0	0	Cloudy		T. C. Hill, C. E.
Toronto, Ontario	29.48	748.8	29.84	757.9	76.0	24.4	57	W	7	3.1	.....	2cs	2ks	W	.....	0	0	Fair		Magnetic Observatory.
Windsor, N. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Prof. John E. Oram, M. A
Woodstock, Ontario	28.83	732.9	29.84	757.9	76.6	24.8	64	SW	12	5.4	.....	5cs	0	S	.....	0	0	Fair		Professor Wolverton.
Yarmouth, N. S	29.79	756.7	29.86	758.4	55.1	12.8	74	N	6	2.7	.....	4c	2s	N	.....	0	0	Fair		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.60	751.8	29.86	758.4	43	6.1	100	N	.....	.....	.....	.....	10	.....	.....	0.22	5.6	Cloudy		John Delany.
St. Pierre, N. F., Hôpital Maritime	.....	.....	29.59	751.6	47.5	8.6	.....	SE	.....	.....	2	.....	.....	.....	.....	0.08	2.0	.....		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR. UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.80	756.9	29.88	758.9	74	23.3	63	S	5	2.2		0	Haze		Calm	0	0	Clear	
Alpena, Michigan	29.16	740.7	29.76	755.9	75	23.9	68	W	7	3.1		0	0			0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.93	734.8	30.02	762.5	77	25.0	69	S	6	2.7		5k	5s	Calm	Calm	Inap.	Inap.	Cloudy	
Atlantic City, New Jersey	29.95	760.7	29.96	761 0	77	25.0	82	W	7	3.1		10k	Haze	NW	Calm	0	0	Cloudy	
Augusta, Georgia	29.94	760.5	30.13	765.3	78	25.6	73	SW			1		10s		S	0	0	Cloudy	
Baltimore, Maryland	29.94	760.5	29.99	761.7	82	27.8	56	W	4	1.8		5ck	Haze	Calm	Calm	0	0	Fair	
Barnegat, New Jersey	29.91	759.7	29.93	760.2	82	27.8	67	NW	8	3.6		8ck	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	28.10	713.7	29.96	761.0	66	18.9	73	NW	4	1.8		2c	0	Calm		0	0	Fair	
Boerne, Texas	28.44	722.4	29.72	754.9	64	17.8	94	N	2	0.9		0	0			0	0	Clear	
Boise City, Idaho	27.07	687.6	30.03	762.7	61.5	16.4	48	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.73	755.1	29.88	758.9	75	23.9	44	SW	1	0.4		Haze	5cs	Calm	NW	0	0	Fair	
Brackettville, Texas	28.72	729.5	29.72	754.9	74	23.3	72	E	8	3.6		0	0			0	0	Clear	
Breckenridge, Minnesota	28.83	732.3	29.78	756.4	67	19.4	74	W	2	0.9		5c	0	W		0	0	Fair	
Brownsville, Texas	29.79	756.7	29.83	757.7	81	27.2	76	S	7	3.1		0	0			0	0	Clear	
Buffalo, New York	29.20	741.7	29.86	758.4	72.5	22.5	74	SW	8	3.6		5k	Haze	SW	Calm	0	0	Fair	
Burkes, Arizona					71	21.7	33	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.54	750.3	29.81	757.2	67	19.4	74	SW	10	4.5		2ck	0	W		0.11	2.8	Fair	
Cairo, Illinois	29.59	751.6	29.96	761.0	77	25.0	77	S	5	2.2		2ck	5s	S	S	0.05	1.3	Fair	
Campo, California	27.37	695.2	29.94	760.5	36	2.2	80	SW	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.04	763.0	30.04	763.0	78	25.6	86	W	13	5.8		Haze	Haze	Calm	Calm	0	0	Light haze	
Cape Henry, Virginia	29.97	761.2	29.99	761.7	82	27.8	60	SW	7	3.1		2cs	0	Calm		0	0	Clear	
Cape Lookout, N. Carolina	30.06	763.5	30.07	763.8	78	25.6	86	SW	12	5.4		5c;k	Haze	SW	Calm	0	0	Fair	
Cape May, New Jersey	29.93	760.2	29.98	761.0	74	23.3	51	SW	12	5.4		0	0			0	0	Clear	
Castroville, Texas	29.08	738.6	29.75	755.6	73	22.8	76	Calm	0	0		0	0			0	0	Clear	
Cedar Keys, Florida	30.07	763.8	30.10	764.5	77	25.0	82	E	11	4.9		5ck	1ks	SE	E	0.67	17.0	Fair	
Charleston, South Carolina	30.05	763.3	30.10	764.5	78	25.6	73	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.21	741.9	29.98	761.5	80	26.7	62	SW	4	1.8		5c	Haze	Calm	Calm	0	0	Fair	
Chattanooga, Tennessee	29.24	742.7	30.00	762.0	79	26.1	66	S	10	4.5		2ck	8ks	SE	E	0	0	Threatening	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	55	12.8	68	S	1	0.4		0	0			0	0	Clear	
Chicago, Illinois	29.21	741.9	29.86	758.4	76	24.4	60	SW	1	0.4			10s		Calm	0	0	Cloudy	
Chincoteague, Virginia	29.98	761.5	30.00	762.0	74	23.3	93	SW	7	3.1		2c	Haze	SW	Calm	0	0	Fair	
Cincinnati, Ohio	29.36	745.7	29.98	761.5	75	23.9	77	S	1	0.4			10s		SW	0	0	Cloudy	
Cleveland, Ohio	29.25	742.9	29.92	760.0	79	26.1	54	S	4	1.8		2ck	0	SW		0	0	Clear	
Coleman City, Texas	28.14	714.7	29.73	755.1	72	22.2	71	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.15	740.4	29.94	760.5	78	25.6	61	SW	1	0.4		0	Sm'e		Calm	0	0	Clear	
Concho, Texas	28.02	711.7	29.04	752.8	72	22.2	71	Calm	0	0		0	0			0	0	Clear	
Corsicana, Texas	29.46	748.3	29.91	759.7	71	21.7	75	SE	4	1.8		0	0			0	0	Clear	
Davenport, Iowa	29.26	743.2	29.86	758.4	75	23.9	72	W	1	0.4		5cs	5s	W	W	0	0	Cloudy	
Dayton, Washington T'y					57	13.9	69	NE			1	2c	0	Calm		0	0	Clear	
Deadwood, Dakota	25.44	646.2			58	14.4	53	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.75	730.2	29.86	758.4	75	23.9	72	NE	4	1.8		0	0			0	0	Clear	
Delaware Breakwater, Del.	29.95	760.7	29.97	761.2	77	25.0	73	W	16	7.2		0	0			0	0	Clear	
Denison, Texas	29.13	739.9	29.89	759.2	70	21.1	95	SE	2	0.9			Fog			0	0	Dense fog	
Denver, Colorado	24.83	630.7	30.05	763.3	59	15.0	65	SW	5	2.2		0	0			0	0	Clear	
Des Moines, Iowa	28.99	736.3	29.82	757.4	70	21.1	80	Calm	0	0		0	5s		Calm	0.38	9.7	Fair	
Detroit, Michigan	29.25	742.9	29.88	758.9	72	22.2	71	SW	5	2.2		8cs	0	Calm		0	0	Fair	
Dodge City, Kansas	27.35	694.7	29.51	749.5	72	22.2	76	Calm	0	0		0	0			0.31	7.9	Clear	
Dubuque, Iowa	29.16	740.7	29.82	757.4	73	22.8	67	SW	1	0.4		1k	Haze	W	Calm	0.02	0.5	Hazy	
Duluth, Minnesota	29.10	739.1	29.74	755.4	72	22.2	76	NW	3	1.3		2c	0	W		0	0	Fair	
Eagle Pass, Texas	29.16	740.7	29.85	758.2	80	26.7	51	E	12	5.4		0	0			0	0	Clear	
Eastport, Maine	29.82	757.4	29.89	759.2	55	12.8	68	N	4	1.8		8c	0	N		0.02	0.5	Fair	
Edinburg, Texas					76	24.4	91	S			1	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.22	742.2	29.89	759.2	79	26.1	54	SW	7	3.1		0	0			0	0	Clear	
Escanaba, Michigan	29.16	740.7	29.77	756.1	75	23.9	77	W	4	1.8		5c	0	W		0.04	1.0	Clear	
Florence, Arizona	28.33	719.6	29.93	760.2	70	21.1	48	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	54	12.2	61	SE	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.92	709.2	29.70	754.4	57	13.9	94	NW	4	1.8		5cs	0	W		0.05	1.3	Fair	
Fort Custer, Montana	26.85	682.0			60	15.6	65	NW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.18	639.6	30.14	765.5	64	17.8	83	Calm	0	0		5s	0	NW		0.10	2.5	Fair	
Fort Elliot, Texas	26.89	683.0	29.05	737.9	68	20.0	65	S	4	1.8		10k	0	S		0	0	Cloudy	
Fort Gibson, Indian Ter.	29.38	746.2	29.89	759.2	71	21.7	85	SE	2	0.9		10cs	0	S		Inap.	Inap.	Cloudy	
Fort Grant, Arizona	25.19	639.8	29.99	761.7	72	22.2	27	N	6	2.7		5ck	0	SW		0	0	Fair	
Fort Griffin, Texas	28.65	727.7	29.88	758.9	67	19.4	79	Calm	0	0		0	0			0	0	Clear	
Fort Keogh, Montana	27.25	692.1			61	16.1	48	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.68	703.1	29.53	750.0	68	20.0	70	Calm	0	0		1c	0	N		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.71	729.2	29.76	755.9	73	22.8	85	Calm	0	0		0	0			0	0	Clear	
Fort Stevenson, Dakota	28.06	712.7			63	17.2	83	W	4	1.8		2c	0	Calm		0	0	Fair	
Fort Verde, Arizona					59	15.0	33	N			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.81	757.2	29.86	758.4	72	22.2	95	SW	3	1.3		5cs	5ks	E	SW	5.27	133.9	Cloudy	
Grand Haven, Michigan	29.22	742.2	29.83	757.7	75	23.9	68	S	8	3.6		2k	0	S		0	0	Fair	
Helena, Montana					59	15.0	39	SW	2	0.9		2c	0	Calm		0	0	Fair	
Henrietta, Texas																			
Indianapolis, Indiana	29.19	741.4	29.92	760.0	75	23.9	77	SE	1	0.4			10s		Calm	0	0	Cloudy	
Indianola, Texas	29.85	758.2	29.87	758.7	75	23.9	86	SE	4	1.8		0	5ks		SW	2.06	52.3	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.09	764.3	30.11	764.8	74	23.3	86	S	4	1.8			10s		Calm	0.28	7.1	Cloudy	
Keokuk, Iowa	29.26	743.2	29.83	757.7	80	26.7	70	SW	8	3.6		5cs	2s	W	SW	0	0	Fair	
Key West, Florida	30.05	763.3	30.08	764.0	84	28.9	75	E	8	3.6		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	79	26.1	62	W	12	5.4		2k	0	NW		0	0	Clear	
Knoxville, Tennessee	29.05	737.9	30.01	762.2	74.5	23.6	77	Calm	0	0			10ks		SW	0	0	Cloudy	
La Crosse, Wisconsin	29.12	739.6	29.78	756.4	70	21.1	70	NW	4	1.8		0	0			0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	63	17.2	73	Calm	0	0		0	2s		Calm	0	0	Fair	
Laredo, Texas	29.36	745.7	29.68	753.9	81	27.2	67	SE	3	1.3		0	0			0	0	Clear	
Leavenworth, Kansas	29.04	737.6	29.83	757.7	77	25.0	65	S	6	2.7		5k	0	SW		0	0	Fair	
Lewiston, Idaho	29.11	739.4	29.74	755.4	58	14.4	70	NE	1	0.4		0	0			0	0	Clear	
Little Rock, Arkansas	29.62	752.3	29.93	760.2	71	21.7	95	Calm	0	0			10s		Calm	0.71	18.0	Cloudy	
Los Angeles, California	29.62	752.3	29.96	761.0	58	14.4	82	S	3	1.3			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.39	746.5	29.92	760.0	79	26.1	62	SE	5	2.2		8k	0	S		0	0	Fair	
Lynchburg, Virginia	29.53	745.0	29.97	761.2	79	26.1	58	SW	3	1.3		0	Haze			0	0	Clear	
Madison, Wisconsin	28.86	733.0	29.79	756.7	74	23.3	76	S	4	1.8		8c	0	SW		0	0	Fair	
Marquette, Michigan	29.08	738.6	29.74	755.4	74	23.3	63	W	8	3.6		2c	0	W		0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.26	718.3	29.97	761.2	71	21.7	80	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Memphis, Tennessee	29.65	753.1	29.97	761.2	75	23.9	81	SE	6	2.7	.....	.....	10ks	.....	SE	0.18	4.6	Cloudy	
Milwaukee, Wisconsin	29.13	739.9	29.81	757.2	76	24.4	69	SW	12	5.4	.....	8ck;cs	0	Calm; SW	.....	0	0	Fair	
Mobile, Alabama	29.95	760.7	29.99	761.7	76	24.4	86	Calm	0	0	.....	5c	0	W	.....	1.08	27.4	Fair	
Montgomery, Alabama	29.78	756.4	30.01	762.2	74	23.3	85	SE	5	2.2	.....	2k	8ks	SE	SE	Inap	Inap.	Cloudy	
Morgantown, West Virginia	29.04	737.6	29.98	761.5	76	24.4	69	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
Mt Washington, N. H	23.79	604.3	30.15	765.8	48	8.9	100	NW	30	13.4	.....	.....	Fog	.....	NW	0.36	9.1	Dense fog	
Nashville, Tennessee	29.48	748.8	29.99	761.7	78	25.6	73	SE	3	1.3	.....	.....	10ks	.....	SE	0.03	0.8	Cloudy	
New Haven, Connecticut	29.79	756.7	29.90	759.4	76	24.4	64	W	2	0.9	.....	2c	Sm'e	Calm	Calm	0	0	Fair	
New London, Connecticut	29.86	758.4	29.91	759.7	73	22.8	50	Calm	0	0	.....	0	Haze	.....	Calm	0	0	Clear	
New Orleans, Louisiana	29.91	759.7	29.96	761 0	78	25.6	78	SE	6	2.7	.....	0	2s	.....	SE	0.24	6.1	Fair	
Newport, Rhode Island	29.85	758.2	29.90	759.4	71	21.7	71	SW	2	0.9	.....	2c	0	Calm	.....	0	0	Clear	
New River, North Carolina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
New York, New York	29.76	755.9	29.94	760.5	72	22.2	75	W	2	0.9	.....	1k	Haze	Calm	Calm	0	0	Hazy	
Norfolk, Virginia	29.95	760.7	30.01	762.2	85	29.4	67	SW	2	0.9	.....	0	Sm'e	.....	SW	0	0	Clear	
North Platte, Nebraska	27.07	687.6	29.54	750.3	63	17.2	83	E	4	1.8	.....	.....	10s	.....	Calm	0.44	11.2	Cloudy	
Olympia, Washington Ter	29.89	759.2	29.93	760.2	50.5	10.3	93	NE	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Omaha, Nebraska	28.74	730.0	29.78	756.4	72	22.2	67	SE	6	2.7	.....	.....	10s	.....	Calm	0	0	Cloudy	
Oswego, New York	29.55	750.6	29.85	758.2	77	25.0	57	SW	11	4.9	.....	1k	Haze	W	.....	0	0	Clear	
Pembina, Dakota	28.91	734.3	29.70	754.4	60	15.6	82	NW	8	3.6	.....	0	0	.....	.....	0	0	Clear	
Pensacola, Florida	29.97	761.2	30.00	762.0	76	24.4	82	NW	1	0.4	.....	2cs	0	NW	.....	0.44	11.2	Fair	
Philadelphia, Pennsylvania	29.92	760.0	29.96	761.0	76	24.4	69	SW	4	1.8	.....	2k	Sm'e	W	Calm	0	0	Fair	
Phœnix, Arizona	28.70	729.0	30.28	771.6	88	31.1	31	E	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Pike's Peak, Colorado	17.96	456.2	30.17	766.3	37	2.8	81	N	2	0.9	.....	5ck	0	Calm	.....	0.33	8.4	Fair	
Pilot Point, Texas	29.13	739.9	29 94	760.5	71	21.7	80	E	2	0.9	.....	8c	0	E	.....	0	0	Fair	
Pioche, Nevada	24.02	610.1	29.80	756.9	55	12.8	22	SW	10	4.5	.....	0	0	.....	.....	0	0	Clear	
Pittsburg, Pennsylvania	29.19	741.4	29.96	761.0	72	22.2	80	W	1	0.4	.....	0	Fog	.....	.....	0	0	Clear	
Port Huron, Michigan	29.23	742.4	29.85	758.2	74	23.3	68	SW	7	3.1	.....	10c	0	W	.....	0	0	Cloudy	
Portland, Maine	29.84	757.9	29.88	758.9	64	17.8	73	NW	2	0.9	.....	.....	10s	.....	Calm	0	0	Cloudy	
Portland, Oregon	29.83	757.7	29.90	759.4	60	15.6	77	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Portsmouth, North Carolina	.....	.....	.....	.....	78	25.6	82	SW	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Prescott, Arizona	24.76	628.9	30.12	765.0	52	11.1	41	S	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Punta Rassa, Florida	30.05	763.3	30.07	763.8	76	24.4	91	E	6	2.7	.....	.....	10s	.....	Calm	0.13	3.3	Cloudy	
Red Bluff, California	29 55	750.6	29.91	759.7	61.5	16.4	64	S	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Rio Grande City, Texas	29.64	752.8	29.85	758.2	78	25.6	82	SE	6	2.7	.....	0	0	.....	.....	0	0	Clear	
Rochester, New York	29.25	742.9	29.83	757.7	73	22.8	67	W	9	4.0	.....	5c	Haze	NW	.....	0	0	Fair	
Roseburg, Oregon	29.36	745.7	29.92	760.0	56	13.3	93	NW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Sacramento, California	29.32	757.4	29.89	759.2	53	11.7	86	S	6	2.7	.....	0	0	.....	.....	0	0	Clear	
St. Louis, Missouri	29.37	746.0	29.92	760 0	75	23.9	77	NW	2	0.9	.....	.....	10s	.....	Calm	Inap.	Inap.	Cloudy	
St. Paul, Minnesota	29.01	736.8	29.80	756.9	66	18.9	84	SW	4	1.8	.....	.....	10ks	.....	SW	0.11	2.8	Cloudy	
Salt Lake City, Utah	25.57	649.5	29.90	759.4	61	16.1	35	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
San Antonio, Texas	29.17	740.9	29.85	758.2	71	21.7	85	NE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
San Diego, California	29.93	760.2	30.00	762.0	62	16.7	72	N	4	1.8	.....	.....	10s	.....	N	0	0	Cloudy	
Sandusky, Ohio	29.29	744.0	29.92	760.0	77	25.0	61	S	8	3.6	.....	8ck	0	S	.....	0	0	Fair	
Sandy Hook, New Jersey	29.89	759.2	29.92	760.0	79	26.1	70	SW	8	3.6	.....	0	Haze	.....	Calm	0	0	Clear	
San Francisco, California	29.92	760.0	29.99	761.7	52	11.1	96	W	4	1.8	.....	.....	Fog	.....	SW	0	0	Dense fog	
Santa Fé, New Mexico	23.27	591.0	29.81	757.2	66	18.9	41	SE	5	2.2	.....	0	0	.....	.....	Inap.	Inap.	Clear	
Savannah, Georgia	30.03	762.7	30.12	765.0	80	26.7	74	Calm	0	0	.....	0	8s	.....	Calm	1.19	30.2	Fair	
Shreveport, Louisiana	29.72	754.9	29.93	760.2	69	20.6	95	SE	4	1.8	.....	.....	Fog	.....	Calm	0	0	Dense fog	
Silver City, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Smithville, North Carolina	30.07	763.8	30.11	764.8	81	27.2	70	SW	4	1.8	.....	4c	Haze	Calm	Calm	0	0	Clear	
Socorro, New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Springfield, Illinois	29.28	743.7	29.91	759.7	78	25.6	65	SW	4	1.8	.....	6c;ck	1s	SW	SW	0	0	Fair	
Springfield, Massachusetts	29.77	756.1	29.89	759.2	75	23.9	60	N	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Stockton, Texas	26.88	682.7	29.88	758.9	74	23.3	51	SE	19	8.5	.....	0	0	.....	.....	0	0	Clear	
Thatcher's Island, Mass	29.84	757.9	29.89	759.2	65	18.3	89	S	5	2.2	.....	5c	5s	W	SW	0	0	Cloudy	
Toledo, Ohio	29.26	743.2	29.90	759.4	79	26.1	62	W	8	3.6	.....	8cs	Sm'e	SW	Calm	0	0	Fair	
Tucson, Arizona	27.44	697.0	29.99	761.7	80	26.7	28	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear	
Umatilla, Oregon	29.54	750.3	30.02	762.5	60.5	15.8	69	E	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Uvalde, Texas	28.94	735.1	29.71	754.6	84	28.9	61	NE	5	2.2	.....	0	0	.....	.....	0	0	Clear	
Vicksburg, Mississippi	29.72	754.9	29.98	761.5	72	22.2	90	SE	3	1.3	.....	2ck	2s	Calm	Calm	2.39	60.7	Fair	
Virginia City, Montana	24.32	617.7	29.80	756.9	53	11.7	48	SE	4	1.8	.....	0	0	.....	.....	0	0	Clear	
Visalia, California	29.50	749.3	29.86	758.4	57	13.9	72	SW	1	0.4	.....	0	0	.....	.....	0	0	Clear	
Washington, D. C	29.89	759.2	30.00	762.0	78	25.6	61	S	2	0.9	.....	1ck	Haze	SW	.....	0	0	Clear	
Wickenburg, Arizona	.....	.....	.....	.....	64	17.8	53	NW	.....	.....	1	0	0	.....	.....	0	0	Clear	
Wilmington, North Carolina	30.01	762.2	30.08	764.0	79	26.1	78	W	7	3.1	.....	0	0	.....	.....	0	0	Clear	
Winnemucca, Nevada	25.56	649.2	29.92	760.0	58	14.4	37	NE	14	6.3	.....	0	0	.....	.....	0	0	Clear	
Wood's Holl, Massachusetts	29.86	758.4	29.90	759.4	69	20.6	80	SW	7	3.1	.....	2cs	0	Calm	.....	0	0	Fair	
Yankton, Dakota	28.62	726.9	29.85	758.2	70	21.1	70	N	1	0.4	.....	.....	10s	.....	Calm	0.02	0.5	Cloudy	
Yuma, Arizona	29.61	752.1	29.75	755.6	70	21.1	66	Calm	0	0	.....	0	0	.....	.....	0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.02	559.3	.....	.....	55.0	12.8	72	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I	30.04	763.0	30.10	764.5	80	26.7	82	Calm	0	0	.....	4cs	0	Calm	.....	0	0	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.03	762.7	30.04	763.0	83.9	28.8	69	E	6	2.7	.....	8c	0	S	.....	0	0	Fine	Maxwell Hall.
Navassa, W. I	29.95	760.7	30.03	762.7	80.5	26.9	78	E	10	4.5	.....	2k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.04	763.0	30.04	763.0	82	27.8	88	E	.....	.....	2	0	4k	.....	.....	.....	.....	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.43	747.5	29.99	761.7	78	25.6	84	Calm	.....	.....	0	8ck	2s	.....	.....	0.02	0.5	.....	Francesco J. Cisneros.
§ Rivas, Nicaragua	.....	.....	.....	.....	77	25	.....	SE	.....	.....	.....	2cs	4k	.....	SE	0.08	2.	Cloudy	Earl Flint.
Santiago de Cuba, W. I	30.04	763.0	30.06	763.5	83	28.3	70	Calm	0	0	.....	0	0	.....	.....	0	0	.....	Robert Mason
St. Thomas, W. I	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. O. Gyllich.
York Factory, B. A	29.99	761.7	30.04	763.0	42.0	5.6	96	NE	13	5.8	.....	5ck	4s	NE	NE	0	0	Cloudy	J. Fortscue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,263 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5 22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.07	763.8	75	23.9	78	NE	2	0.9			8		SE					Fair	
§Navy Yard, Portsmouth, N. H.	29.90	759.4	66	18.9	84	Calm	0	0			2			0.3	8.			Fair	
Naval Hospital, Yokohama, Japan	30.08	764.0	61	16.1	94	NE			1		10n		NE	0.22	5.6			Light rain	
§Adams, S. 6° 17′, W. 81° 12′	30.03	762.7	67	19.4	89	SSE			2		10		SSE					Cloudy	
§Alaska, S. 13° 52′, W. 76° 32′ *	29.98	761.5	63	17.2	78	Calm			0		10					Long	SW	Cloudy	
§Alert, N. 31° 30′, E. 139° 59′	29.76	755.9	75	23.9	95	E			4		10		E			Mod'ate	E	Rainy	
§Alliance, N. 45° 35′, W. 53° 55′	29.59	751.6	47	8.3	100	ESE			2		10		Calm	Light	Light	Smooth	E	Rainy	
§Ashuelot, Nagasaki, Japan	29.88	758.9	70	21.1	95	SW			1		10		Calm			None		Rainy	
§Colorado, New York, N. Y.	29.91	759.7	74	23.3	76	SW	1	0.4			0							Misty	
§Constellation, N. 40° 27′, W. 73° 56′	29.79	756.7	72	22.2	85	W			2		0					Smooth		Hazy	
§Constitution, Navy Yard, Brooklyn, N.Y.	29.90	759.4	74	23.3	72	WSW	2	0.9			2		Calm					Clear	
§Franklin, Off Navy Yard, Norfolk, Va	29.97	761.2	77	25.0	86	SW	4.8	2.1			0			0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal.	29.97	761.2	66	18.9	55	SW	2.4	1.1			2		SW	0	0			Clear	
§Jamestown, Sitka, Alaska *	29.93	760.2	45	7.2	92	Calm			0		10					Mod'ate		Light rain	
§Kearsarge, Boston, Mass	29.94	760.5	71	21.7	71	SW			1		8		SW			Smooth		Cloudy	
§Lackawana, Panama Bay, Panama†	30.03	762.7	78	25.6	95	WNW			1		8		WNW					Fair	
§Marion, S. 45° 37′, W. 56° 49′	29.62	752.3	51	10.6	100	NNE			4		10					Smooth	N;E	Rainy	
§Michigan, Erie, Pa.	29.85	758.2	72	22.2	80	SW			2		0							Clear	
§Minnesota, Newburgh, N. Y. *	29.93	760.2	75	23.9	81	SSW			0–1		2		Calm					Hazy	
§Monocacy, Chefoo, China	29.96	761.0	69	20.6	95	SSE			1		2			0	0			Clear	
§New Hampshire, Port Royal, S. C.	30.08	764.0	77	25.0	86	NW	3	1.3			9		Calm	0	0			Hazy	
Nipsic, N. 31° 15′, E. 29° 42′	29.97	761.2	79	26.1	74	NNE			4		2		NW			Long	NW	D. clouds	
§Onward, Chimbote, Peru	29.97	761.2	66	18.9	84	ESE			1		10		NW			Long	W	Cloudy	
§Palos, Shanghai, China	29.94	760.5	68	20.0	100	ESE			1		2		SE					Clear	
§Passaic, Washington, D. C.	30.00	762.0	77	25.0	91	SW			1		0			0	0			Clear	
§Pensacola, N. 38° 42′, W. 123° 50′	29.91	759.7	52	11.1	86	Calm			0		10					Smooth		Cloudy	
§Portsmouth, N. 36° 20′, W. 35° 30′	30.33	770.4	71	21.7	85	WSW			2		5		S			Mod'ate	NW	Fair	
§Powhatan, New York, N. Y.	29.91	759.7	75	23.9	77	Calm			0		2							Hazy	
§Quinnebaug, Stockholm, Sweden	29.66	753.4	57	13.9	81	ENE			2		10		Calm			Smooth		Cloudy	
§Richmond, Kobe, Japan	29.94	760.5	66	18.9	84	NE			4		10		Calm	0.6	15.			Overcast	
Rio Bravo, Brownsville, Texas †	30.01	762.2	77	25.0	95	SSE	1	0.4			2		S	0	0			Fair	
§Saratoga, Naples, Italy	30.01	762.2	75	23.9	64	SW			4		0			0	0			Clear	
§Shenandoah, Buenos Ayres, Argentine Republic	29.72	754.9	63	17.2	89	N			4		10		N			Mod'ate	N	Cloudy	
§St. Louis, League Island, Pa.	29.92	760.0	74	23.3	90	W	2	0.9			8		W	0	0			Cloudy	
Swatara, N. 23° 00′, E. 117° 18′ †	29.90	759.4	81	27.2	96	SE			2		2		SE			Smooth		Clear	
§Tennessee, New York, N. Y.	29.92	760.0	83	28.3	64	W			0–1		2		Calm			Smooth		Hazy	
§Ticonderoga, Nagasaki, Japan	29.86	758.4	71	21.7	100	SW			2		10		SW			Smooth		Rainy	
§Trenton, N. 40° 10′, W. 11° 52′	30.28	769.1	64	17.8	73	N			1		2			2 hours		None		Cloudy	
§Vandalia, Boston, Mass.			72	22.2	58	WNW			2		8		NW					Fair	
§Wabash, Boston, Mass.	29.91	759.7	72	22.2	62	WSW	1	0.4			8			0	0			Cloudy	
§Wachusett, Valparaiso, Chili	29.80	756.9	56	13.3	??	NW			3		10			Showers		Long mod'ate	N	Raining	
Wyoming, Tangier, Marocco	30.17	766.3	67	19.4	84	NW			2–3		2		NW			Smooth	NW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 41′, W. 18° 22′	29.78	756.4	54	12.2		SW			4		10		SW			Mod'ate	SW	Sprinkling	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 45° 31′, W. 36° 43′	30.09	764.3	68	17.2	67	SE			2		7		W	Mod'ate	Mod'ate	Mod'ate	WSW	Cloudy	
S. S. Ohio, Henry Morrison, N. 41° 51′, W. 43° 50′ †	29.96	761.0	75	23.9	95	SW			3		8		SW	1 h'r	1 h'r	Mod'ate	SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§ S. S. Newbern, W. Metzger, N. 36° 49′, W. 122° 15′ †	30.05	763.3	53	11.7	93	NNW			2		10		NW	0	0	Small	WNW	Cloudy	
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains N. 48° 43′, W. 22° 04′	29.39	746.5	61	16.1	77	N			6		8		N	H'vy	show ers	Mod'ate	N	Gloomy	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 44° 12′, W. 42° 49′	29.88	758.9	69	20.6	90	SW			5		5		SW	3 h'rs	3 h'rs	Rough	NW	Raining	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China †	29.92	760.0	88	31.1	92	SE			2		k		Var.	0	0	Smooth		D. clouds	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 40° 49′, W. 150° 06′ *	29.71	754.6	68	17.2	89	ESE			6		9		SE	0.12	3.0	Conf'sd	SW;SE	Drizzling	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§ S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon, E. Polemann, N. 48° 04′, W. 126° 26′ †	29.96	761.0	53.2	11.8		ESE			1		10					Smooth	NW	Hazy	J. M. Lachlan.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander N. 34° 02′, W. 118° 50′ †	30.02	762.5	56	13.3		Var.			1		10		Calm			Mod'ate	W	Cloudy	Harrison & Marshall.
S. S. Orizaba, C. B. Johnson																			
S. S. State of California, G. Dobney, Portland, Oregon †	29.85	758.2	55	12.8		Calm			0		0							Clear	
S. S. Victoria, H. M. Haywood, Nanaimo Harbor, Vancouver I'd †	30.00	762.0	62	16.7	61	NW			5		2		NW					Clear	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.
REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 7° 05′, W. 81° 34′....†	29.90	759.4	79	26.1	91	Calm			0		5		NNE			Small	SW	Fair	F. A. Johnston.
§S. S. Australia, S. 28° 09′, W. 178° 36′....†	29.88	758.9				NNW			3		5						SW	Clearing	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	29.79	756.7	68	14.4	76	N			4		8		N					Overcast	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 27° 25′, W. 114° 50′...†	29.99	761.7	60	15.6	88	NW			3		0			0	0	Mod'ate	NW	Hazy	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 45° 24′, E. 165° 46′....†	30.18	766.6	44	6.7	84	N			2		10		NW	0	0	Light	NE	Misty	
§S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama.....†	29.91	759.7	80	26.7	100	WNW			2		8		NW	0	0			Fair	
§S.S. Dakota, H. G. Morse, Esquimalt, Vancouver's I'd....†	29.97	761.2	50	10.0	87	Calm			0		2		W	0	0	None		Clear	
§S.S. Granada, J. M Cavarly N. 27° 44′, W. 115° 54′...†	30.00	762.0	60	15.6	88	NNW			4		10k		NNW	0	0	Long	NW	Cloudy	C. T. Rode.
§S. S. Idaho, E. Alexander, N. 38° 36′ W. 124° 25′...†	29.94	760.5	60	15.6		SE			1		5		SE	0	0	Smooth	SE	Fair	E. Alexander.
§S.S. Zealandia, R. C. Ghest, S. 22° 29′, W. 174° 45′.....	29.85	758.2	69	20.6		Var.			2		8		W			Long	SW	Raining	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes, N. 40° 25′, W. 62° 52′....†	29.78	756.4	65	18.3		NW			6		8		NW	Showers.		High swell	NW	Squally	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry																			J. Jones.
S. S. Celtic, B. Gleadell, N. 42° 36′, W. 53° 05′.....†	29.54	750.3	60	15.6		NW			3		8		WNW	Heavy 1 h'r	Heavy 1 h'r	Mod'ate	WNW	Fair	
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	29.99	761.7	79	26.1		SW			1		5		SW	1.01	25.7			Threatening	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Boston, Mass.....	29.90	759.4	71	21.7	75	Calm	0	0			Fog			0	0			Foggy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 37° 25′, W. 73° 15′...†	29.99	761.7	75	23.9		SW			1		0			0	0	Smooth.		Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 15° 45′, W. 32° 10′....*†	30.14	765.5	77	25.0		NE			5		10		NE			Mod'ate	NE	Cloudy	B. F. Woodbury.
Schr. Delia Hodgkins, N. 54° 58′, W 51° 14′.....†	30.11	764.8				E			3		10		E			Long	E	Foggy	S. S. Miner.
Brigantine George, W. H Champlin, N. 35° 06′, W. 68° 08′. ....†	30.24	768.1	75	23.9		W			3		0			0	0	Mod'ate	W	Clear	
Iron Cross, W. Randall, N. 31° 10′, W. 78° 12′....*	30.16	766.1	86	30.0	72	S			1-2		2		W	0	0		SE	D. clouds	W. Randall.
British Barque Ivigtut, Adam Smith. N. 41° 20′, W. 62° 30′....*	29.79	756.7				N			5		10		S			Mod'ate cross		Cloudy	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.67	753.6	48	8.9	100	NE			5		10		NE	6 h'rs	8 h'rs			Rain & fog	James S. Garvin.

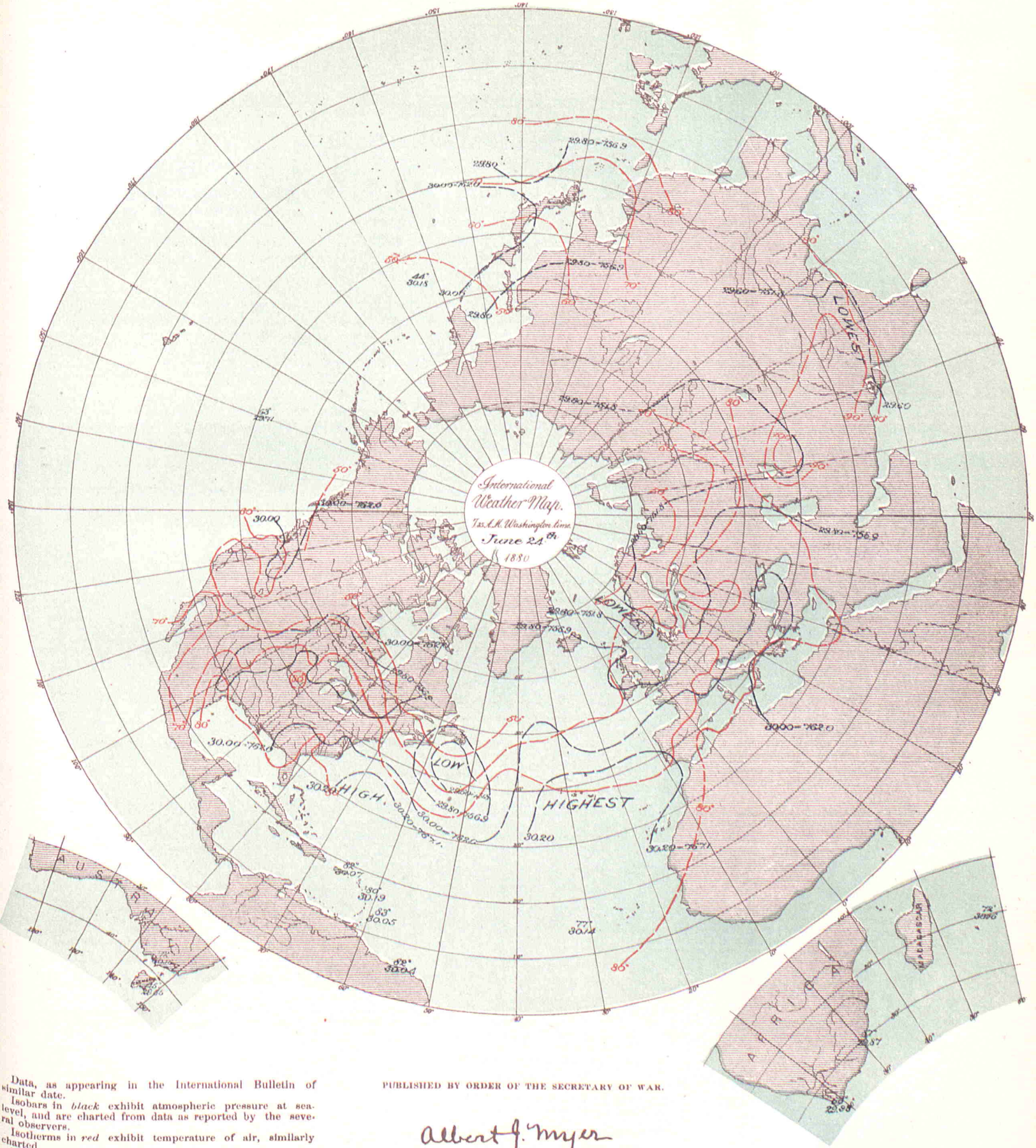
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSO'D.) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 25, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.06	763.4	79.5	26.4	75	WNW			1		0			0	0	Clear.	Metge.
Algiers			30.04	763.0	77.0	25.0	65	W			6		1			0	0	Very fair	Nicolas.
La Calle			30.00	761.9	75.4	24.1	67	NE			2		0			0	0	Clear	Fonfrède.
Tunis			29.99	761.8															Jacques
Sfax			30.08	764.1															Gau.
Saida			30.05	763.2															Charon.
Tebessa			30.00	762.1	89.6	32.0	19	N			1		1			0	0	Very fair	Watrin.
Geriville			30.04	763.0	93.2	34.0	52	ESE			6		0			Inap.	Inap.	Clear.	Lonchamp.
Laghouat			30.04	763.0	95.7	35.4	17	S			8		0			0	0	Clear.	Herlin.
Biskra			30.05	763.2	96.4	35.8	36	WNW			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.34	745.3	29.87	758.8	70.3	21.3	58	S			4		4			0.008	0.2		Prof. Ivan Stozir.
Cracow, I. R. Observatory	28.97	735.7	29.72	754.8	60.4	15.8	89	NNW	5.4	2.4			10			0.718	18.1		Dr. Wierzbicki.
Eperies	28.81	731.8	29.66	753.4	64.4	18.0	84	Calm			0		10n			0.463	11.50		Julius Mikolik.
Gratz	28.65	727.7	29.86	758.5	68.4	20.2	76	SW			1		6			0.925	23.5		Andreas Rospini.
Hermannstadt	28.39	721.1	29.76	756.0	69.1	20.6	67	NW			3		6			0.262	6.65		Prof. A. Gottschling.
Kremsmünster, Observatory	28.58	725.8	29.89	759.1	62.2	16.8	70	NW			4		5			0.276	7.0		The Staff.
Lemberg	28.72	729.5	29.68	753.8	64.2	17.9	82	W			2		10			0.063	1.6		Dr. T. Stanecki.
Pola	29.82	757.4	29.93	760.2	75.9	24.4	54	WSW			1		2			0	0		I.R. Hydrographic Office.
Szathmar	29.26	743.3	29.72	754.8	64.8	18.2	88	SE			3		8			0.354	9.0		Pet. Pancsics, S. J.
Szegedin	29.54	750.7	29.83	757.7	61.9	16.6	83	W			1		10			0	0		Karl Stancel.
Trieste	29.80	756.8	29.90	759.4	78.8	26.0	51	W			1		0			0.402	10.2		P. Busin.
Vienna	29.13	739.9	29.85	758.2	64.9	18.3	61	W			4		7			0.425	10.8		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.65	753.0	29.84	758.0	62.8	17.1	73	W			2	3	3	W	W	0.764	19.40		Royal Observatory.
Furnes	29.85	758.3	29.88	758.9	64.9	18.3	75	NW			3		4			0	0		M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 29, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
Aberdeen	29.70	754.4	29.79	756.7	59.6	15.3		SSE	14	6.3			3			0.180	4.57	Blue sky	W. Boswell.
Ardrossan	29.79	756.7	29.80	756.9	60	15.6		SW			2		5					D. clouds	G. Carrick.
Armagh, (Observatory)	29.61	752.1	29.84	757.9	60.4	15.8		N	2	0.9			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.80	756.9	61.7	16.5		NW	3	1.3			9					Overcast	John Hartnup.
Bolton (Sharples)	29.27	743.4	29.77	756.1	59.0	15.3		NNW					10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.41	747.0	29.81	757.2	59.1	15.1	83	SE			2		10			0.01	0.3	Overcast	J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	82	27.8		NE			2		4					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	29.73	755.1	29.82	757.4	59.5	15.3		WSW			1		10					Raining	H. Todd.
Cardington			29.79	756.7	66.0	18.9		SE			0.2		10					Overcast	John McLaren.
Chatham (School M. E.)	29.72	754 9	29.84	757.9	62.0	16.7		Calm			0		9k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.80	756.9	29.84	757.9	59	15.0		NE			3		8					Overcast	J. Mac Gowan.
Dover	29.81	757.2	29.84	757.9	60	15.6		WSW			4		7					Misty	J. Costello.
Falmouth (Observatory)	29.60	751.8	29.83	757.7	58.2	14.6		SSE			2		10					Raining	The Staff.
Fort Napier, Natal	27.85	707.4	30.00	763.5	71.2	21.8		SW			2		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.65	753.1	29.88	758.9	89	31.7		W			1		10					Drizzling	
Galway (Queen's College)			29.77	756.1	65.5	18.6		NNW			2		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.00	762.0	30.05	763.3	74.6	23.7		W			5		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.58	751.3	29.78	756.4	66.1	18.9		SSW			2		7					D. clouds	D. G. Maclean.
Great Yarmouth	29.83	757.7	29.83	757.7	59	15.0		NE			3		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	29.65	753.1	29.82	757.4	67.7	19.8		WSW			1		8					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.64	752 8	29.86	758.4	59	15.0		SSE			1		8					Showery	Dr.S.E.Hoskins, F.R.S.
Helston	30.01	762.2	30.13	765.3	63	17.2		E			2							Raining ?	M. P. Moyle.
Holyhead	29.79	756.7	29.81	757.2	64	17.8		SSW			2		3					D. clouds	John Tilston.
Jersey	29.61	752.1	29.90	759.4	58.0	14.4		SSE			1		10			Blank	Blank	Overcast	J. Fisher.
Kew (Observatory)	29.79	756.7	29.82	757.4	66.2	19.0		WSW	6	2.7			6					Threatening	The Met'g'l Office.
Leicester (Museum)	29.56	750.8	29.81	757.2	62.0	16 7		NE			1		10					Overcast	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.89	759.2	29.96	761.0	78.4	25.8		N			2		0					Blue sky	A. King.
Nairn	29.67	753.6	29.76	755.9	72	22.2		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.13	765.3	85.0	29.4		SE			2		4					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.64	752.8	29.83	757.7	60.3	15.7		NNE			2		10kd		NNE	0.171	4.35	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.30	744.2	29.81	757.2	61.1	16.2		N			2		9					Gloomy	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.58	751.3	29.84	757.9	67	19.4		SW			1		4					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.76	755.9	29.84	757.9	64.0	17.8		S			4		10					Overcast	John Merrifield.
*Roche's Point	29.74	755.4	29.87	758.7	68	20.0		SE			2		5					⅗ clouded	Wm. Kennedy.
St. Ann's Head	29.67	753.6	29.83	757.7	59	15.0		SSE			1		4					Misty	John C. Walker.
Sandwick Manse, Orkneys			29.80	756.9	57.1	13.9		N	11	4.9			3					D. clouds	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.80	756.9	29.86	758.4	79.0	26.1		SW			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.57	751.1	29.84	757.9	60.4	15.8		SW			1		10			0.04	1.0	Overcast	W. F. Cooper.
Silloth Rectory	29.78	756.4	29.81	757.2	68.0	20.0	64	W			1		5			0	0	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.82	757 4	64.0	17.8		WSW	6	2.7			8			0	0	D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.61	752.1	29.82	757.4	67.5	19.7		SW			2		4					D. clouds	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	29.83	757.7	29.84	757 9	60	15.6		S			4		8					Raining	W. Newcombe.
Valencia (Observatory)	29.76	755.9	29.79	756.7	59.7	15.4		WSW	13	5.8			10					Raining	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																0	0	Threatening	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.10	764 5	30.14	765 5	65.8	18.8	73	NNW	12.2	5.5		9	10			0.02	0.5	Cloudy	Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			29.52	749.8	51.0	10.6	87	NW			1		10k			0	0	Fine	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			29.81	757.2	64.2	17.9		E			1		2k			0	0	Squally	C. Meldrum.
Mauritius (Observatory)	30.01	762.2	30.20	767.1	71.1	21.7	61	SE	17.5	7.8		0	2		SSE	0	0	Fine	R. L. J. Ellery.
Melbourne (Observatory)	29.55	750.6	29.64	752.8	50.7	10.4	81	NNE	12	5.4			4			0	0		J. Youngclause.
Monach Lt-house, Hebrides			29.83	757.7	59	15.0		Calm			0	5	5	N		0	0		Robert Burnet.
North Unst, Shetland I's			29.75	755.6				N			4	4	5	N		0	0		

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Inches.	Barometer. Millimeters.	Reduced to sea-level. Inches.	Reduced to sea-level. Millimeters.	Temperature. Fahrenheit.	Temperature. Centigrade.	Relative Humidity.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer
H. M. S. Alert																			Capt.J.P.Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Sunnewyne																			Capt. Jas. Buchan.
Ship British Commodore																			Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia, N 53° 30′, W. 26° 30′			30.07	763.8	55	12.8		NE			2		10			2	NE	Overcast	Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German																			Capt. C. D. Coxwell
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
Iron Cross, N 32° 00′, W. 77° 10′			30.20	767.1	84	28.9		S			1		3			2	W	D. clouds	Capt. W. Randall.
Ship Lochee, S. 37° 00′, E. 20° 20′			29.94	760.5	64.6	18.1		WNW			7		10					Showery	Capt. J.Raeburn, R.N.R.
Barque Queen of Cambria, N 50° 09′, W. 8° 31′			29.73	755.1	58.6	14.8		SSE			5		8					D. clouds	Capt. M. Parry.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson
S. S. Sunbeam																			Capt. C. M. Dobson.
S. S. Wyberton, N. 36° 20′, W. 4° 22′			30.07	763.8	67.5	19.7		Calm			0		0					Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	64.4	18.0	95	SE			2	9s	1d		NE	0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.60	751.9	29.65	753.1	64.8	18.2	67	WNW			2		10						
Fanöe	29.68	753.9	29.70	754.4	59.0	15.0	64	W			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.81	757.2	29.85	758.3	52.9	11.6	76	E			2		8						
Thorshavn (Faröe)	29.79	756.6	29.82	757.5	51.8	11.0	69	NE			5		10						
Vestervig	29.52	749.9	29.62	752 3	56.3	13.5	80	WSW			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.41	746.9	29.96	760.9	63.5	17.5	96	S			1		10n			0.031	0.8	Raining	Collignon, Director.
Amiens, Normal School	29.82	757.4	29.93	760.1	70.2	21.2	59	N			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.62	752.3	29.87	758.7	58.1	14.5	93					c	7n	E		0.020	0.50		Klein, Commandant.
Avignon, Normal School	29.93	760.2	30.01	762.2	75.6	24.2	49	W			1		10			0	0	Covered	Giraud, Director.
Bar-sur-Seine	29.39	746.6	29.93	760.3	67.1	19.5	54	W			2		8kn		W	0.248	6.3	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	29.64	752.8	29.89	759.3	69.3	20.7	56	WSW			2		10		WSW	0.089	2.25	Covered	Frère Eugene Marie.
Besançon, Normal School	29.10	739.0	30.04	762.9	66.2	19	62	SSW			1		10		SSW	0.453	11.5	Covered	A. Carré, Director.
Bordeaux	29.67	753.6	29.87	758.6	70.3	21.3	56	SE			1		8		WSW	0.047	1.2	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.10	739.1	30.02	762.6	68.7	20.4	54	E			1		10kn	SW	SW	0.08	2.	Covered	Marlot, Director.
Bourges, Normal School	29.45	748.1	29.99	761.8	67.3	19.6	96	S			1		kn		S	0.024	0.6		M. Gence, Director.
Brest, Naval Observatory	29.58	751.3	29.82	757.4	59.4	15.2	87	S			2		10		S	0.039	1.00	Raining	Ch. de Rermaree, Dir.
Caen, Normal School	29.78	756.3	29.85	758.2	66.4	19.1	79	S			1		5			0	0	Cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.50	749.2	29.89	759.3	73.8	23.2	47	W			1		2		W	0	0	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.64	752.8	29.95	760.7	64.2	17.9	75	SW			1		10		WSW	0.418	10.5	Covered	Jadot, Director
Chartres, Normal School	29.35	745.4	29.90	759.5	63.5	17.5	76	S			1		8		SW	0.059	1.5		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.59	726.1	29.90	759.5	68.9	19.4	51	SE			1		10			0.205	5.2		Alluard, Director.
Commercy, Normal School	29.09	738.9	29.93	760.2	62.6	17	76	W			3		kn	W	W	0.402	10.2		Dr. Coullet, Director.
Commune de Gréasque*	28.92	734.6	30.07	763.6	70.5	21.4	40	W			3		5		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.19	741.5	29.93	760.3	69.1	20.6	65	W			1		kn			0.098	2.5		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.74	755.3	29.95	760.7	62.6	17.0	88	NE			1		5		E	0.035	0.9	Cloudy	Mouillot, Director.
Le Mans, Normal School	29.63	752.5	29.93	760.2	61.3	16.3	82	SW			1		10		SSW	0.402	10.2	Covered	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.06	738.1	29.97	761.1	67.5	19.7	61	SW			1		5kn		S			Cloudy	M. Cadoret, Director
Lorient, Naval Observatory	29.76	755.9	29.86	758.4	61.5	16.4	79	S			6		2		S	0	0	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.36	745.8	29.97	761.2	68.5	20.3	45	S			1		10kn		S	0.043	1.1	Covered	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.74	755.3	30.00	762.1	70.3	21.3	46	W			2		8		WNW	0	0		E. Stephan, Director.
Mirecourt, Normal School	28.92	734.5	29.94	760.4	63.7	17.6	84	SW			1		kn		SW	0.04	1.		Barbier, Director.
Mont-Louis	24.83	630.7	30.07	763.7	58.1	14.5	59	WSW	15.0	6.7			7		W	0.087	2.2		M. Cave, for Dr. Fines.
Nice	29.93	760.2	29.97	761.1	74.8	23.8	69	SE			2		10	S	SE			Rainy	Capt. Boissière, Director.
Nismes, Normal School	29.79	756.7	29.99	761.8	74.5	23.6	43	S			1		2		S	0	0	Slightly cld'y	M. Boyer, Director.
Perpignan	29.85	758.2	29.95	760.8	67.8	19.9	75	NE	9.4	4.2			8		W	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.52	571.6			43.2	6.2							10		SW	0.331	8.4		M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.96	735.6	30.00	761.9	69.1	20.6	51	Calm			0		5	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.14	638.5			45.7	7.6	92	SSW			2		10			0.783	19.9		Alluard, Director.
Rochefort, Naval Obs'y	29.89	759.3	29.93	760.1	63.3	17.4	82	SE			1		10	SE	SE	0.59	15.	Covered	Lt. E. Devante, Director
Rouen, Normal School	29.78	757.8	29.92	760.0	66.4	19.1	53	SW			1		5		S	0.055	1.4	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.83	757.6	29.86	758.4	59.0	15.0	88	SSE			2		8	SSE	SSE	0.178	4.53	Light rain	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.76	755.9	29.93	760.1	65.5	18.6	64	SW			2		8		SW	0.067	1.7		E. Renou, Director.
Tarbes, Normal School	28.82	732.1	29.90	759.5	68.0	20	55	S			1							Threatening	T. Huguet, Director.
Toulouse, Observatory	29.24	742.6	29.90	761.0	71.6	22.0	50	SSE			3		1	W		0	0	Clear	B. Bailland, Dir.
Tours	29.74	755.5	29.94	760.5	62.6	17.0	70	S			1		10		SSW	0.094	2.4	Covered	M. de Tastes.
Versailles, Observatory	29.43	747.4	29.92	760.0	65.5	18.6	57	SW			2					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.23	742.5	29.91	759.8	75.2	24	39	ESE			1		10			0.047	1.2	Covered	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.25	768.3	30.28	769.0	80.6	27										0.43	11.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.65	753.0			67.5	19.7	64	S			2		7		WSW	0.055	1.4		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.91	759.6	29.93	760.2	68.5	20.3	92	E	7.6	3.4			1k			0	0	Clear	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 9:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m, or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,012.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Rouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.02	737.2	29.88	759.0	68.7	20.4	93	SW			6		7n	W		0.217	5.5	Raining	Prof. Dr. Hoh.
Berlin	29.60	751.8	29.76	756.0	64.8	18.2	62	SW			5		10			0.122	3.1	Thunder-storm.	Prof. Dr. Arndt.
Breslau	29.26	743.3	29.79	756.7	68.0	20.0	49	WSW			2		9			0.468	11.98	Raining	Royal University Obs'y
Carlsruhe	29.48	748.8	29.89	759.3	65.5	18.6	73	SW			2		10	SW		0.138	3.5	Raining	Albert Senz.
Cassel	29.21	742.0	29.82	757.3	64.8	18.2	63	W			2		7	SW		0.009	0.23		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.52	749.8	29.88	759.0	69.4	20.8	55	W			2		8			0.075	1.9		Physical Society.
Friedrichshafen	28.54	724.8	29.94	760.4	64.8	18.2	59	SW			2		3	SW		0.209	5.3		Chief Telegrapher Wilhelm.
Hamburg	29.69	754.1	29.76	756.0	58.8	14.9	84	WNW			3		10			0.417	10.6		Dr. Reinhold Kleeman.
Kiel	29.76	754.3	29.71	754.7	64.4	18.0	64	W			3		8			0.385	9.78		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.63	752.6	29.71	754.6	67.6	19.8	64	SW			2		8	S		0.004	0.1		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.43	747.4	29.84	757.8	65.8	18.8	62	WSW			3		9	W		0.028	0.7	Thunder-storm.	Prof. Dr. Bruhns, Privy Counselo
Magdeburg	29.61	752.0	29.83	757.7	68.2	20.1	56	WSW			5		8ks	W		0	0		Dr. Assmann.
Memel	29.66	753.4	29.71	754.6	67.3	19.6	70	W			2		2cs						Reinbrecht & Issermann
Munich	28.14	714.8	30.00	762.0	63.9	17.7	48	W			6		8	W		0.094	2.4		Dr. C. Lang.
Neufahrwasser	29.76	754.3	29.71	754.7	66.2	19.0	74	E			2		7			0.287	7.3		A. Lothes.
Neustadt (Palatinate)	29.37	746.0	29.89	759.3	65.1	18.4	58	W			2		7	W		0.244	6.2	Rainy	Reallehrer Dicknether.
Posen	29.45	748.0	29.73	755.1	68.5	20.3	49	NW			4		10			0.004	0.1		Prof. Dr. Magener.
Strassburg (in Alsace)	29.41	747.0	29.94	760.5	69.1	20.6	53	SW			4		6	WSW		0.099	2.51	Raining	Imp. University Observatory.
Stuttgart	28.98	736.0	29.86	758.4	59.0	15.0	82	W					10			0.051	1.3	Raining	Prof. Dr. Schoder.
Thorn	29.50	749.4	29.69	754.1	67.6	19.8	57	E			3		9			0.240	6.1		Dr. Cunerth.
Weissenburg (Bavaria)	28.46	722.8	30.03	762.8	63.1	17.3	59	WNW	6.0	2.7			8ckn		NW	0.055	1.4		Reallehrer J. Hopfner.
Wustrow	29.71	754.5	29.73	755.2	63.3	17.4	77	SW			3		8s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.52	749.8	29.89	759.3	84.2	29.0		SW			3.0		0					Clear.	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.49	749.0	29.54	750.3	85.1	29.5	79	S	36.6	16.4			7	SE	SW	0	0	Misty	
Deesa	29.08	738.5	29.54	750.2	88.3	31.3	54	WSW					9	SE		0.12	3.0	D. clouds	
Bombay	29.68	753.8	29.72	754.8	77.3	25.2	91	W	19.0	8.5			10		SW	2.61	66.3	Overcast	
Poona (Yarrowda)	27.86	707.7	29.74	755.3	70.8	21.6	85	WSW	19.0	8.5			10	W	W	0.31	7.9	Overcast	
Belgaum	27.26	692.3	29.83	757.6	68.5	20.3	93	W	11.0	4.9			9	W	W	0.20	5.1	Showery	
Lahore	28.73	729.8	29.44	747.8	98.2	36.8	45	Calm	1.9	0.8			7			0	0	D. clouds	
Roorkee	28.60	726.4	29.47	748.6	87.6	30.9	62	E	5.0	2.2			6			0.07	1.8		
Agra	28.90	734.0	29.44	747.7	100.6	38.1	42	E	7.0	3.1						0	0		
Nagpur	28.50	723.8	29.53	750.1	79.7	26.5	84	Calm	1.9	0.8			9		NW	0.04	1.0	Gloomy	
Jubbulpore	28.16	715.4	29.51	749.6	81.8	27.7	75	E	1.7	0.8			8			0.03	0.8	Overcast	
Lucknow	29.11	739.5	29.48	748.7	93.0	33.9	53	ENE	5.4	2.4			4		SW	0	0	D. clouds	
Allahabad	29.16	740.7	29.46	748.3	94.0	34.4	60	Calm	1.9	0.8			8			0	0	D. clouds	
Patna	29.38	746.2	29.56	750.7	87.0	30.6	73	E	2.9	1.3			4	E	E	0	0	D. clouds	
Hazaribagh	27.58	700.6	29.56	750.9	81.6	27.6	76	E	11.5	5.1			9		E	0.03	0.8	Thunder storm	
Cuttack	29.47	748.4	29.55	750.5	80.2	26.8	86	Calm	0.9	0.4			9			0.71	18.0	D. clouds	
Calcutta (Alipore)	29.54	750.2	29.56	750.7	81.1	27.3	91	SE	3.0	1.3			6		SE	0.38	9.6	Showery	
Goalpara	29.20	741.7	29.60	751.9	81.9	27.7	73	ESE	2.6	1.2			0			0.72	18.3	Blue sky	
Chittagong	29.54	750.4	29.64	752.7	81.9	27.7	79	ESE	5.7	2.6			8			0	0	D. clouds	
Sibsagar	29.30	744.1	29.62	752.4	85.3	29.6	79	ENE	2.7	1.2			4			0.08	2.0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.53	750.1	29.93	760.2	70.2	21.2	56	W	2.5	1.1			5			1.224	31.1		Prof. Giovanni Clodig.
Milan	29.38	746.2	29.88	758.9	74.5	23.8	50	S	3.1	1.4			4	SW		0.449	11.4		Prof. Schiaparelli.
Padua	29.81	757.1	29.92	759.9	73.2	22.9	50	S	3.1	1.4			3	WSW		0.445	11.3		Prof. Dott. Lorenzoni.
Moncalieri	28.98	736.1	29.86	758.4	74.8	23.8	46	S	0	0			5	E		0	0		Prof. P. F. Denza.
Genoa	29.78	756.3	29.97	761.1	68.9	20.5	77	SW	8.7	3.9			4	S		0	0		Prof. G. M. Garibaldi.
Mondovi	28.00	711.1	29.84	758.0	74.3	23.5	43	SE			4		5	W		0	0		Prof. D. C. Bruno.
Pesaro	29.88	758.9	29.93	760.1	71.4	21.9	55	NE	9.4	4.2			1			0	0		Prof. Luigi Guidi.
Florence	29.71	754.7	29.97	761.1	77.0	25.0	77	WSW			4		7			0	0		Cav. F. Meucci.
Leghorn	29.95	760.6	30.03	762.7	72.0	22.2	59	WSW	8.1	3.6			4			0.020	0.5		Prof. P. Monte.
Rome	29.82	757.3	29.99	761.7	77.5	25.3	48	SW					2			0	0		Prof. P. Tacchini.
Lecce	29.71	754.5	29.95	760.7	81.0	27.2	42	ENE	12.5	5.6			2			0	0		Prof. C. De Giorgi.
Cosenza	29.10	739.1	29.95	760.7	86.0	30.0	65	NW	7.4	3.3			0			0	0		Prof. D. Conti.
Cagliari	29.81	757.1	30.00	762.0	80.1	26.7	29	NW			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.79	756.7	30.04	763.0	75.2	24.0	54	ENE	8.1	3.6			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.90	759.4	29.94	760.5	81.1	27.3	55	NE	4.9	2.2			0			0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.49	749.0	30.00	761.9	77.0	25.0	54	ESE	4.9	2.2			4			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					67.6	19.8	72	NE	3.0	1.3			2s;cs			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.72	754.9	29.92	759.9	66.4	19.1	84	N	2.5	1.1		c	1cs			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.72	754.9	29.79	756.6	64.9	18.3	95	N	7.3	3.3			10n			0.425	10.79	Light rain	The Staff.
Wakayama	29.75	755.6	29.80	756.9	67.2	19.6	98	NW	4.1	1.8			10n			0.045	1.14	Raining	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.4	29.99	761.8	59.9	15.5	76	Calm			0		9ks			0	0	Very cloudy	Prof. L. Perez.
Guanaxuato	23.65	600.8			58.1	14.5	81	Calm	0	0		5c	0	W	Calm	0	0		Vicente Fernandez.
Leon	24.39	619.5	30.00	762.1	63.5	17.5	78	NE			1	1c	0	NE		0	0		Prof. M. Leal.
Mazatlan	29.63	752.5	29.88	759.0	77.7	25.4	80	E			1	6cs	0	N		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.05	585.5	29.98	761.5	58.5	14.7	82	W	0.9	0.4			10k			0.09	2.4		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascallientes)	23.89	606.8	29.78	756.5	63.3	17.4	71	SW			2	4c	1k		NE	0	0	½ clouded	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.47	596.1	30.17	766.3	58.1	14.5	58	Calm	0	0		2ck	0	E		0.40	10.1	Clear.	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.14	765.6	61.0	16.1	53	E			1	2	1	W	E	0	0	Hazy	G. Barroeta, M D.
Tlacotalpam	29.84	757.8	29.85	758.1	78.6	25.9	92	SW			2	1	7	NW	SW	0	0	Cloudy	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.60	574.0	30.15	765.9	59.2	15.1	77	Calm			0	0	0			0	0	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.86	758.4	29.86	758.4	63.3	17.4		W			4					0.079	2.0		
Groningen	29.78	756.1	29.78	756.5	61.9	16.6		NNW			3					0	0		
Helder	29.81	757.2	29.81	757.2	57.7	14.3		WNW			1					0	0		
Hellevoetsluis	29.83	757.7	29.83	757.7	65.7	18.7	73	WNW			2					0.028	0.7		
Utrecht	29.78	756.5	29.83	757.7	65.1	18.4	76	W			1		5			0.055	1.4	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bergen	29.59	751.6	29.65	753.0	56.1	13.4	62	NNW	17.2	7.7	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.48	748.8	29.52	749.8	48.6	9.2	84	SW	18	8	.....	.....	10	.....	.....	.....	.....	Raining	
Christiania	29.34	745.3	29.48	748.9	67.6	19.8	51	SW	7	3	.....	.....	7	.....	.....	0.008	0.2	.....	
Tromsö	29.26	743.2	29.32	744.6	42.3	5.7	83	W	4	2	.....	.....	10	.....	.....	0.272	6.9	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Angra (Azores)	30.15	765.8	30.35	771.0	71.1	21.7	80	W	.....	.....	3	.....	5	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.06	738.2	30.04	763.0	71.2	21.8	43	W	6.3	2.8	.....	.....	2	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.18	766.5	30.27	768.8	69.8	21.0	62	SW	2.5	1.1	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.79	756.7	30.14	765.6	64.8	18.2	78	SW	18.6	8.3	.....	.....	10	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.25	768.4	30.32	770.2	72.7	22.6	62	W	9.8	4.4	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando	.....	.....	29.87	758.8	71.6	22.0	.....	WNW	.....	.....	2	.....	0	.....	.....	1	WNW	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sâ da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimarães	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sâ da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Archangel	29.66	753.3	29.68	753.8	57.0	13.9	59	SW	9	4	.....	.....	8ks	.....	.....	.....	.....	.....	Capt. Sselliwerstow.
Astrakhan	30.13	765.2	30.04	763.1	80.8	27.1	31	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.13	740.0	29.61	752.1	70.7	21.5	74	SE	4	2	.....	.....	10	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.42	747.2	29.65	753.0	74.1	23.4	46	WSW	9	4	.....	.....	6k	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.87	733.2	29.80	757.0	62.6	17.0	56	WSW	9	4	.....	.....	8kn	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.59	751.6	29.84	758.0	75.9	24.4	43	WSW	20	9	.....	6ck	.....	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.95	760.6	29.97	761.1	70.5	21.4	81	SE	9	4	.....	.....	3	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.08	738.6	29.63	753.9	77.9	25.5	49	SW	7	3	.....	.....	6cks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.51	749.5	29.96	760.9	78.1	25.6	41	W	4	2	.....	.....	5k	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.69	754.1	29.88	759.0	84.4	29.1	19	S	9	4	.....	.....	5	.....	.....	Blank	Blank	.....	Meteorological Obs.
Moscow	29.28	743.7	29.81	757.1	65.7	18.7	84	NW	4	2	.....	.....	10s	.....	.....	.....	.....	Thunder-storm	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.82	757.5	29.80	759.3	74.7	23.7	54	S	22	10	.....	.....	8cs;n	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.70	754.3	29.78	756.5	49.8	9.8	88	Calm	0	0	.....	.....	10n	.....	.....	.....	.....	.....	.....
Nukuss	29.51	749.5	29.73	755.2	80.2	26.8	53	NNE	9.4	4.2	.....	.....	0	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.57	751.0	29.71	754.6	79.5	26.4	70	SE	4	2	.....	.....	6k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.63	752.5	29.64	752.9	68.0	20.0	56	SSE	7	3	.....	ck	7k	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.07	713.0	29.50	749.4	93.2	34.0	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Teich, A. M.
Tiflis	28.63	727.3	30.02	762.4	70.5	21.4	73	SE	4	2	.....	.....	9ks	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.31	744.5	29.72	754.9	66.2	19.0	72	WNW	9	4	.....	.....	10ks;n	.....	.....	.....	.....	Light rain	Astronomical Obs.
Wilna	29.29	744.0	29.69	754.0	75.4	24.1	41	WSW	4	2	.....	.....	8	.....	.....	.....	.....	.....	Astronomical Obs.
Yeniseisk	29.44	747.7	29.71	754.5	79.7	26.5	42	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.89	759.2	29.99	761.8	76.5	24.7	76	SW	4.7	2.11	.....	.....	5	.....	.....	0	0	.....	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.82	757.3	29.87	758.7	81.3	27.4	35	W	2.8	1.23	.....	3	6	W	.....	0	0	Almost cov'd	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.03	686.6	.....	.....	63.7	17.6	62	W	1.2	0.54	.....	.....	9	.....	.....	0	0	Almost cov'd	Domingo Martin y Perez.
Madrid, Royal Observatory	27.79	705.8	29.93	760.2	76.3	24.6	29	W	22.4	10.00	.....	0	4	.....	.....	0	0	Cloudy	The Staff.
Murcia, Met. Obs'y	29.87	758.6	30.01	762.2	85.8	29.9	45	SE	4.5	2.03	.....	0	3	.....	.....	0	0	Clouds	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.00	736.6	29.88	759.0	62.8	17.1	75	SW	18.6	8.3	.....	.....	8	.....	.....	0.109	4.3	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.02	762.5	30.09	764.2	82.0	27.8	80	ESE	5.1	2.3	.....	4c;cs	0	N	.....	0.638	16.2	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.86	758.4	29.91	759.7	82.5	28.1	91	E	3.3	1.5	.....	.....	10n	.....	E	0.25	6.3	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.04	763.1	30.14	765.6	70.7	21.5	61	WNW	10.2	4.5	.....	0	1	.....	W	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.03	762.8	30.12	765.1	81.3	27.4	84	E	12.6	5.62	.....	4s	5k	E	E	0.080	2.25	D. clouds	Enriquez Iadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.43	747.4	29.47	748.4	52.9	11.6	.....	S	.....	.....	4	.....	4	.....	.....	0	0	.....	
Umea	29.45	748.1	29.50	749.4	57.2	14.0	76	SW	.....	.....	6	.....	7	.....	.....	0.205	5.2	.....	
Hernosand	29.45	748.1	29.50	749.4	65.8	18.8	68	S	.....	.....	2	.....	3	.....	.....	0	0	.....	
Stockholm	29.39	746.6	29.57	751.1	63.0	17.2	79	WSW	.....	.....	2	.....	5	.....	.....	0.075	1.9	Raining	
Wisby	29.57	751.1	29.63	752.6	70.2	21.2	57	WSW	.....	.....	6	.....	3	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.43	747.5	29.52	749.7	64.0	17.8	74	N	8.7	3.9	.....	.....	10	.....	W	1.358	34.50	Raining	Nils Ekholm.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

SWEDISH NAVAL SERIES.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pahlson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 35° 09′, W. 18° 57′	.....	.....	30.28	769.1	70.2	21.2	.....	NNW	.....	.....	2	.....	2	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.54	724.9	29.92	760.0	70.0	21.1	45	SSW	.....	.....	1	.....	10	.....	.....	0.248	6.3	Vapory		The Observatory.
Zurich	28.35	720.1	29.94	760.4	69.4	20.8	52	W	.....	.....	3	.....	3	.....	.....	0	0	Clear		The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

NOTE.—At Geneva the corresponding departures from the normal values are: Barometer, —2.1 mm.; Thermometer, —0.5 Cent. Relative Humidity, —9 per cent.
NOTE.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.92	760.0	78.3	25.7	35	ESE	8	3.5	.....	.....	0	.....	.....	0	0	.....		The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Valona	.....	.....	30.06	763.5	83.3	28.5	.....	S	.....	.....	2	.....	0	.....	.....	0	0	Clear.		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y	.....	.....	29.88	758.9	81.0	27.2	62	NNW	.....	.....	2	.....	0	.....	.....	0	0	.....		Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

NOTE.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	53.0	11.7	.....	Calm	0	0	.....	.....	6ks	.....	.....	0	0	Fair		Hon. J. Ferguson.
Chatham, N. B.	29.86	758.4	29.92	760.0	55.2	12.9	90	N	2	0.9	.....	2ck	0	.....	.....	0	0	Fair		G. A. Blair.
Charlottetown, P. E. Island	29.96	759.4	29.94	760.5	49.7	9.8	89	E	5	2.2	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy		H. J. Cundall, C. E.
Cornwall, Ontario	29.58	751.3	29.76	755.9	75.5	24.2	78	W	.....	.....	1	5cs	0	.....	.....	0	0	Fair		James Smith, M. A.
Dalhousie, N. B.	29.75	755.6	29.92	760.0	54.8	12.7	76	E	.....	.....	2	9k	0	.....	.....	0	0	Cloudy		H. A. Johnson.
Father Point, Quebec	29.82	757.4	29.84	757.9	48.6	9.2	82	Calm	0	0	.....	1c	Sm'e	.....	.....	0	0	Smoky		J. McWilliams.
Fredericton, N. B.	29.87	758.7	29.93	760.2	62.0	16.7	72	SE	4	1.8	.....	5ck	0	NW	.....	0	0	Fair		Prof. Harrison.
Fort Garry, Manitoba	29.02	737.1	29.82	757.4	53.7	18.2	80	N	2	0.9	.....	.....	8ks	.....	.....	0.020	0.51	Cloudy		James Stewart.
Granton, Ontario	28.74	730.0	29.79	756.7	69.0	20.6	100	SW	.....	.....	1	.....	10n	.....	.....	0.09	2.3	Cloudy		James Grant.
Halifax, N. S.	29.83	757.7	29.96	761.0	57.0	13.9	77	Calm	0	0	.....	8ck	0	.....	.....	0	0	Fair		A. Allison.
Hamilton, Ontario	29.45	748.0	29.82	757.4	71.7	22.1	83	SW	.....	.....	1	10cs	0	SW	.....	0	0	Cloudy		Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		E. Weedon.
Kingston, Ontario	29.48	748.8	29.80	756.9	71.0	21.7	77	SW	4	1.8	.....	10ck	0	SW	.....	0	0	Cloudy		S. Woods, M. A.
Little Glace Bay, N. S.	29.81	757.2	29.84	757.9	54.1	12.3	81	NE	8	3.6	.....	7k	0	NE	.....	0	0	Cloudy		C. H. Rigby.
Montreal, Quebec	29.62	752.3	29.80	756.9	74.4	23.6	79	SW	1	0.4	.....	1c	0	W	.....	0	0	Clear		C. H. McLeod, C. E.
Moose Factory, Ontario	29.73	755.1	29.77	756.1	71.2	21.8	63	SW	.....	.....	3	3c	0	.....	.....	0.07	1.8	Fair		J. R. Nason.
Norwood, Ontario	29.11	739.4	29.77	756.1	72.0	22.2	82	W	2	0.9	.....	.....	10s	.....	.....	0	0	Cloudy		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.12	739.6	29.78	756.4	66.5	19.2	95	W	12	5.4	.....	.....	10n	.....	.....	0.04	1.0	Light rain		Rev. R. Mosley.
Peterboro, Ontario	29.09	738.9	29.80	756.9	73.7	23.2	90	Calm	.....	.....	0	.....	10n	.....	.....	0	0	Overcast		J. F. Jeffers, M. A.
Port Dover, Ontario	29.16	740.7	29.82	757.4	71.1	21.7	95	Calm	0	0	.....	2k	7n	SW	.....	Inap.	Inap.	Threatening		H. Morgan.
Port Stanley, Ontario	29.23	742.4	29.85	758.2	66.5	19.2	98	E	6	2.7	.....	.....	10n	.....	.....	0.24	6.1	Cloudy		M. Payne.
Quebec, Quebec	29.53	750.0	29.84	757.9	66.0	18.9	88	NE	.....	.....	5	.....	10n	.....	.....	0	0	Cloudy		Capt. Ashe, R. N.
Rockliffe, Ontario	29.30	744.2	29.75	755.6	62.0	16.7	88	Calm	0	0	.....	.....	8ks	.....	.....	0	0	Clear		W. H. McIntyre.
St. John, N. B.	29.78	756.4	29.94	760.5	55.0	12.8	80	S	4	1.8	.....	.....	10ks	.....	.....	0	0	Cloudy		G. Murdock, C. E.
Saugeen, Ontario	29.11	739.4	29.79	756.7	69.2	20.7	90	S	6	2.7	.....	.....	10ks	.....	.....	0.09	2.3	Cloudy		K. Stewart.
Stratford, Ontario	28.66	725.4	29.78	756.4	67.8	19.9	94	SE	2	0.9	.....	.....	10s	.....	.....	0.083	2.11	Cloudy		C. J. MacGregor, M. A.
Sydney, C. B.	29.84	757.9	29.88	758.9	54.5	12.5	77	NE	2	0.9	.....	10k	0	.....	.....	0	0	Cloudy		T. C. Hill, C. E.
Toronto, Ontario	29.45	748.0	29.82	757.4	71.9	22.2	76	SW	2	0.9	.....	.....	10n	.....	.....	Inap.	Inap.	Light rain		Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		Prof. John E. Oram, M. A
Woodstock, Ontario	28.80	731.5	29.82	757.4	70.6	21.4	89	S	6	2.7	.....	.....	10n	SW	.....	0	0	Cloudy		Professor Wolverton.
Yarmouth, N. S.	29.86	758.4	29.93	760.2	61.6	16.4	71	E	5	2.2	.....	8k	0	W	.....	0	0	Fair		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.52	749.8	29.77	756.1	48	8.9	92	NW	6	2.7	.....	5k	10s	.....	.....	0.03	0.8	Cloudy		John Delany.
St. Pierre, N. F., Hospital Maritime	.....	.....	29.69	754.1	53.6	12.0	.....	N	.....	.....	4	.....	.....	.....	.....	0	0	.....		The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		

NOTE.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR.

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.82	757.4	29.90	759.4	81	27.2	63	S	4	1.8		2c	Haze	NW	Calm	0	0	Fair	
Alpena, Michigan	29.11	739.4	29.72	754.9	69	20.6	80	SW	8	3.6			10s		Calm	2.12	53.8	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.96	735.6	30.06	763.5	72	22.2	90	S	8	3.6			10n		Calm	0.02	0.5	Light rain	
Atlantic City, New Jersey	29.93	760.2	29.94	760.5	77	25.0	86	SW	2	0.9		5c	Haze	Calm	Calm	0	0	Fair	
Augusta, Georgia	29.97	761.2	30.07	766.3	75	23.9	81	S			1		10s		W	0.12	3.0	Cloudy	
Baltimore, Maryland	29.90	759.4	29.94	760.5	79	26.1	74	W	2	0.9			10s;fg		Calm	0	0	Cloudy	
Barnegat, New Jersey	29.91	759.7	29.93	760.2	84	28.9	64	SW	7	3.1		8ck	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	28.09	713.5	29.95	760.7	63	17.2	83	Calm	0	0		0	0			0	0	Clear	
Boerne, Texas	28.50	723.9	29.76	755.9	70	21.1	95	W	1	0.4		8k	0	S		0	0	Fair	
Boise City, Idaho	27.05	687.8	30.04	763.0	63	17.2	50	NW	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.74	755.4	29.88	758.9	82	27.8	60	Calm	0	0		5ck	Sm'e		Calm	0	0	Fair	
Brackettville, Texas	28.77	730.7	29.78	756.4	77	25.0	77	E	14	6.3		0	0			0	0	Clear	
Breckenridge, Minnesota	28.82	732.0	29.78	756.4	62	16.7	77	NW	4	1.8		0	0			0.24	6.1	Clear	
Brownsville, Texas	29.82	757.4	29.86	758.4	82	27.8	79	Calm	0	0		5k	0	SE		0	0	Fair	
Buffalo, New York	29.15	740.4	29.81	757.2	74	23.3	76	SW	4	1.8			10s		SW	0	0	Cloudy	
Burkes, Arizona					64	17.8	30	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.57	751.1	29.84	757.9	78	25.6	69	S	9	4.0		2cs	0	NW		0.02	0.5	Fair	
Cairo, Illinois	29.58	751.3	29.95	760.7	77	25.0	77	SW	9	4.0		3ck;k	0	SW;W		0	0	Fair	
Campo, California	27.38	695.4	29.95	760.7	36	2.2	71	SW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.07	763.8	30.08	764.0	80	26.7	87	SW	16	7.2		5c	0	Calm		0	0	Fair	
Cape Henry, Virginia	29.98	761.5	29.99	761.7	83	28.3	64	SW	15	6.7		5ck	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.07	763.8	30.09	764.3	80	26.7	87	SW	15	6.7		5c	0	W		0	0	Fair	
Cape May, New Jersey	29.90	759.4	29.93	760.2	77	25.0	82	S	6	2.7		8k	Fog	SW		0	0	Cloudy	
Castroville, Texas	29.14	740.1	29.82	757.4	77	25.0	77	Calm	0	0			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.11	764.8	30.14	765.5	77	25.0	86	E	10	4.5		5ck	0	SE		0	0	Fair	
Charleston, South Carolina	30.09	764.3	30.15	765.8	77	25.0	73	SW	6	2.7		0	0			0	0	Clear	
Charlotte, North Carolina	29.23	742.4	30.01	762.2	73	22.8	81	SW	4	1.8			10s		SW	0	0	Cloudy	
Chattanooga, Tennessee	29.26	743.2	30.03	762.7	74	23.3	86	S	5	2.2			10ks		SW	0.09	2.3	Cloudy	
Cheyenne, Wyoming	24.10	612.1	30.04	763.0	50	10.0	72	W	2	0.9		0	0			0.05	1.3	Clear	
Chicago, Illinois	29.12	739.6	29.78	756.4	70	21.1	85	SW	6	2.7			10ks		SW	0.11	2.8	Cloudy	
Chincoteague, Virginia	29.97	761.2	29.98	761.5	76	24.4	90	SW	10	4.5			10s		SW	0	0	Cloudy	
Cincinnati, Ohio	29.30	744.2	29.92	760.0	76	24.4	86	SW	5	2.2		5ck	0	SW		0.84	21.3	Fair	
Cleveland, Ohio	29.16	740.7	29.85	758.2	71	21.7	85	SE	7	3.1		5c;cs	1ks	SW	S	0.11	2.8	Fair	
Coleman City, Texas	28.13	714.5	29.72	754.9	71	21.7	75	Calm	0	0		0	0			0	0	Clear	
Columbus, Ohio	29.08	738.6	29.86	758.4	77	25.0	73	S	4	1.8		2c	5ks	Calm	SW	0	0	Fair	
Concho, Texas	28.02	711.7	29.62	752.3	71	21.7	85	SE	5	2.2		5k	0	W		0	0	Fair	
Corsicana, Texas	29.46	748.3	29.90	759.4	73	22.8	85	S	4	1.8		0	8ks		S	0	0	Cloudy	
Davenport, Iowa	29.20	741.7	29.81	757.2	70	21.1	85	W	4	1.8			10s		W	0.47	11.9	Cloudy	
Dayton, Washington T'y					53	11.7	79	N			1	0	0			0	0	Clear	
Deadwood, Dakota	25.42	645.7			55	12.8	68	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.74	730.0	29.85	758.2	76	24.4	82	S	8	3.6		2k	5s	Calm	SW	0	0	Fair	
Delaware Breakwater, Del.	29.91	759.7	29.93	760.2	80	26.7	66	SW	14	6.3			10s		SW	0	0	Cloudy	
Denison, Texas	29.13	739.9	29.88	758.9	73	22.8	81	S	3	1.3			10ks		Calm	0	0	Cloudy	
Denver, Colorado	24.82	630.4	30.04	763.0	55	12.8	68	S	3	1.3		5c	0	W		0	0	Fair	
Des Moines, Iowa	28.97	735.8	29.81	757.2	70	21.1	70	Calm	0	0		5c	0	W		1.57	39.9	Fair	
Detroit, Michigan	29.15	740.4	29.72	754.9	70	21.1	90	SW	5	2.2		0	8s		SW	0.10	2.5	Fair	
Dodge City, Kansas	27.34	694.4	29.52	749.8	67	19.4	84	Calm	0	0		5ck	0	Calm		0	0	Fair	
Dubuque, Iowa	29.12	739.6	29.78	756.4	69	20.6	85	SW	4	1.8		2c	8s	S	Calm	0.13	3.3	Cloudy	
Duluth, Minnesota	29.06	738.1	29.70	754.4	68	20.0	79	NW	10	4.5		0	0			0.85	21.6	Clear	
Eagle Pass, Texas	29.14	740.1	29.83	757.7	78	25.6	54	SE	6	2.7		0	0			0	0	Clear	
Eastport, Maine	29.84	757.9	29.90	759.4	57	13.9	75	NE	2	0.9		0	2ks		Calm	0	0	Fair	
Edinburg, Texas					78	25.6	82	SE			4	0	0			0	0	Clear	
El Paso, Texas																			
Erie, Pennsylvania	29.16	740.7	29.83	757.7	77	25.0	65	SW	8	3.6			10s		SW	Inap.	Inap.	Cloudy	
Escanaba, Michigan	29.06	738.1	29.67	753.6	70	21.1	80	W	3	1.3		8c	0	SE		0.28	7.1	Fair	
Florence, Arizona	28.37	720.6	29.97	761.2	71	21.7	41	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.06	636.5	30.51	774.9	49	9.4	71	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.85	707.4	29.60	751.8	63	17.2	67	NE	12	5.4		0	5ks		NE	0	0	Fair	
Fort Custer, Montana	26.74	679.2			59	15.0	76	SE	6	2.7		0	0			0	0	Clear	
Fort Davis, Texas	25.22	640.6	30.18	766.6	67	19.4	74	W	1	0.4		2ck	1s	NW	NW	0.07	1.8	Fair	
Fort Elliot, Texas	26.87	682.5	29.02	737.1	62	16.7	67	S	4	1.8		0	0			0.70	17.8	Clear	
Fort Gibson, Indian Ter.	29.37	746.0	29.88	758.9	74	23.3	81	Calm	0	0		10cs	0	E		Inap.	Inap.	Cloudy	
Fort Grant, Arizona	25.20	640.1	30.06	762.0	72	22.2	30	N	12	5.4		0	0			0	0	Clear	
Fort Griffin, Texas	28.67	728.2	29.89	759.2	70	21.1	80	Calm	0	0		0	5s		Calm	0	0	Fair	
Fort Keogh, Montana	27.19	690.6			70	21.1	52	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.65	702.3	29.48	748.8	72	22.2	63	S	9	4.0		9ck	0	NW		0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.68	728.5	29.74	755.4	73	22.8	81	N	2	0.9		0	0			0	0	Clear	
Fort Stevenson, Dakota	28.05	712.5			61	16.1	77	Calm	0	0		0	0			0	0	Clear	
Fort Verde, Arizona					58	14.4	53	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.89	759.2	29.93	760.2	80	26.7	82	S	10	4.5		5ck	0	SW		0.09	2.3	Fair	
Grand Haven, Michigan	29.14	740.1	29.76	755.9	68	20.0	95	S	12	5.4			10n		Calm	0.32	8.1	Heavy rain	
Helena, Montana					58	14.4	37	S	5	2.2		0	0			0	0	Clear	
Henrietta, Texas																			
Indianapolis, Indiana	29.11	739.4	29.84	757.9	77	25.0	77	S	8	3.6		5c	0	SW		Inap.	Inap	Fair	
Indianola, Texas	29.90	759.4	29.93	760.2	83	28.3	79	S	5	2.2		5k	0	S		0.22	5.6	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	765.0	30.14	765.5	78	25.6	78	SW	1	0.4		5cs	0	W		0.37	9.4	Fair	
Keokuk, Iowa	29.20	741.7	29.78	756.4	73	22.8	81	W	3	1.3		5cs	2s	W	W	0.04	1.0	Fair	
Key West, Florida	30.07	763.8	30.10	764.5	83	28.3	75	SE	9	4.0		8k	0	SE		0	0	Fair	
Kittyhawk, North Carolina	30.03	762.7	30.06	763.5	80	26.7	70	W	16	7.2		5c	0	W		0	0	Fair	
Knoxville, Tennessee	29.07	738.4	30.03	762.7	75	23.9	79	SW	8	3.6			10ks		SW	0	0	Cloudy	
La Crosse, Wisconsin	29.05	737.9	29.74	755.4	70	21.1	75	SW	4	1.8		5k	0	NW		0.04	1.0	Fair	
La Mesilla, New Mexico	26.03	661.2	30.18	766.6	67	19.4	55	Calm	0	0		0	2s		Calm	0	0	Fair	
Laredo, Texas	29.40	746.7	29.72	754.9	82	27.8	63	SE	4	1.8		0	0			0	0	Clear	
Leavenworth, Kansas	29.60	736.6	29.80	756.9	73	22.8	72	Calm	0	0			10s;fg		Calm	0.71	18.0	Cloudy	
Lewiston, Idaho	29.16	740.7	29.79	756.7	62	16.7	36	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.61	752.1	29.92	760.0	72	22.2	90	S	4	1.8		0	5ks		S	0.02	0.5	Fair	
Los Angeles, California	29.65	753.1	29.99	761.7	58	14.4	88	SE	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.39	746.5	29.92	760.0	78	25.6	69	S	8	3.6		5k	0	Calm		Inap.	Inap.	Fair	
Lynchburg, Virginia	29.31	744.5	29.95	760.7	78	25.6	69	W	3	1.3		10ck	0	S		0	0	Cloudy	
Madison, Wisconsin	28.79	731.3	29.72	754.9	68	20.0	90	SW	4	1.8			10s		W	0.17	4.3	Cloudy	
Marquette, Michigan	28.98	736.1	29.64	752.8	69	20.6	61	NW	6	2.7		0	0			0.23	5.8	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.27	718.0	29.95	760.7	74	23.3	76	SE	4	1.8		2k	5ks	SW	SW	0	0	Fair	
Memphis, Tennessee	29.66	753.4	29.99	761.7	73	22.8	95	SE	5	2.2			10s		SE	0.26	6.6	Cloudy	
Milwaukee, Wisconsin	29.06	738.1	29.74	755.4	69	20.6	95	SW	5	2.2			10n		Calm	0.66	16.8	Light rain	
Mobile, Alabama	30.02	762.5	30.07	763.8	77	25.0	91	S	13	5.8			10s		S	0.27	6.9	Cloudy	
Montgomery, Alabama	29.87	758.7	30.10	764.5	74	23.3	90	S	5	2.2			10n		S	0.16	4.1	Light rain	
Morgantown, West Virginia	28.99	736.3	29.92	760.0	76	24.4	73	SW	6	2.7			10s		W	0.01	0.3	Cloudy	
Mt Washington, N. H.	23.92	607.6	30.28	769.1	55	12.8	93	NW	19	8.5			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.47	748.5	29.98	761.5	77	25.0	77	SE	2	0.9		5ck	2ks	SW	SW	0.30	7.6	Fair	
New Haven, Connecticut	29.79	756.7	29.90	759.4	86	30.0	55	SW	3	1.3		0	Haze		Calm	0	0	Clear	
New London, Connecticut	29.87	758.7	29.91	759.7	78	25.6	65	Calm	0	0		0	Smo;ha		Calm	0	0	Dense haze	
New Orleans, Louisiana	29.96	761.0	30.02	762.5	80	26.7	78	SE	4	1.8		2c	Sm'e	SW	Calm	0.24	6.1	Fair	
Newport, Rhode Island	29.84	757.9	29.88	758.9	82	27.8	60	SW	1	0.4		2cs	Haze	Calm		0	0	Hazy	
New River, North Carolina																			
New York, New York	29.76	755.9	29.92	760.0	76	24.4	64	SW	2	0.9		5ck	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	29.95	760.7	30.01	762.2	86	30.0	58	SW	12	5.4		5cs	Haze	W	Calm	0	0	Fair	
North Platte, Nebraska	27.68	687.8	29.58	751.3	60	15.6	88	NW	6	2.7		10cs	0	W		0.01	0.3	Cloudy	
Olympia, Washington Ter.	29.89	759.2	29.93	760.2	52.0	11.1	86	NE	1	0.4		0	0			0	0	Clear	
Omaha, Nebraska	28.75	730.2	29.79	756.7	70	21.1	80	Calm	0	0		2c	5s	Calm	Calm	0.02	0.5	Fair	
Oswego, New York	29.55	750.6	29.85	758.2	79	26.1	62	S	4	1.8			10s		W	0	0	Cloudy	
Pembina, Dakota	28.96	735.6	29.76	755.9	59	15.0	82	NW	6	2.7		5k	0	NW		0	0	Fair	
Pensacola, Florida	30.03	762.7	30.06	763.5	76	24.4	86	S	11	4.9			10s		Calm	0.04	1.0	Cloudy	
Philadelphia, Pennsylvania	29.89	759.2	29.94	760.7	78	25.6	69	SW	3	1.3		8cs;ck	Sm'e	Calm;SW		0	0	Cloudy	
Phœnix, Arizona	28.75	730.2	30.43	772.9	88	31.1	37	E	1	0.4		0	0			0	0	Clear	
Pike's Peak, Colorado	17.96	456.2	30.17	766.3	33	0.6	70	NW	14	6.3		1cs	0	Calm		0.05	1.3	Clear	
Pilot Point, Texas	29.14	740.1	29.94	760.5	78	25.6	65	S	6	2.7		10c	0	S		0	0	Cloudy	
Pioche, Nevada	24.05	610.9	29.82	757.4	55	12.8	33	S	16	7.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.14	740.1	29.91	759.7	74	23.3	81	S	6	2.7		5k	0	Calm		0.02	0.5	Fair	
Port Huron, Michigan	29.14	740.1	29.76	755.9	69	20.6	85	S	8	3.6		10cs	0	W		0.04	1.0	Cloudy	
Portland, Maine	29.85	758.2	29.90	759.4	62	16.7	83	NE	4	1.8			Fog			Inap.	Inap.	Foggy	
Portland, Oregon	29.91	759.7	29.98	761.5	59	15.0	82	S	7	3.1		0	0			0	0	Clear	
Portsmouth, North Carolina					80	26.7	82	SW	16	7.2		8cs;k	0	S;SW		0	0	Cloudy	
Prescott, Arizona	24.78	629.4	30.04	763.0	58	14.4	27	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.10	764.5	30.11	764.8	82	27.8	79	E	11	4.9		5c	0	Calm		Inap.	Inap.	Fair	
Red Bluff, California	29.60	751.8	29.95	760.7	61.5	16.4	69	SE	4	1.8		0	0			0	0	Clear	
Rio Grande City, Texas	29.68	753.9	29.89	759.2	79	26.1	87	SE	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.23	742.4	29.81	757.2	75	23.9	68	SW	6	2.7			10s		Calm	0	0	Cloudy	
Roseburg, Oregon	29.18	741.8	30.05	763.3	52	11.1	86	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.87	758.7	29.95	760.7	55	12.8	81	S	6	2.7		0	0			0	0	Clear	
St. Louis, Missouri	29.30	744.2	29.85	758.2	72	22.2	80	S	8	3.6		0	8ks			0.04	1.0	Fair	
St. Paul, Minnesota	28.95	735.3	29.73	755.1	68	20.0	79	Calm	0	0		0	0			0	0	Clear	
Salt Lake City, Utah	25.55	649.0	29.88	758.9	65	18.3	26	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.23	742.4	29.90	759.4	78	25.6	84	SE	1	0.4		0	0			0	0	Clear	
San Diego, California	29.95	760.7	30.02	762.5	61	16.1	82	N	3	1.3			10s		N	0	0	Cloudy	
Sandusky, Ohio	29.19	741.4	29.82	757.4	75	23.9	77	S	11	4.9		5ck	5ks	W	SW	0.26	6.6	Cloudy	
Sandy Hook, New Jersey	29.89	759.2	29.92	760.0	81	27.2	67	W	8	3.6		5ck	5s	W	Calm	0	0	Cloudy	
San Francisco, California	29.98	761.5	30.04	763.0	53	11.7	86	W.	8	3.6			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.31	592.1	29.85	758.2	65	18.3	63	NE	2	0.9		0	0			Inap.	Inap.	Clear	
Savannah, Georgia	30.09	764.3	30.18	766.6	79	26.1	78	Calm	0	0		5c	Fog	Calm	Calm	0.41	10.4	Fair	
Shreveport, Louisiana	29.73	755.1	29.94	760.5	75	23.9	81	S	5	2.2			10s		Calm	0	0	Cloudy	
Silver City, New Mexico																			
Smithville, North Carolina	30.10	764.5	30.13	765.3	79	26.1	74	SW	12	5.4		2c	0	Calm		0	0	Fair	
Socorro, New Mexico																			
Springfield, Illinois	29.20	741.7	29.84	757.9	72	22.2	85	SW	4	1.8			10s		SW	0.22	5.6	Cloudy	
Springfield, Massachusetts	29.78	756.4	29.90	759.4	79	26.1	70	Calm	0	0		0	0			0	0	Clear	
Stockton, Texas	26.81	681.0	29.81	757.2	70	21.1	80	S	18	8.0		4cs	0	Calm		0	0	Fair	
Thatcher's Island, Mass.	29.75	755.6	29.80	756.9	65	18.3	94	NE	7	3.1		10c	0	N		0	0	Cloudy	
Toledo, Ohio	29.10	740.7	29.80	756.9	76	24.4	77	S	8	3.6		1ck	2s	SW	SW	0.08	2.0	Threatening	
Tucson, Arizona	27.48	698.0	30.02	762.5	80	26.7	24	S	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.51	749.5	29.99	761.7	63	17.2	52	E	2	0.9		0	0			0	0	Clear	
Uvalde, Texas	28.99	736.3	29.78	756.4	77	25.0	77	NE	3	1.3		0	0			0	0	Clear	
Vicksburg, Mississippi	29.76	755.9	30.01	762.2	72	22.2	95	SE	2	0.9			10s		Calm	0.93	23.6	Cloudy	
Virginia City, Montana	24.27	616.4	29.75	755.6	54	12.2	54	SE	1	0.4		0	0			0	0	Clear	
Visalia, California	29.55	750.6	29.91	759.7	57	13.9	63	W	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.84	757.9	29.95	760.7	80	26.7	74	S	6	2.7			10s		W	Inap.	Inap.	Cloudy	
Wickenburg, Arizona					63	17.2	88	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.02	762.5	30.10	764.5	80	26.7	66	W	10	4.5		5c	0	Calm		0	0	Fair	
Winnemucca, Nevada	25.58	649.7	29.94	760.5	54	12.2	32	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.84	757.9	29.88	758.9	73	22.8	76	SW	6	2.7		1cs	Haze	Calm		0	0	Clear	
Yankton, Dakota	28.60	726.4	29.82	757.4	72	22.2	62	Calm	0	0		0	0			0	0	Clear	
Yuma, Arizona	29.64	752.8	29.78	756.4	70	21.1	61	NW	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.00	558.8			55.5	13.1	80	Calm	0	0			10ks			0	0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.06	763.5	30.11	764.8	81	27.2	82	SE	2.4	1.1		8cs	0	Calm		0.58	14.7	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.01	762.2	30.02	762.5	81.2	27.3	74	Calm	0	0		2c	0			0.11	2.8	Fine	Maxwell Hall.
Navassa, W. I.	29.93	760.2	30.01	762.2	82	27.8	77	E	6	2.7		2k	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.04	763.0	30.04	763.0	79	26.1	87	E			2	5ck	4s			0.210	5.33	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.41	747.0	29.96	761.0	77	25.0	89	S			1		10cs;s			0.19	4.8		Francesco J. Cisneros.
§ Rivas, Nicaragua					77	25		SE					1k		SE	0.35	9.	Fair	Earl Flint.
Santiago de Cuba, W. I.	30.05	763.3	30.07	763.8	82	27.8	70	Calm	0	0		0	0			0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	29.96	761.0	30.01	762.2	44.0	6.7	96	E	13	5.8			9s		E	0.05	1.3	Raining	J. Fortsecue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846 2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft.,or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.09	764.3	78	25.6	82	SE	9	4.0			8		SE					Fair	
§Navy Yard, Portsmouth, N. H.	29.88	758.9	64	17.8	89	Calm	0	0			5†			0	0			Cloudy†	
Naval Hospital, Yokohama, Japan	29.80	756.9	66	18.9	91	NNE			5		10n		NE	1.10	27.9			Gloomy	
§Adams, S. 7° 31′, W. 79° 58′	30.00	762.0	67	19.4	84	SSE			3		10		SSE					Cloudy	
§Alaska, S. 15° 41′, W. 74° 34′ *	30.00	762.0	62	16.7	83	ESE			4		10					Long	SW	Cloudy	
§Alert, N. 31° 03′, E. 140° 05′	29.71	754.6	77	25.0	91	W			5		5		W			Long	W	Fair	
§Alliance, Virgin Rocks, N. 46° 25′, W. 50° 50′	29.49	749.0	43	6.1	??	NNE			2–4		10		Calm	Light	Light	Smooth		Foggy	
§Ashuelot, Nagasaki, Japan	29.89	759.2	71	21.7	80	Calm			0		2		Calm			None		Fair	
§Colorado, New York, N. Y.	29.86	758.4	78	25.6	57	SW	5	2.2			2							Clear	
§Constellation, N. 40° 27′, W. 73° 56′	29.80	756.9	75	23.9	81	WNW			2		8		N			Smooth		Cloudy	
§Constitution, Navy Yard, Brooklyn, N. Y.	29.90	759.4	77	25.0	65	W	2	0.9			2		Calm					Hazy	
§Franklin, Off Navy Yard, Norfolk, Va	29.96	761.0	79	26.1	91	SSW	10.8	4.8			1		SW	0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal	30.00	762.0	59	15.0	76	W	2.4	1.1			9		W	0	0			Cloudy	
§Jamestown, Sitka, Alaska *	30.28	769.1	48	8.9	85	W			3		10					Smooth		Cloudy	
§Kearsarge, Boston, Mass	29.91	759.7	74	23.3	81	Calm			0		0					Smooth		Clear	
§Lackawana, Panama Bay, Panama†	30.01	762.2	79	26.1	91	NW			2		10		NW					Cloudy	
§Marion, S 44° 53′, W. 57° 00′	29.78	756.4	48	8.9	100	SW			1		10		SW	0	0	Long	W	Cloudy	
§Michigan, Erie, Pa.	29.84	757.9	73	22.8	81	S			1		8		SW					Cloudy	
§Minnesota, Newburgh, N. Y. *	29.92	760.0	76	24.4	95	S			1		8		Calm					Misty	
§Monocacy, Chefoo, China	29.87	758.7	74	23.3	81	SSW			1		2		SW					Fair	
§New Hampshire, Port Royal, S. C.	30.12	765.0	76	24.4	86	N	1	0.4			5	S	Calm	0	0			Fair	
Nipsic, Alexandria, Egypt	29.96	761.0	78	25.6	78	N			3		0					Smooth		Blue sky	
§Onward, Chimbote, Peru	29.97	761.2	66	18.9	89	SSE			2		10		NNW			Long	W	Cloudy	
§Palos, Shanghai, China	29.95	760.7	69	20.6	95	ESE			1		2							Clear	
§Passaic, Washington, D. C.	29.93	760.2	82	27.8	91	SW			1		5		SW	0	0			Fair	
§Pensacola, San Francisco, Cal.	29.99	761.7	53	11.7	93	WSW			3		10		WSW			Smooth		Misty	
§Portsmouth, N. 36° 43′, W. 37° 22′	30.32	770.1	71	21.7	85	SW			6		8		SW			Rough	W	Cloudy	
§Powhatan, New York, N. Y.	29.92	760.0	78	25.6	78	SSW			1		5		W					Fair	
§Quinnebaug, Stockholm, Sweden	29.55	750.6	62	16.7	53	Calm			0		8		Calm			Smooth		Cloudy	
§Richmond, Kobe, Japan	29.82	757.4	70	21.1	85	N			1		10		N	0.3	8.			Overcast	
§Saratoga Naples, Italy	30.00	762.0	78	25.6	57	SW			4		0			0	0			Clear	
§Shenandoah, Buenos Ayres, Argentine Republic	29.74	755.4	64	17.8	89	NNW			2		10					Smooth		Cloudy	
§St. Louis, League Island, Pa.	29.93	760.2	76	24.4	86	Calm	0	0			5			0	0			Fair	
Swatara, Amoy, China			84	28.9	83	SE			1		2		SE			Smooth		Clear	
§Tennessee, New York, N. Y.	29.92	760.0	81	27.2	63	SSW			0–1		5		SW					Hazy	
§Ticonderoga, Nagasaki, Japan	29.89	759.2	73	22.8	85	NNE			1		2		NNE			Smooth		Clear	
§Trenton, N. 41° 57′, W. 12° 03′	30.02	762.5	66	18.9	68	WNW			6		2			7 h'rs	7 h'rs	Mod'ate	NW	Cloudy	
§Vandalia, Boston, Mass.			70	21.1	85	Calm			0		2		Calm					Misty	
§Wabash, Boston, Mass.	29.85	758.2	73	22.8	76	Calm	0	0			5			0	0			Fair	
§Wachusett, Valparaiso, Chili	29.86	758.4	52	11.1	93	E			3		10		E	24 h'rs	24 h'rs	Long	E	Raining	
Wyoming, N. 37° 17′, W. 7° 44′	30.09	764.3	67	19.4	64	WNW			3		2		NW			Smooth	NW	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

Names of Vessels and Captains.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 54′, W. 20° 20′	29.91	759.7	56	13.3		N			4		5		N			Cross	N;E	Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, J. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent, N. 43° 03′, W. 41° 59′	29.63	752.6	61	16.1	94	WSW			8		9		W	Heavy	Heavy	High	WSW	Cloudy	
S. S. Ohio, Henry Morrison, N. 43° 46′, W. 36° 28′ †	29.91	759.7	69	20.6	95	SW			4		10		SW	3 h'rs	3 h'rs	Mod'ate	SW	Heavy rain	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains, N. 50° 36′, W. 13° 58′	29.69	754.1	68	20.0	70	ENE			4		9		E	Light	Light	Mod'ate	E	Fair	H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 42° 36′, W. 48° 00′	29.56	750.8	60	15.6	82	SSW			3–4		8		SW	3 h'rs	3 h'rs	Mod'ate	SW to W	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China †	29.86	758.4	84	28.9	91	Var.			4		10n		Var.	Heavy	Heavy	Smooth		Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 41° 47′, W. 154° 27′ *	30.05	763.3	56	13.3	75	WNW			2		8		NW	0	0	Smooth		Overcast	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
§S. S. Geo. W. Elder, J. M. Lachlan																			
S. S. Oregon, E. Polemann, N. 38° 31′, W. 123° 24′ †	30.02	762.5	52.0	11.1		SSE			0-1		10					Smooth	NW	Foggy	J. M. Lachlan. L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
S. S. Ancon, E. Alexander, N. 32° 44′, W. 117° 10′ †	30.07	763.8	60	15.6		SW			2		10		Calm			Smooth		Cloudy	
S. S. Orizaba, C. B. Johnson																			Harrison & Marshall.
S. S. State of California, G. Delmey, Portland, Oregon †	29.89	759.2	60	15.6		Calm			0		0							Clear	
S. S. Victoria, H. M. Haywood, Nanaimo Harbor, Vancouver I'd †	30.00	762.0	64	17.8	58	NW			4		0							Clear	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.
REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, N. 8° 06′, W. 79° 44′....†	29.86	758.4	79	26.1	91	W			3		10		NW			Small	W	Cloudy	F. A. Johnston.
§ S. S. Australia, S. 24° 15′, W. 175° 31′....†	29.93	760.2				W			3		10					Smooth		Drizzling	Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	29.91	759.7	58	14.4	70	NE			1		8		N					Overcast	W. H. Hawes.
§ S. S. City of Panama, M. Connolly, N. 30° 40′, W. 116° 50′...†	29.99	761.7	60	15.6	77	NW			4		10		NW	0	0	Rough	NW	Hazy	R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 46° 49′, E. 172° 15′....†	30.17	766.3	42	5.6	91	WSW			1		10		W	0	0	Smooth		Cloudy	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§ S.S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama.....†	29.88	758.9	80	26.7	100	NW			3		5		NW	0	0			Fair	
§ S.S. Dakota, H. G. Morse. Puget Sound.....†	29.95	760.7	57	13.9	87	Calm			0		0			0	0	None		Clear	
§ S.S. Granada, J. M. Cavarly N. 24° 18′, W. 112° 21′...†	29.93	760.2	66	18.9	94	NW			3		2d		NW	0	0	Mod'ate	SSW	Hazy	C. T. Rode.
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.04	763.0	61	16.1		W			1		0			0	0				E. Alexander.
§ S.S. Zealandia, R. C. Ghest, S. 26° 31′, W. 177° 12′.....	29.72	754.5	68	20.0		SW			4		5		SE			Long	S	Squally	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes. N. 40° 30′, W. 68° 37′....†	29.87	758.7	65	18.3		SW			2		5		W					Hazy	J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N. 51° 51′, W. 7° 50′....†	29.92	760.0	60	15.6		W			2		5		W			Slight	W	Misty	J. Jones.
S. S. Celtic, B. Gleadell, N. 41° 24′, W. 60° 18′.....†	29.98	761.5	58	14.4		NW			4		0			0	0	Smooth		Clear	G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.08	764.0	79.5	26.4		Calm			0		3		SW	2.	51.			Fine	A. R. Mehaffey.
Schr. Adelie Fuller, J. Jorgensen, Boston, Mass.....	29.90	759.4	73	22.8	76	Calm	0	0			Fog			0	0			Foggy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis, N. 39° 38′, W. 74° 00′ ...†	29.93	760.2	76	24.4		SW			1		2		SW	0	0	Smooth		Clear	L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 18° 45′, W. 32° 32′....*†	30.20	767.1	77	25.0		NE			5		8		NE			Mod'ate	NE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 56° 11′, W. 49° 33′.....†	30.06	763.5				E			2		10		E			Long	E	Foggy	S. S. Miner.
Bigantine George, W. H. Champlin, N. 33° 43′, W. 68° 20′.....†	30.35	770.9	81	27.2		W			3		2		W	0	0	Smooth		Clear	
Iron Cross, W. Randall, N. 32° 00′, W. 77° 10′.....*	30.19	766.8	84	28.9	79	S			1		3		W	0	0	Con-fused	W	D. clouds	W. Randall.
British Barque Ivigtut, Adam Smith. N. 42° 33′, W. 59° 01′....*	29.96	761.0				NW			3-4		1					Smooth		Clear	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.84	757.9	52	11.1	93	N			2		2		N	0	0			Foggy	James S. Garvin.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.

Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 26, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.

1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.

1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 1—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mogador, Marocco			30.06	763.5	80.1	26.7	69	WNW			4		3			0	0	Pretty fair.	Dr. Ollive.
Nemours			30.06	763.5	80.6	27.0	39	ENE			3		0			0	0	Clear	Metge.
Algiers			29.98	761.6	81.9	27.7	75	NNW			1		0			0	0	Clear.	Nicolas.
La Calle			29.95	760.8															Fonfrède.
Tunis			30.05	763.3															Jacques
Sfax			30.06	763.5															Gau.
Saida			29.98	761.6	99.1	37.3	8	WSW			7		0			0	0	Clear.	Charon.
Tebessa			30.03	762.8	93.2	34.0	32	NE			2		0			0	0	Clear	Watrin.
Geriville			30.01	762.3	103.6	39.8	10	S			4		0			0	0	Clear	Lonchamp.
Laghouat			29.97	761.2	96.4	35.8	37	E			1		0			0	0	Clear.	Herlin.
Biskra																			Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.28	743.6	29.60	756.9	74.5	23.6	46	SW			6		3			0.059	1.5		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.05	737.8	29.79	756.7	67.3	19.6	60	NW	6.9	3.1			6			0.098	2.5		Dr. Wierzbicki.
Eperies	28.90	734.1	29.75	755.6	69.1	20.6	60	NW			2		10ks			0.081	2.05		Julius Mikolik.
Gratz	28.59	726.2	29.80	756.9	66.7	19.3	66	E			3		7			0	0		Andreas Rospini.
Hermannstadt	28.45	722.6	29.82	757.5	71.1	21.7	49	NW			3		2			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.48	723.5	29.78	756.3	67.5	19.7	69	SE			1		8			0.031	0.8		The Staff.
Lemberg	28.75	730.2	29.71	754.5	63.5	17.5	79	NW			3		10			0.055	1.4		Dr. T. Stanecki.
Pola	29.78	756.3	29.88	759.0	75.4	24.1	56	S			1		10			0.224	5.7		I.R. Hydrographic Office.
Szathmar	29.38	746.3	29.83	757.6	71.6	22.0	61	W			4		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.56	750.8	29.83	757.6	75.4	24.1	48	Calm			0		5			0.051	1.30		Karl Stancel.
Trieste	29.78	756.4	29.88	759.0	71.4	21.9	79	SW			1		10			0.953	24.2	Raining	P. Busin.
Vienna	29.15	740.5	29.89	759.1	60.3	15.7	86	S			1		10			0.181	4.6		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.68	753.8	29.87	758.7	65.8	18.8	55	NE			2	0	3		N	0	0		Royal Observatory.
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Low'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.80	756.9	29.90	759.4	53.6	12.0		E	11	4.9			9			Blank	Blank	Overcast	W. Boswell.
Ardrossan	29.88	758.9	29.90	759.4	59	15.0		NW			3		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.75	755.6	29.98	761.5	59.0	15.0		WNW	4	1.8			10					Overcast	S. Call.
Bidston (Liverpool Obs)			29.95	760.7	60	15.6		WNW	18	8.0			9					Overcast	John Hartnup.
Bolton (Sharples)	29.39	746.5	29.90	759.4	59.0	15.0		WNW	12	5.4			8					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.50	749.3	29.89	759.2	66.0	18.9	56	NW			1		3			0	0	D. clouds	J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	79	26.1		NE			1		6					Gloomy	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	29.81	757.2	29.90	759.4	68.2	20.1		SW			0.5		10s					Overcast	H. Todd.
Cardington			29.89	759.2	67.0	19.4		SE			0.2		8					Overcast	John McLaren.
Chatham (School M. E.)	29.78	756.4	29.91	759.7	67.0	19.4		Calm			0		8k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.92	760.2	29.97	761.2	56	13.3		NNW			4		10					Overcast	J. Mac Gowan.
Dover	29.86	758.4	29.89	759.2	63	17.2		E			2		6					¾ clouded	J. Costello.
Falmouth (Observatory)	29.77	756.1	30.00	762.0	64.7	18.2		NW			3		2					Misty	The Staff.
Fort Napier, Natal	27.90	708.6	30.11	764.8	69.8	21.0		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.66	753.4	29.88	758.9	86	30.0		NE			1		8					D. clouds	
Galway (Queen's College)			29.97	761.2	62	16.7		S			2		10					Overcast	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.96	761.0	30.02	762.5	79.4	26.3		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.68	753.9	29.88	758.9	60.1	15.6		W			2		10					Gloomy	D. G. Maclean.
Great Yarmouth	29.92	760.0	29.92	760.0	60	15.6		SE			2		0					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.73	755.1	29.90	759.4	65.5	18.6		SSE			1		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	29.72	754.9	29.99	761.7	62.5	16.9		NNE			1		4					D. clouds	Dr. S. E. Hoskins, F.R.S.
Helston	30.19	766.8	30.31	769.9	67	19.4		NNW			2	c				0.10	2.5	Very fine	M. P. Moyle.
Holyhead	29.96	761.0	29.97	761.2	60	15.6		NNW			2		1					Blue sky	John Tilston.
Jersey	29.68	753.9	29.96	761.0	64.2	17.9		N			2		2					D. clouds	J. Fisher.
Kew (Observatory)	29.86	758.4	29.90	759.4	66.8	19.3		WNW	4	1.8			8					Thunder-storm	The Met'g'l Office.
Leicester (Museum)	29.66	753.4	29.91	759.7	61.1	16.2		NE			1		10					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.89	759.2	29.96	761.0	78.0	25.6		N			2		0					Blue sky	A. King.
Nairn	29.79	756.7	29.88	758.9	58	14.4		Calm			0		8					¾ clouded	W. D. Penny.
Nassau, Bahamas			30.18	766.6	83.0	28.3		S			2		8					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.72	754.9	29.90	759.4	68.3	20.2		SSW			2		7k			0.003	0.08	D. clouds	F. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.40	746.7	29.92	760.0	63.7	17.6		NW			3–4		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.68	753.9	29.94	760.5	66	18.9		NNW			2		7					Misty	The Staff, for E. J. Stone, Esq
Plymouth	29.87	758.7	29.94	760.5	62.8	17.1		S			2		8					D. clouds	John Merrifield.
*Roche's Point	29.89	759.2	30.02	762.5	62	16.7		NNW			2		5					½ clouded	Wm. Kennedy.
St. Ann's Head	29.83	757.7	29.99	761.7	64	17.8		WNW			1		1					Blue sky	John C. Walker.
Sandwick Manse, Orkneys			29.91	759.7	56.8	13.8		S	7	3.1			10					Overcast	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.79	756.7	29.85	758.2	84.8	29.3		N			1		1					Blue sky	Serg't W. H. Lyne.
Sheffield	29.66	753.4	29.93	760.2	65.9	18.8		SW			2		6			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.88	758.9	29.91	759.7	64.7	18.2	71	W			2		10			0	0	Overcast	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.94	760.5	61.5	16.4		W	14	6.3			10					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	29.70	754.4	29.91	759.7	63.4	17.4		W			0–1		7					Showery	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.01	762.2	30.02	762.5	68	20.0		N			6		4					D. clouds	W. Newcombe.
Valencia (Observatory)	30.03	762.7	30.05	763.2	61.3	16.3		NW	14	6.3			6					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.08	764.0	30.12	765.0	56.7	13.7	87	NW	8.6	3.8		10	9			0	0	Threatening	The Staff, for D. Gill.
Hobart Town, Tasmania			29.65	753.1	51.0	10.6	80	N			1		10k			0.08	2.0	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.89	759.2	65.0	18.3		W			2		10k			0.01	0.3	Cloudy	Andrew Gibb.
Mauritius (Observatory)	30.02	762.5	30.21	767.2	71.9	22.2	62	SSE	19.5	8.7		0	2		SE	0.06	1.5	Squally	C. Meldrum.
Melbourne (Observatory)	29.98	761.5	30.07	763.8	50.2	10.1	92	WSW	15	6.7			10			0.22	5.6	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.92	760.0	59	15.0		N			3	5	5	SW		0	0		J. Youngclause.
North Unst, Shetland I's			29.93	760.2				E			2	0	2			0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S. Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia, N. 54° 50′, W. 17° 50′	3	SSW	Overcast	Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 33° 20′, W. 74° 55′	3	WSW	D. clouds	Capt. W. Randall.
Ship Lochee, S. 36° 20′, E. 19° 30′			Misty	Capt. J. Raeburn, R.N.R
Barque Queen of Cambria				Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 37° 34′, W. 7° 59′			Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.20	665.5	29.92	760.0	66.6	19.2	93	Calm			0	10ck;s				1.18	30.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.64	752.9	29.69	754.1	62.1	16.7	63	NW			4		10						
Fanöe	29.78	756.4	29.80	756.9	58.6	14.8	67	NW			6		9						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.67	753.6	29.71	754.7	52.0	11.1	75	SE			2		5						
Thorshavn (Fanöe)	29.86	758.5	29.90	759.4	52.5	11.4	67	Calm			0		10						
Vestervig	29.65	753.1	29.74	755.5	57.6	14.2	71	NW			6		0						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.39	746.5	29.95	760.5	64.4	18	80	NW			1		8n		SW	0.04	1.	Very cloudy	Collignon, Director.
Amiens, Normal School	29.85	758.1	29.95	760.8	59.7	15.4	93	SW			1		10		Calm	0	0	Covered	Vaillant, Director.
Arras, Engineer School	29.74	755.3	29.99	761.8	56.8	13.8	91	SE			1		4s	E		0	0		Klein, Commandant.
Avignon, Normal School	29.78	756.5	29.86	758.5	78.1	25.6	54	WSW			1		5		WSW	0.697	17.7	Cloudy	Giraud, Director.
Bar-sur-Seine	29.33	745.0	29.88	758.9	59.9	15.5	85	NNW			1		10		NNW	0.618	15.7	Covered	C. Saillard, Director.
Beauvais, Normal School	29.63	752.5	29.88	759.0	67.1	19.5	53	NNW			2		8	SE	NW	0.079	2.00	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	28.34	735.0	29.81	757.1	63.0	17.2	79	SE			1		5		S	0.165	4.2	Cloudy	A. Carré, Director.
Bordeaux	29.70	754.4	29.90	759.4	61.5	16.4	89	N			1		10		SW	0.047	1.2	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.02	737.0	29.94	760.4	69.8	21	59	N			1		8kn	S	S	0.063	1.6	Very cloudy	Marlot, Director.
Bourges, Normal School	29.38	746.3	29.91	759.8	68.2	20.1	99	WNW			8		6kn		WNW	0.063	1.6		M. Gence, Director.
Brest, Naval Observatory	29.72	754.9	29.97	761.1	64.8	18.2	72	ENE			2		3k		ENE	0.207	5.25		Ch. de Rermaree, Dir.
Caen, Normal School	29.82	757.3	29.89	759.2	63.7	17.6	78	N			2		5			0.039	1.00	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.44	747.8	29.84	757.9	75.2	24	53	W			1		2		W	0.610	15.5	Slightly cl'dy	September, Director.
Châlons-sur-Marne, N. Sch'	29.60	751.7	29.91	759.6	64.0	17.8	67	SW			1		8			0	0	Very cloudy	Jadot, Director
Chartres, Normal School	29.38	745.0	29.89	759.2	65.7	18.7	88	NW			1		8		W	0.028	0.7		E. Lequint, Director.
Clermont-Fd, Puy de D. Ob	28.53	724.7	29.86	758.4	62.4	16.9	62	W			1		10			0	0		Alluard, Director.
Commercy, Normal School	29.01	736.8	29.84	758.0	63.7	17.6	71	ESE			1		kn	ESE	ESE	0.08	2.		Dr. Coullet, Director.
Commune de Gréasque*	28.78	731.1	29.93	760.1	70.9	21.6	55	SW			1		8		SW	0.012	0.3	Stormy	L. Kina, Director.
Grenoble, Normal School	29.07	738.3	29.82	757.4	61.5	16.4	79	WNW			2		10kn			0.433	11.5	Raining	Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.72	754.9	29.93	760.3	60.1	15.6	93	NE			1		10			0.177	4.5	Covered	Mouillot, Director.
Le Mans, Normal School	29.61	752.1	29.91	759.8	63.9	17.7	72	NE			2		5	NNE	NNE			Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	28.98	736.1	29.88	758.9	60.3	15.7	83	SW			1		5		SW	0.394	10.00	Raining	M. Cadoret, Director
Lorient, Naval Observatory	29.84	758.0	29.94	760.5	66.9	19.4	54	NE			2		8		NE			¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station	29.26	743.1	29.86	758.4	65.5	18.6	67	SE			1		10kn		N			Thunder-storm	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.60	751.8	29.86	758.5	76.1	24.5	55	S			1		5		WSW	0.236	6.00		E. Stephan, Director.
Mirecourt, Normal School	28.84	732.4	29.85	758.2	63.7	17.6	88	SE			1		kn		SE	0.12	3.		Barbier, Director.
Mont-Louis	24.74	628.3	29.97	761.3	51.4	10.8	72	NW	11.2	5.0			8		S	0.331	8.4		M. Cave, for Dr. Fines.
Nice	29.87	758.8	29.91	759.6	66.9	19.4	79	S			2			SE	S	0.299	7.6		Capt. Boissière, Director.
Nismes, Normal School	29.65	753.0	29.85	758.1	74.7	23.7	62	W			1		5		W	0.83	21.	Cloudy	M. Boyer, Director.
Perpignan	29.77	756.2	29.87	758.8	70.9	21.6	67	N	9.4	4.2			7	NW	W	0.035	0.9		Dr. Fines.
Pic du Midi (Plantade) H. P	22.47	570.8			35.6	2.0							10		SW	0.661	16.8	Snowy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	28.84	732.4	29.87	758.8	65.1	18.4	51	SW			1		5	SW	SW	0	0	Cloudy	M. Tallien
Puy de Dome (Summit) Ob	25.07	636.8			43.2	6.2	89	W			3		8		W	0.016	0.4	Showery	Alluard, Director.
Rochefort, Naval Obs'y	29.91	759.6	29.94	760.4	68.9	17.7	83	S			1		10	S	S	0.12	3.	Covered	Lt E. Devante, Director
Rouen, Normal School	29.82	757.4	29.91	759.6	67.6	19.8	68	NW			1		5		NW	0.228	5.8	Cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.89	759.3	29.93	760.1	65.7	18.7	78	NNE			3		1		NNE	0.148	3.77	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.72	755.0	29.89	759.2	64.0	17.8	70	WNW			1		10		N	0	0		E. Renou, Director.
Tarbes, Normal School	28.85	732.9	29.91	759.6	66.2	19	46	NW			1								T. Huguet, Director.
Toulouse, Observatory	29.24	742.8	29.97	761.2	66.4	19.1	59	W			1		5	W		0.362	9.2	Cloudy	B. Bailland, Dir.
Tours	29.70	754.3	29.89	759.3	68.4	20.2	62	WNW			1		8		N	0.480	12.2	¾ covered	M. de Tastes.
Versailles, Observatory	29.41	746.9	29.90	759.4	66.2	19.0	56	NW			1					0	0		Dr. A. Berigny, Directo
Villefranche-sur-Saone, N. S	29.15	740.5	29.84	757.8	76.3	24.6	43	NNW			1		2		W	0	0	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.22	767.5	30.24	768.2	81.0	27.2										0.83	21.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.61	752.2			64.8	18.2	61	NNW			1		10		WNW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.75	755.7	29.78	756.3	75.4	24.1	94	ESE	10.3	4.6			7			0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,012.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	28.98	736.1	29.84	757.9	68.0	20.0	91	W			6		4k	W		0.008	0.2		Prof. Dr. Hoh.
Berlin	29.65	753.1	29.82	757.3	67.1	19.5	46	NW			4		4			0.252	6.4		Prof. Dr. Arndt.
Breslau	29.32	744.7	29.85	758.1	55.8	13.2	94	W			2		9			0.283	7.20	Thunder-storm	Royal University Obs'y
Carlsruhe	29.41	746.9	29.82	757.3	70.5	21.4	66	NE			1		9	SW		0.055	1.4	Raining	Albert Senz.
Cassel	29.22	742.3	29.83	757.6	66.9	19.4	46	N			4		5	N		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.50	749.3	29.86	758.5	71.6	22.0	43	N			2		6			0.051	1.3		Physical Society.
Friedrichshafen	28.41	721.6	29.79	756.7	68.4	20.2	67	SW			1		9	SW		0.268	6.8		Chief Telegrapher Wilhelm.
Hamburg	29.79	756.7	29.87	758.6	61.0	16.1	62	WNW			4		8			0	0		Dr. Reinhold Kleeman.
Kiel	29.78	756.5	29.80	756.9	62.8	17.1	65	W			6		7			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.63	752.7	29.71	754.7	68.9	20.5	59	W			4		7	W		0.008	0.2		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.45	748.1	29.87	758.6	64.0	17.8	65	NNW			2		8	WNW		0.244	6.2		Prof. Dr. Bruhns, Privy Counselo
Magdeburg	29.63	752.6	29.85	758.3	69.1	20.6	46	WNW			4		2k	WNW		0	0		Dr. Assmann.
Memel	29.67	753.7	29.72	754.9	62.2	16.8	69	NW			4		6cs						Reinbrecht & Issermann
Munich	28.04	712.1	29.89	759.1	68.0	20.0	45	N			4		9			0.012	0.3		Dr. C. Lang.
Neufahrwasser	29.74	755.4	29.76	755.8	66.0	18.9	60	W			2		9			0.024	0.6		A. Lothes.
Neustadt (Palatinate)	29.32	744.6	29.84	757.9	67.1	19.5	61	WSW			2		8	W				Rainy	Reallehrer Dicknether.
Posen	29.49	749.0	29.77	756.1	66.0	18.9	42	NW			4		7			0.283	7.2		Prof. Dr. Magener.
Strassburg (in Alsace)	29.34	745.3	29.88	759.0	63.3	17.4	68	SW			3		9			0.062	1.58		Imp. University Observatory.
Stuttgart	28.87	733.4	29.73	755.2	70.7	21.5	44	NW					9	W		0	0		Prof. Dr. Schoder.
Thorn	29.58	751.2	29.76	755.9	66.6	19.2	55	W			3		10			0.071	1.8		Dr. Cunerth.
Weissenburg (Bavaria)	28.37	720.6	29.94	760.5	69.8	21.0	47	NNE	0.2	0.1			9ck	W		0	0		Reallehrer J. Hopfner.
Wustrow	29.76	755.8	29.78	756.5	62.2	16.8	66	W SW			5		10s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.52	749.8	29.89	759.3	89.2	31.8		SW			2.5		0					Clear	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.42	747.2	29.47	748.5	85.3	29.6	80	SSW	32.7	14.6			8	E	W	0	0	Misty	
Deesa	29.05	737.8	29.51	749.5	89.5	31.9	51	SSW					7	E		0.05	1.3	D. clouds	
Bombay	29.63	752.5	29.66	753.4	78.4	25.8	95	W	18.0	8.0			10		WSW	0.91	23.1	Overcast	
Poona (Yarrowda)	27.84	707.2	29.72	754.8	71.3	21.8	87	SW	13.0	5.8			10	WSW	WSW	0.06	1.5	Drizzling	
Belgaum	27.24	691.9	29.80	757.0	69.6	20.9	93	WSW	11.0	4.9			8	W	SW	0.16	4.1	Showery	
Lahore	28.72	729.6	29.44	747.9	90.1	32.3	65	E	3.1	1.4			8		E	0	0	D. clouds	
Roorkee	28.64	727.2	29.52	749.9	79.2	26.2	87	Calm	4.0	1.8			4			1.44	36.6		
Agra	28.89	733.7	29.43	747.4	95.6	35.3	50	E	5.7	2.8						0	0		
Nagpur	28.52	724.3	29.66	750.7	77.7	25.4	91	W	6.5	2.9			9		W	1.04	26.4		
Jubbulpore	28.18	715.6	29.52	749.9	81.3	27.4	83	SW	3.7	1.6			8			1.20	30.5		
Lucknow	29.13	739.9	29.50	749.2	92.1	33.4	59	E	4.6	2.1			5	NNW		0	0	D. clouds	
Allahabad	29.16	740.6	29.46	748.2	95.0	35.0	55	E	3.1	1.4			0			0	0	Blue sky	
Patna	29.33	745.0	29.51	749.5	91.3	32.9	62	E	2.4	1.1			4	E	E	0	0	D. clouds	
Hazaribagh	27.54	699.4	29.52	749.8	79.8	26.6	81	ESE	11.7	5.2			3		E	0.26	6.6	Showery	
Cuttack	29.41	746.9	29.49	749.0	80.0	26.7	86	NNE	2.5	1.1			10			0.59	15.0	Overcast	
Calcutta (Alipore)	29.50	749.3	29.52	749.9	82.5	28.2	79	SE	8.0	3.6			6	SE	SE	0.61	15.5	D. clouds	
Goalpara	29.20	741.6	29.60	751.9	77.9	25.5	92	WNW	2.6	1.2			8			0.10	2.5	Thunder-showers	
Chittagong	29.52	749.9	29.62	752.2	79.9	26.6	86	ESE	4.8	2.2			9			0	0	D. clouds	
Sibsagar	29.25	742.8	29.57	751.2	85.9	29.9	76	WSW	2.0	0.9						0	0	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.47	748.6	29.87	758.7	68.9	20.5	69	SW	3.1	1.4			10			0.386	9.8		Prof. Giovanni Clodig.
Milan	29.35	745.6	29.87	758.6	62.8	17.1	81	NW	5.6	2.5			10	W		0	0		Prof. Schiaparelli.
Padua	29.78	756.4	29.89	759.2	68.7	20.4	67	SW	6.3	2.8			10	SW		0.059	1.5		Prof. Dott. Lorenzoni.
Moncalieri	28.93	734.9	29.81	757.2	67.3	19.6	69	E	8.7	3.9			9	NW		0.197	5.0		Prof. P. F. Denza.
Genoa	29.72	754.9	29.91	759.7	65.1	18.4	75	SE	9.8	4.4			10	SW		0.122	3.1		Prof. G. M. Garibaldi.
Mondovi	27.95	710.0	29.80	756.9	63.9	17.7	65	W			4		9			0.028	0.7		Prof. D. C. Bruno.
Pesaro	29.82	757.5	29.87	758.7	77.4	25.2	89	SW	7.4	3.3			9	SW		0	0		Prof. Luigi Guidi.
Florence	29.65	753.1	29.90	759.5	75.2	24.0	53	NW			2		10	SW		0	0		Cav. F. Meucci.
Leghorn	29.84	758.0	29.93	760.1	71.1	21.7	68	S	4.3	1.9			10			0	0		Prof. P. Monte.
Rome	29.78	756.5	29.96	760.9	79.3	26.3	51	SW					10			0	0		Prof. P. Tacchini.
Lecce	29.69	754.1	29.93	760.3	82.0	27.8	26	W	14.3	6.4			0			0	0		Prof. C. De Giorgi.
Cosenza	29.06	738.1	29.91	759.7	87.4	30.8	64	NW	3.1	1.4			0			0	0		Prof. D. Conti.
Cagliari	29.68	753.8	29.87	758.7	75.6	24.2	67	SE			2		0			0	0		Prof. A. Pacinotti.
Palermo	29.71	754.7	29.96	761.0	76.3	24.6	56	NE	8.1	3.6			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.90	759.5	29.95	760.6	83.7	28.7	51	ESE	9.8	4.4			0			0	0		Prof. V. G. Guiliano.
SUB-SERIES.																			
Naples, S. R.	29.43	747.6	29.94	760.5	78.1	25.6	61	ESE	1.3	0.6			2			0	0		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.5	20.3	82	NNE	5.3	2.4			0			0	0	Clear	K. Sasaki.
Nagasaki, I. M. Obs'y	29.75	755.6	29.95	760.7	68.0	20.0	91	SSW	3.8	1.7			0			0	0	Clear	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.82	757.4	29.89	759.2	67.7	19.8	87	ENE	4.0	1.8			10s			0.035	0.89	Covered	The Staff.
Wakayama	29.84	757.9	29.89	759.2	69.8	21.0	64	E	3.2	1.4			0			0	0	Clear.	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

[Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.4	29.98	761.6	60.8	16.0	74	E			1	3ks	0			0	0	Clear.	Prof. L. Perez.
Guanaxuato	23.65	600.8			58.1	14.5	72	Calm	0	0		3c	0	N	Calm	0	0	Clear.	Vicente Fernandez.
Leon	24.39	619.5	30.03	762.7	62.0	16.7	75	S			1	0	0			0	0		Prof. M. Leal.
Mazatlan	29.60	751.8	29.85	758.3	76.3	24.6	86	SE			3	4cs	1k	SE		0	0	Fair	F. Quijano, C. E.
Mexico, Central Observatory	23.06	585.7	29.97	761.2	59.0	15.0	88	Calm	0	0		1c	2k			0.27	6.9		The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.92	607.5	29.82	757.4	62.8	17.1	82	SE			1	1c	0			0	0	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.47	596.0	30.18	766.5	57.2	14.0	52	Calm	0	0		2ck	0	E		0.19	4.9	Clear	Prof. P. Spina.
San Luis Potosi	24.18	614.1	30.08	764.0	62.1	16.7	62	E			1	1	1	W	E	0	0	Hazy	G. Barroeta, M D.
Tlacotalpam	29.90	759.4	29.91	759.7	77.2	25.1	*93	Calm			0	3	2	NW	S	0.11	2.9	½ clouded	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.59	573.8	30.18	766.5	55.4	13.0	89	NE			2	1c	0	NE		0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.3 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. * Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.91	759.6	29.91	759.6	66.9	19.4		NNE			2					0.205	5.2		
Groningen	29.85	758.3	29.91	759.7	60.4	15.8		N			1					0	0		
Helder	29.91	759.7	29.91	759.7	60.6	15.9		NE			1					0	0		
Hellevoetsluis	29.90	759.4	29.90	759.4	66.0	18.9	61	NW			1					0	0		
Utrecht	29.86	758.4	29.91	759.6	65.3	18.5	60	NW			1		5			0	0	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.73	755.2	29.79	756.6	54.7	12.6	55	NNW	17.7	7.9			0			0	0		
Brönö	29.69	754.1	29.73	755.1	46.0	7.8	61	W	18	8			8			0.205	5.2		
Christiania	29.51	749.6	29.65	753.2	65.7	18.7	37	NNW	7	3			8			0	0		
Tromsö	29.35	745.6	29.41	747.0	41.0	5.0	81	SSW	13	6			10			0.150	3.8		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

STATIONS.	Barometer. Corrected. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.09	764.2	30.29	769.4	73.4	23.0	86	SW			3		4			0	0		Dr. J. A. Sampaio.
Campo Major	29.11	739.4	30.08	764.1	73.4	23.0	39	WNW	4.9	2.2			5	N		0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.13	765.4	30.22	767.6	70.2	21.2	64	SW	3.8	1.7			9			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.86	758.4	30.21	767.4	67.3	19.6	53	N	13.7	6.1			8			0	0		The Staff.
Ponta Delgada (Azores)	30.24	768.0	30.31	769.8	73.0	22.8	74	S	3.8	1.7			4	WSW		0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.	Barometer. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva Costa. St. Paul de Loando			29.87	758.6	71.6	22.0		NW			1		0			1	NW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello. Mossamedes, Benguela.			29.98	761.6	64.4	18.0		NW			2		8			2	NW		Gloomy	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.58	751.3	29.60	751.8	68.0	20.0	53	SSE	9	4			5ks						Capt. Sseliwerstow.
Astrakhan	30.00	761.9	29.91	759.8	81.9	27.7	34	SE	7	3			1s						Capt. Wisganow.
Barnaul	29.24	742.7	29.72	754.9	63.7	17.6	47	WNW	9	4			3						Meteorological Obs.
Dorpat	29.43	747.4	29.66	753.4	63.9	17.7	77	NW	4	2			10n						Prof. Dr. Weihrauch.
Ekaterinburg	29.01	736.9	29.95	760.7	70.2	21.2	52	N	2	1		ck	9kn						Meteorological Obs.
Irkutsk																			
Kasan	29.68	753.9	29.95	760.6	60.6	15.9	90	NW	2	1			9n					Light rain	Physical Cabinet.
Kertch	29.80	757.0	29.82	757.5	69.4	20.8	91	S	7	3			4						Lagorio.
Kieff	28.98	736.0	29.58	751.4	71.4	21.9	70	SSW	9	4		c	7cs;ks						Physical Cabinet.
Krotkowo*	29.61	752.2	30.07	763.6	78.1	25.6	43	SW					4						Cand. Fatjanow.
Lugan	29.48	748.8	29.67	753.7	82.4	28.0	25	SSE	22	10			7			Blank	Blank		Meteorological Obs.
Moscow	29.28	743.8	29.81	757.1	71.4	21.9	67	SW	9	4			6ks						Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.65	753.0	29.72	754.8	70.3	21.3	78	S	18	8			9n						Kurdakof.
Nikolaievsk, on the Amoor	29.89	759.1	29.97	761.3	49.6	9.8	88	N	4	2			10n						
Nukuss	29.55	750.5	29.77	756.2	80.2	26.8	38	NNE	8.9	4.0			0						
Orenburg																			
Pekin (China)	29.55	750.5	29.69	754.1	70.9	21.6	93	Calm	0	0			10n					Raining	Physical Observatory.
St. Petersburg	29.61	752.2	29.63	752.6	72.1	22.3	54	NNW	4	2			10s;n					Light clouds	Central Physical Obs.
Tashkend	28.08	713.2	29.52	749.8	91.8	33.2		Calm	0	0			0						Teich, A. M.
Tiflis	28.48	723.3	29.81	757.2	83.7	28.7	40	SE	4	2			3k						Physical Observatory.
Vladivostock																			
Warsaw	29.32	744.6	29.72	754.9	68.5	20.3	62	W	18	6			9ks						Astronomical Obs.
Wilna	29.25	742.9	29.65	753.2	63.9	17.7	89	SW	2	1			10					Raining	Astronomical Obs.
Yeniseisk	29.26	743.3	29.53	750.1	77.7	25.4	47	ESE	7	3			4						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.82	757.4	29.92	760.0	79.5	26.4	45	WSW	6.0	2.69			1			0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.02	762.4	30.07	763.8	64.6	18.1	82	NW	2.9	1.30		2	8	N		0.157	4.0	Rainy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.08	687.7			64.8	18.2	60	W	9.7	4.34			8			0	0	Cloudy	Domingo Martin y Peres
Madrid, Royal Observatory	27.83	706.8	29.97	761.1	73.4	23.0	36	NW	21.6	9.66		0	2			0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.78	756.5	29.93	760.1	89.6	32.0	36	NE	3.4	1.53		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.20	741.6	30.08	764.1	63.1	17.3	74	NW	11.9	5.3			9			0.480	12.2	Almost cov'd	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.07	763.8	30.13	765.4	80.6	27.0	75	ESE	2.7	1.2		5ck;cs	0	ESE		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.87	758.6	29.92	759.9	82.3	27.9	86	ESE	5.9	2.7		1c	3s	E	W	0.06	1.5	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.02	762.4	30.11	764.9	71.6	22.0	61	WNW	19.2	8.6		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.03	762.8	30.12	765.1	82.0	27.8	86	E	21.9	9.80		1k	5k	E	E	0.079	2.00	D. clouds	Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 665.5 m., or 2,180.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.48	748.7	29.52	749.7	58.6	14.8	.....	NW	.....	.....	4	.....	5	.....	.....	0	0	.....	
Umea	29.53	750.0	29.58	751.3	60.4	15.8	41	NW	.....	.....	2	.....	2	.....	.....	0.039	1.0	.....	
Hernosand	29.57	751.1	29.62	752.4	61.2	16.2	38	N	.....	.....	2	.....	5	.....	.....	0.138	3.5	.....	
Stockholm	29.42	747.3	29.60	751.8	63.7	17.6	56	NE	.....	.....	4	.....	10	.....	.....	0.055	1.4	.....	
Wisby	29.57	751.0	29.63	752.5	60.4	15.8	64	W	.....	.....	2	.....	5	.....	.....	0	0	.....	
Sub-Series.																			
Upsala	29.54	750.2	29.62	752.4	53.8	12.1	80	NNE	13.2	5.9	.....	.....	10	.....	NNE	0.010	0.26	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell Height scale 0-9	Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 36° 08′, W. 19° 18′	.....	.....	30.33	770.3	73.4	23.0	.....	ENE	.....	.....	3	.....	7	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.48	723.4	29.90	759.5	55.4	13.0	86	NNE	.....	.....	1	.....	10	.....	.....	0.240	6.1	Covered	The Observatory.
Zurich	28.24	717.3	29.84	757.8	67.6	19.8	61	NW	.....	.....	2	.....	8	.....	.....	0.059	1.5	Cloudy	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.6 mm.; Thermometer, —8.7 Cent. Relative Humidity, +32 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 405 meters, or 1,329 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.91	759.7	78.4	25.8	50	ENE	12	5.5	.....	.....	1	.....	SW	0	0	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Valona	.....	.....	30.01	762.2	81.5	27.5	.....	S	.....	.....	6	.....	2	.....	.....	0	0	Slightly cld'y	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.86	758.4	82.0	27.8	64	NW	.....	.....	1	.....	0	.....	.....	0	0	.....	Prof. C. V. A. van Dyck.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	56.0	13.3	.....	Calm	0	0	.....	.....	10ks	.....	.....	0	0	Cloudy	Hon. J. Ferguson.
Chatham, N. B.	29.73	755.1	29.79	756.7	61.8	16.6	97	SW	2	0.9	.....	.....	10n	.....	.....	0.06	1.5	Cloudy	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	60.9	16.1	85	S	10	4.5	.....	.....	10n	.....	.....	0	0	Cloudy	H. J. Cundall, C. E.
Cornwall, Ontario	29.60	751.8	29.78	756.4	72.3	22.4	82	W	.....	.....	3	.....	9s	.....	.....	0	0	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.60	751.8	29.70	754.4	52.8	11.6	96	E	.....	.....	2	.....	10n	.....	.....	0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.65	753.1	29.67	753.6	47.5	8.6	89	SW	1	0.4	.....	.....	Fog	.....	.....	0.11	2.8	Foggy	J. McWilliams.
Fredericton, N. B.	29.74	755.4	29.81	757.2	62.9	17.2	91	SE	2	0.9	.....	.....	Mist	.....	.....	0.580	14.73	Foggy	Prof. Harrison.
Fort Garry, Manitoba	28.80	731.5	29.58	751.3	67.2	19.6	83	S	1	0.4	.....	2k	2ks	W	.....	0.025	0.64	Fair	James Stewart.
Granton, Ontario	28.86	733.0	29.92	760.0	66.0	18.9	100	Calm	.....	.....	0	.....	Fog	.....	.....	0.30	7.6	Foggy	James Grant.
Halifax, N. S.	29.80	756.9	29.92	760.0	54.7	12.6	95	SE	5	2.2	.....	.....	Fog	.....	.....	0	0	Foggy	A. Allison.
Hamilton, Ontario	29.56	750.8	29.93	760.2	71.7	22.1	83	SW	.....	.....	1	10cs	0	W	.....	0.11	2.8	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.51	749.5	29.83	757.7	71.5	21.9	73	W	6	2.7	.....	3k	0	W	.....	0	0	Fair	S. Woods, M. A.
Little Glace Bay, N. S.	29.90	759.4	29.94	760.5	52.3	11.3	86	SE	3	1.3	.....	5c	0	S	.....	0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.58	751.3	29.77	756.1	72.0	22.2	84	W	11	4.9	.....	.....	8ks	.....	.....	0.03	0.8	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	30.07	763.8	30.11	764.8	44.5	6.9	88	NW	.....	.....	1	.....	10n	.....	.....	0.18	4.6	Cloudy	J. R. Nason.
Norwood, Ontario	29.19	741.4	29.85	758.2	72.0	22.2	78	W	9	4.0	.....	3k	0	NW	.....	0.05	1.3	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.23	742.4	29.89	759.2	67.2	19.6	82	W	3	1.3	.....	0	0	.....	.....	0.20	5.1	Clear	Rev. R. Mosley.
Peterboro, Ontario	29.18	741.1	29.89	759.2	73.5	23.1	77	W	.....	.....	2	0	0	.....	.....	0.14	3.6	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.29	744.0	29.94	760.5	68.1	20.1	95	Calm	0	0	.....	.....	Fog	.....	.....	0.47	11.9	Foggy	H. Morgan.
Port Stanley, Ontario	29.31	744.5	29.93	760.2	69.0	20.6	92	NW	1	0.4	.....	3ck	0	W	.....	0.50	12.7	Fair	M. Payne.
Quebec, Quebec	29.43	747.5	29.74	755.4	62.0	16.7	100	NE	.....	.....	1	.....	10s	.....	.....	0.66	16.8	Light rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.39	746.5	29.83	757.7	65.6	18.7	89	W	3	1.3	.....	.....	8ks	.....	.....	0.19	4.8	Cloudy	W. H. McIntyre.
St. John, N. B.	29.65	753.1	29.81	757.2	58.0	14.4	100	S	5	2.2	.....	.....	10n	.....	.....	0	0	Overcast	G. Murdock, C. E.
Saugeen, Ontario	29.22	742.2	29.88	758.9	67.2	19.6	90	SE	4	1.8	.....	.....	Fog	.....	.....	0.51	13.0	Foggy	K. Stewart.
Stratford, Ontario	28.70	729.0	29.93	760.2	64.9	18.3	93	Calm	0	0	.....	.....	Fog	.....	.....	0.796	20.13	Foggy	C. J. MacGregor, M. A.
Sydney, C. B.	29.90	759.4	29.94	760.5	65.0	18.3	73	SE	1	0.4	.....	5c	0	.....	.....	0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.56	750.8	29.92	760.0	71.5	21.9	78	W	3	1.3	.....	0	0	.....	.....	0.18	4.6	Clear	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.89	733.8	29.91	759.7	70.3	21.3	90	SW	2	0.9	.....	.....	10ks	.....	S	0.45	11.4	Cloudy	Professor Wolverton.
Yarmouth, N. S.	29.78	756.4	29.84	757.9	61.4	16.3	96	SE	2	0.9	.....	8k	Fog	W	.....	0.01	0.3	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.73	755.1	29.99	761.7	43	6.1	100	NW	4	1.8	.....	2k	5s	.....	.....	0.05	1.3	Clear	John Delany.
St. Pierre, N. F., l'Hopital Maritime	.....	.....	29.84	757.9	55.4	13.0	.....	N	.....	.....	2	.....	.....	.....	.....	0.94	23.9	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.80	756.9	29.88	758.9	78	25.6	69	SW	2	0.9		5cs	0	W		0.31	7.9	Fair	
Alpena, Michigan	29.29	744.0	29.91	759.7	65	18.3	84	N	3	1.3		2k	0	W		0	0	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.01	736.8	30.12	765.0	72	22.2	85	S	9	4.0			10s		S	0.97	24.6	Cloudy	
Atlantic City, New Jersey	29.97	761.2	29.98	761.5	79	26.1	78	W	7	3.1		0	0			0	0	Clear	
Augusta, Georgia	30.01	762.2	30.20	767.1	76	24.4	86	S			1	2cs	2s;hz'	S	S;Calm	0.04	1.0	Fair	
Baltimore, Maryland	29.96	761.0	30.00	762.0	81	27.2	67	W	6	2.7		2c	Haze	Calm	Calm	0.44	11.2	Clear	
Barnegat, New Jersey	29.93	760.2	29.95	760.7	81	27.2	67	W	11	4.9		0	0			0	0	Clear	
Bismarck, Dakota	27.88	708.1	29.74	755.4	70	21.1	75	E	4	1.8		1c	1ks	NW	Calm	0	0	Clear	
Boerne, Texas	28.80	723.9	29.76	755.9	74	23.3	95	S	2	0.9		8k	0	S		0	0	Cloudy	
Boise City, Idaho	27.12	688.8	30.18	766.6	58	14.4	48	S	3	1.3		2k	0	Calm		0	0	Fair	
Boston, Massachusetts	29.68	753.9	29.52	757.4	77	25.0	73	W	4	1.8			10s		SW	0	0	Cloudy	
Brackettville, Texas	28.77	730.7	29.78	756.4	76	24.4	77	SE	6	2.7		8cs	2s	Calm	Calm	0	0	Cloudy	
Breckenridge, Minnesota	28.74	730.0	29.68	753.9	67	19.4	84	S	10	4.5		2k	0	S		0	0	Fair	
Brownsville, Texas	29.86	758.4	29.90	759.4	79	26.1	91	Calm	0	0		5k	0	SE		0	0	Fair	
Buffalo, New York	29.24	742.7	29.91	759.7	69	20.6	95	SW	5	2.2			10s		SW	0.15	3.8	Cloudy	
Burkes, Arizona					65	18.3	31	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.54	750.3	29.81	757.2	71	21.7	90	SW	8	3.6			10n		W	0.25	6.3	Light rain	
Cairo, Illinois	29.65	753.1	30.02	762.5	75	23.9	86	S	5	2.2			10s		S	0.01	0.3	Cloudy	
Campo, California	27.35	694.7	29.92	760.0	38	3.3	81	SW	2	0.9		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	80	26.7	82	SW	14	6.3		0	0			0	0	Clear	
Cape Henry, Virginia	30.02	762.5	30.04	763.0	82	27.8	63	SW	16	7.2		5ck	0	SW		0	0	Fair	
Cape Lookout, N. Carolina	30.15	765.8	30.17	766.3	80	26.7	87	SW	15	6.7		8ck	0	W		0	0	Cloudy	
Cape May, New Jersey	29.96	761.0	29.99	761.7	76	24.4	81	SW	8	3.6		1cs	0	SW		0	0	Clear	
Castroville, Texas	29.16	740.7	29.83	757.7	80	26.7	78	SE	4	1.8		5c	0	Calm		0	0	Fair	
Cedar Keys, Florida	30.16	766.1	30.19	766.8	80	26.7	82	SE	11	4.9		5cs	1ks	E	Calm	0	0	Fair	
Charleston, South Carolina	30.11	764.8	30.16	766.1	85	29.4	72	SW	6	2.7		0	8ks		SW	0	0	Cloudy	
Charlotte, North Carolina	29.29	744.0	30.07	763.8	75	23.9	81	SW	4	1.8		5ck	5s	NE	SW	0.07	1.8	Cloudy	
Chattanooga, Tennessee	29.32	744.7	30.10	764.5	72	22.2	85	SW	2	0.9			10s		SW	0.60	15.2	Cloudy	
Cheyenne, Wyoming	24.03	610.4	29.97	761.2	54	12.2	43	W	3	1.3		0	0			0	0	Clear	
Chicago, Illinois	29.22	742.2	29.87	758.7	76	24.4	82	Calm	0	0		2cs	1s	Calm	Calm	0.50	12.7	Fair	
Chincoteague, Virginia	30.00	762.0	30.02	762.5	79	26.1	84	W	15	6.7		8ck	0	W		0	0	Cloudy	
Cincinnati, Ohio	29.37	746.0	29.99	761.7	75	23.9	86	SW	2	0.9			10s		SW	1.27	32.3	Cloudy	
Cleveland, Ohio	29.26	743.2	29.95	760.7	71	21.7	90	SW	7	3.1		5k	5ks;fg	SW	SW	1.75	34.5	Cloudy	
Coleman City, Texas	28.15	715.0	29.75	755.6	69	20.6	90	SE	6	2.7			10s		Calm	0	0	Cloudy	
Columbus, Ohio	29.16	740.7	29.95	760.7	75	23.9	81	S	2	0.9			10s		S	0.49	12.4	Cloudy	
Concho, Texas	28.04	712.2	29.66	753.4	72	22.2	71	SE	10	4.5		0	8s		NE	0.28	7.1	Cloudy	
Corsicana, Texas	29.61	749.5	29.96	761.0	78	25.6	82	S	8	3.6		0	8ks		S	0	0	Cloudy	
Davenport, Iowa	29.28	743.7	29.88	758.9	72	22.2	85	Calm	0	0			10s		W	0	0	Cloudy	
Dayton, Washington T'y					61	16.1	60	SW			2	2c	0	W		0	0	Fair	
Deadwood, Dakota	25.81	642.9			64	17.8	78	Calm	0	0		0	5s		SW	0	0	Fair	
Decatur, Texas	28.73	729.7	29.83	757.7	78	25.6	78	SE	18	5.8			10s		S	0	0	Cloudy	
Delaware Breakwater, Del.	29.98	761.5	30.10	762.0	77	25.0	77	SW	10	4.5		2c	0	SW		0	0	Fair	
Denison, Texas	29.12	739.6	29.87	758.7	75	23.9	86	S	10	4.5		8ck	0	SW		0.02	0.5	Fair	
Denver, Colorado	24.75	628.6	29.97	761.2	57	13.9	47	S	2	0.9		0	0			0	0	Clear	
Des Moines, Iowa	29.03	737.3	29.87	758.7	72	22.2	76	Calm	0	0		0	Fog		Calm	0	0	Dense fog	
Detroit, Michigan	29.28	743.7	29.92	760.0	70	21.1	85	W	1	0.4		5cs	0	Calm		1.56	39.6	Fair	
Dodge City, Kansas	27.33	694.2	29.53	750.0	66	18.9	74	Calm	0	0		0	0			Inap.	Inap.	Clear	
Dubuque, Iowa	29.23	742.4	29.90	759.4	68	20.0	84	NW	1	0.4		5cs	2s;fg	NW	Calm	0	0	Cloudy	
Duluth, Minnesota	29.17	740.9	29.82	757.4	61	16.1	82	Calm	0	0		1c	0	W		0	0	Clear	
Eagle Pass, Texas	29.10	739.1	29.79	756.7	85	29.4	67	SE	8	3.6		8ck	0	Calm		0	0	Fair	
Eastport, Maine	29.71	754.6	29.77	756.1	56	13.3	100	S	4	1.8			10n;fog		S	0.50	12.7	Light rain	
Edinburg, Texas					77	25.0	91	SE			4	5c	0	S		0	0	Fair	
El Paso, Texas	26.12	663.4			72	22.2	50	W	6	2.7		0	0			0	0	Clear	
Erie, Pennsylvania	29.24	742.7	29.91	759.7	75	23.9	77	SW	5	2.2		5ck	0	W		0.32	8.1	Fair	
Escanaba, Michigan	29.26	743.2	29.88	758.9	67	19.4	69	N	4	1.8		5c	0	NW		0	0	Fair	
Florence, Arizona	28.30	718.8	29.90	759.4	66	18.9	32	N	2	0.9		0	0			0	0	Clear	
Fort Apache, New Mexico	25.04	636.0	30.48	774.2	45	7.2	61	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.73	704.3	29.46	748.3	65	18.3	78	NE	5	2.2		5cs	0	W		0.06	1.5	Fair	
Fort Custer, Montana	26.70	678.2			70	21.1	64	SW	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.21	640.3	30.18	766.6	62	16.7	67	SW	1	0.4		0	0			0.39	9.9	Clear	
Fort Elliot, Texas	26.88	682.7	29.04	737.6	61	16.1	82	SE	4	1.8		5c	0	SE		0.19	4.8	Fair	
Fort Gibson, Indian Ter.	29.38	746.2	29.89	759.2	73	22.8	76	SE	8	3.6		5cs	0	E		0	0	Fair	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	73	22.8	14	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.64	727.4	29.85	758.2	71	21.7	80	S	6	2.7		0	8s		Calm	1.03	26.2	Cloudy	
Fort Keogh, Montana	27.06	687.3			68	20.0	60	SW	14	6.3		0	0			0	0	Clear	
Fort McKavett, Texas	27.77	705.4	29.61	752.1	72	22.2	67	E	13	5.8		4cs	4ks	E	S	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.68	728.5	29.73	755.1	74	23.3	81	NE	3	1.3		10cs	0	Calm		0	0	Cloudy	
Fort Stevenson, Dakota	27.86	707.6			65	18.3	78	NW	12	5.4		2k	0	W		0.06	1.5	Fair	
Fort Verde, Arizona					58	14.4	32	W			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.95	760.7	29.99	761.7	80	26.7	82	S	7	3.1		2ck	5ks	NW	S	0.10	2.5	Cloudy	
Grand Haven, Michigan	29.26	743.2	29.88	758.9	73	22.8	76	S	6	2.7		0	0			1.00	25.4	Clear	
Helena, Montana																			
Henrietta, Texas																			
Indianapolis, Indiana	29.20	741.7	29.94	760.5	73	22.8	85	S	2	0.9			10s		Calm	1.00	25.4	Cloudy	
Indianola, Texas	29.94	760.5	29.97	761.2	83	28.3	79	S	8	3.6		2c	0	Calm		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.17	766.3	30.20	767.1	81	27.2	74	S	6	2.7		5cs	0	W		0	0	Fair	
Keokuk, Iowa	29.26	743.2	29.84	757.9	73	22.8	90	NW	1	0.4		2cs	2s	W	NW	0	0	Fair	
Key West, Florida	30.12	765.0	30.16	766.1	82	27.8	83	E	5	2.2		0	8ks		E	0.02	0.5	Cloudy	
Kittyhawk, North Carolina	30.06	764.0	30.11	764.8	81	27.2	67	SW	16	7.2		5ck	0	SW		0	0	Fair	
Knoxville, Tennessee	29.12	739.6	30.09	764.3	72	22.2	80	SW	8	3.6			10ks		SW	0.11	2.8	Cloudy	
La Crosse, Wisconsin	29.15	740.4	29.85	758.2	69	20.6	75	SW	6	2.7		0	0			0	0	Clear	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	62	16.7	51	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.40	746.7	29.72	754.9	83	28.3	60	SE	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	29.06	738.1	29.86	758.4	73	22.8	72	S	1	0.4		5cs	0	SW		0.02	0.5	Fair	
Lewiston, Idaho	29.11	739.4	29.74	755.4	60	15.6	44	E	1	0.4		0	0			0	0	Clear	
Little Rock, Arkansas	29.64	752.8	29.94	760.5	74	23.3	90	S	6	2.7			10ks		S	0.50	12.7	Cloudy	
Los Angeles, California	29.60	751.8	29.94	760.5	56	13.3	87	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.43	747.5	29.96	761.0	75	23.9	86	SW	6	2.7			10s		Calm	0.52	13.2	Cloudy	
Lynchburg, Virginia	29.37	746.0	30.02	762.5	78	25.6	73	SW	3	1.3		10c	0	Calm		0	0	Cloudy	
Madison, Wisconsin	28.91	734.3	29.85	758.2	69	20.6	75	S	3	1.3		8c	0	W		0	0	Fair	
Marquette, Michigan	29.18	741.1	29.86	758.4	64	17.8	63	SW	2	0.9		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.38	720.8	30.08	764.0	69	20.6	95	NE	16	7.2			10n		NW	0.03	0.8	Light rain	
Memphis, Tennessee	29.70	754.4	30.02	762.5	76	24.4	86	SE	8	3.6		2cs	8s	Calm	SE	0.06	1.5	Cloudy	
Milwaukee, Wisconsin	29.17	740.9	29.86	758.4	71	21.7	71	W	5	2.2		8c	0	W		Inap.	Inap.	Fair	
Mobile, Alabama	30.10	764.5	30.14	765.5	78	25.6	91	S	5	2.2			10s		SW	1.36	34.5	Cloudy	
Montgomery, Alabama	29.94	760.5	30.17	766.3	75	23.9	85	S	2	0.9			10s		S	0.40	10.2	Cloudy	
Morgantown, West Virginia	29.04	737.6	29.97	761.2	75	23.9	77	SW	6	2.7			10ks		W	0.52	13.2	Cloudy	
Mt Washington, N. H.	23.79	604.3	30.15	765.8	51	10.6	100	NW	34	15.2			Fog		NW	1.20	30.5	Dense fog	
Nashville, Tennessee	29.52	749.8	30.04	763.0	75	23.9	81	S	5	2.2			10ks		S	0.46	11.7	Cloudy	
New Haven, Connecticut	29.78	756.4	29.89	759.2	79	26.1	70	W	3	1.3		5ck	2s	W	W	0	0	Fair	
New London, Connecticut	29.81	757.2	29.86	758.4	75	23.9	77	Calm	0	0		4ck	Haze	W	Calm	0	0	Fair	
New Orleans, Louisiana	30.04	763.0	30.10	764.5	77	25.0	90	SE	4	1.8			10s		SE	1.84	46.7	Cloudy	
Newport, Rhode Island	29.80	756.9	29.85	758.2	75	23.9	81	SW	4	1.8			10s		Calm	0	0	Cloudy	
New River, North Carolina																			
New York, New York	29.77	756.1	29.94	760.5	75	23.9	72	W	8	3.6		5ck	0	W		0	0	Fair	
Norfolk, Virginia	30.01	762.2	30.06	763.5	85	29.4	57	W	11	4.9		5c	Haze	SW		0	0	Fair	
North Platte, Nebraska	27.01	686.0	29.45	748.0	67	19.4	77	SE	12	5.4		5c	0	W		0	0	Fair	
Olympia, Washington Ter.	29.96	761.0	30.00	762.0	57.0	13.9	81	N	1	0.4		0	0			0	0	Clear	
Omaha, Nebraska	28.76	730.5	29.80	756.9	75	23.9	72	SE	4	1.8		2c	5s	Calm	Calm	0	0	Fair	
Oswego, New York	29.61	752.1	29.92	760.0	70	21.1	85	W	9	4.0		1c	0	W		0.68	17.3	Clear	
Pembina, Dakota	28.73	729.7	29.51	749.5	66	18.9	89	S	16	7.2		2k	0	W		0.62	15.7	Clear	
Pensacola, Florida	30.13	765.3	30.16	766.1	78	25.6	86	S	8	3.6		7k	0	S		0.75	19.1	Fair	
Philadelphia, Pennsylvania	29.92	760.0	29.97	761.2	80	26.7	62	W	7	3.1		0	Haze		Calm	Inap.	Inap.	Clear	
Phœnix, Arizona	28.69	728.7	30.37	771.4	87	30.6	34	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.96	456.2	30.17	766.3	33	0.6	51	N	12	5.4		1cs	0	Calm		0.10	2.5	Clear	
Pilot Point, Texas	29.14	740.1	29.95	760.7	77	25.0	77	S	12	5.4			10s		Calm	0	0	Cloudy	
Pioche, Nevada	24.06	611.1	29.83	757.7	57	13.9	31	S	14	6.3		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.19	741.4	29.96	761.0	73	22.8	85	W	7	3.1		5cs	2s	SW	W	0.32	8.1	Clearing	
Port Huron, Michigan	29.27	743.4	29.90	759.4	70	21.1	80	SW	4	1.8		5c	0	SW		0.12	3.0	Fair	
Portland, Maine	29.75	755.6	29.80	756.9	65	18.3	84	S	2	0.9		2cs	0	W		0.01	0.3	Clear	
Portland, Oregon	29.96	761.0	30.03	762.7	55	12.8	87	Calm	0	0		0	0			0	0	Clear	
Portsmouth, North Carolina					80	26.7	78	SW	17	7.6		5cs	0	Calm		0	0	Fair	
Prescott, Arizona	24.77	629.2	30.13	765.3	47	8.3	77	S	3	1.3		0	0			0	0	Clear	
Punta Rassa, Florida	30.15	765.8	30.17	766.3	83	28.3	75	E	9	4.0		1c	0	Calm		0.01	0.3	Clear	
Red Bluff, California																			
Rio Grande City, Texas	29.71	754.6	29.91	759.7	79	26.1	87	SE	9	4.0		0	8s		SE	0	0	Fair	
Rochester, New York	29.32	744.7	29.91	759.7	72	22.2	80	NW	8	3.6		5k	0	W		0.05	1.3	Fair	
Roseburg, Oregon	29.49	749.0	30.06	763.5	48	8.9	89	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.87	758.7	29.94	760.5	56	13.3	81	S	6	2.7			10s		S	0	0	Cloudy	
St. Louis, Missouri	29.37	746.0	29.92	760.0	74	23.3	90	S	6	2.7		1ck	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.02	737.1	29.81	757.2	65	18.3	78	Calm	0	0		0	0			0	0	Clear	
Salt Lake City, Utah	25.58	649.7	29.91	759.7	63	17.2	23	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.27	743.4	29.93	760 2	81	27.2	74	E	1	0.4		2c	2s	Calm	S	0	0	Fair	
San Diego, California	29.39	746.2	29.96	761.0	62	16.7	77	N	3	1.3			10s		N	0	0	Cloudy	
Sandusky, Ohio	29.29	744.0	29.93	760.2	72	22.2	80	SW	8	3.6			10ks		SW	0.02	0.5	Cloudy	
Sandy Hook, New Jersey	29.90	759.4	29.93	760.2	80	26.7	70	SW	14	6.3		5ck	0	Calm		0	0	Fair	
San Francisco, California	29.97	761.2	30.03	762.7	51	10.6	93	NW	7	3.1			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.29	591.6	29.83	757.7	63	17.2	42	NE	2	0.9		0	Haze		Calm	0	0	Clear	
Savannah, Georgia	30.10	764.5	30.19	766.8	86	30.0	72	SW	5	2.2		1c	Haze	Calm	Calm	Inap	Inap.	Clear	
Shreveport, Louisiana	29.79	756.7	30.00	762.0	76	24.4	91	S	4	1.8		0	5s		Calm	0.02	0.5	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.16	766.1	30.19	766.8	82	27.8	79	SW	10	4.5		1k	0	SW		0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.28	743.7	29.92	760.0	73	22.8	76	S	5	2.2		5ck;c	0	SW		0	0	Fair	
Springfield, Massachusetts	29.74	755.4	29.86	758.4	70	26.1	70	Calm	0	0		2k	2ks	SW	SW	0	0	Fair	
Stockton, Texas	26.94	684.3	29.94	760.5	72	22.2	67	SE	10	4.5		2cs	4ks	Calm	NW	Inap.	Inap.	Threatening	
Thatcher's Island, Mass	29.78	756.4	29.83	757.7	74	23.3	81	NW	6	2.7		5k	0	NW		0	0	Clear	
Toledo, Ohio	29.29	744.0	29.94	760.5	71	21.7	90	SW	5	2.2			10s		SW	0.12	3.0	Threatening	
Tucson, Arizona	27.43	696.7	29.98	761.5	75	23.9	19	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.59	751.6	30.06	763.5	62	16.7	61	E	1	0.4		5c	0	W		0	0	Fair	
Uvalde, Texas	29.02	737.1	29.80	756.9	80	26.7	78	NE	6	2.7			10ks		E	0	0	Cloudy	
Vicksburg, Mississippi	29.84	757.9	30.09	764.3	78	22.8	95	S	6	2.7			10s		SW	0.11	2.8	Cloudy	
Virginia City, Montana	24.27	616.4	29.75	755.6	52	11.1	47	Calm	0	0		0	0			0	0	Clear	
Visalia, California	29.53	750.0	29.89	759.2	60	15.6	65	W	1	0.4		0	0			0	0	Clear	
Washington, D. C.	29.91	759.7	30.02	762.5	81	27.2	74	SW	3	1.3		2cs	0	SW		0.10	2.5	Fair	
Wickenburg, Arizona					65	18.3	49	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.09	764.3	30.17	766.3	83	28.3	71	SW	11	4.9		1c	0	Calm		0	0	Clear	
Winnemucca, Nevada	26.60	675.2	29.96	761.0	56	13.3	35	SE	6	2.7		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.80	756.9	29.84	757.9	73	22.8	85	W	10	4.5		5k	5s	SW	SW	0	0	Cloudy	
Yankton, Dakota	28.58	725.6	29.80	756.9	76	24.4	60	SW	1	0.4		0	0			0	0	Clear	
Yuma, Arizona	29.60	751.8	29.75	755.6	69	20.6	80	E	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.01	559.0			55.0	12.8	80	Calm	0	0		2k	5ks			0.04	1.0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.10	764.5	30.15	765.8	81	27.2	74	SE	1.2	0.5		8cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.06	763.5	30.07	763.8	78.8	26.0	77	Calm	0	0		2c	0			0	0	Clear	Maxwell Hall.
Navassa, W. I.	29.88	758.9	29.96	761.0	81	27.2	75	E	2	0.9		8	5s	SE	E	0.01	0.3	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.02	762.5	30.02	762.5	80	26.7	87	E			1	3c	5k	Calm		1.140	29.0	Fair	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.40	746.7	29.96	761.0	79	26.1	85	S			2		8s			0	0		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		ENE					8k		ENE	2.68	68.	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.09	764.3	30.11	764.8	82	27.8	70	N	7.2	3.2		8ck	0	SE		0	0		Robert Mason
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	29.90	759.4	29.95	760.7	52.0	11.1	96	NE	10	4.5		6k	4k	NE	NE	0	0	Cloudy	J. Fortsecue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500.(?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,130.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,000 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.16	766.1	79	26.1	91	SE	17	7.6			10d		SE					Threatening	
§Navy Yard, Portsmouth, N. H.	29.83	757.7	72	22.2	71	Calm	0	0			8			0	0			Cloudy	
Naval Hospital, Yokohama, Japan	29.93	760.2	68	20.0	92	NE			1		10s;sm		W	0	0			Lightly cov'd	
§Adams, S. 9° 02′, W. 78° 43′	30.06	763.5	66	18.9	89	SE			3		10		SE					Cloudy	
§Alaska, S. 17° 00′, W. 72° 15′ *	30.05	763.3	63	17.2	83	ESE			2		10					Long	SW	Cloudy	
§Alert, N. 30° 18′, E. 140° 18′	29.75	755.6	76	24.4	82	W			2		2		W			Long	W	Clear	
§Alliance, Virgin Rocks, N. 46° 25′, W. 50° 50′	29.76	755.9	44	6.7	92	NNE			3–4		10		Calm	Light	Light	Smooth		Foggy	
§Ashuelot, N. 33° 18′, E. 129° 22′	29.94	760.5	70	21.1	90	NW			2		5		Calm			None		Fair	
§Colorado, New York, N. Y.	29.89	759.2	76	24.4	73	SW	3	1.3			2		SW					Clear	
§Constellation, Navy Yard, Brooklyn, N. Y.	29.82	757.4	78	25.6	73	W			4		5		NW					Fair	
§Constitution, Navy Yard, Brooklyn, N. Y.	29.90	759.4	76	24.4	77	W	2	0.9			2		Calm					Hazy	
§Franklin, Off Navy Yard, Norfolk, Va	30.02	762.5	79	26.1	86	WSW	12	5.4			2		SW	0	0			Fair	
§Independence, Mare I'd, Navy Yard, Cal.	30.01	762.2	58	14.4	82	W	2.4	1.1			10		W	0	0			Overcast	
§Jamestown, Sitka, Alaska *	30.26	768.6	49	9.4	93	ENE			1		10					Smooth		Cloudy	
§Kearsarge, Boston, Mass	29.86	758.4	76	24.4	82	Calm			0		8					Smooth		Cloudy	
§Lackawanna, N. 7° 40′, W. 79° 20′ †	30.02	762.5	79	26.1	86	SW			3		8		SW			Smooth	SW	Fair	
§Marion, S 43° 01′, W. 57° 20′	29.93	760.2	45	7.2	100	SW			4		10			0	0	Mod'ate	SW	Cloudy	
§Michigan, Erie, Pa.	29.89	759.2	73	22.8	85	W			2		2		W					Clear	
§Minnesota, Newburgh, N. Y. *	29.91	759.7	79	26.1	86	WSW			1		5		Calm					Fair	
§Monocacy, Chefoo, China	29.81	757.2	72	22.2	76	SSW			1		8							Cloudy	
§New Hampshire, Port Royal, S. C.	30.17	766.3	81	27.2	87	S	5	2.2			9		SW	0	0			Cloudy	
Nipsic. Alexandria, Egypt	29.96	761.0	79	26.1	74	NNW			3		2					Smooth		D. clouds	
§Onward, Chimbote, Peru †	29.99	761.7	66	18.9	79	SE			2		10		NNW			Long	W	Cloudy	
§Palos, Shanghai, China	29.82	757.4	78	25.6	91	ESE			2		8							Pleasant	
§Passaic, Washington, D. C.	30.03	762.7	77	25.0	91	SW			1		0			1.8	30.			Clear	
§Pensacola, San Francisco, Cal.	29.97	761.2	52	11.1	93	WSW			3		2		WSW			Smooth		Overcast	
§Portsmouth, N. 37° 18′, W. 38° 50′	30.00	762.0	69	20.6	90	WSW			4		5		WNW			Mod'ate	W	Fair	
§Powhatan, New York, N. Y.	29.92	760.0	77	25.0	73	W			3		5		W					Fair	
§Quinnebaug, Stockholm, Sweden	29.96	761.0	64	17.8	68	NW			1		10		Calm			Smooth		Rainy	
§Richmond, Kobe, Japan	29.90	759.4	70	21.1	100	NW			2		10		Calm	0.1	3.			Cloudy	
§Saratoga, Naples, Italy	29.95	760.7	75	23.9	68	SSW			3		2			0	0			Clear	
§Shenandoah, Buenos Ayres, Argentine Republic	30.01	762.2	51	10.6	86	SSE			5		10					Mod'ate	SE	Cloudy	
§St. Louis, League Island, Pa.	29.99	761.7	77	25.0	91	SW	10	4.5			2			0.02	0.5			Clear	
Swatara, Amoy, China			84	28.9	83	SE			1		2		SE			Smooth		Clear	
§Tennessee, New York, N. Y.	29.92	760.0	79	26.1	70	W			2		5		W					Fair	
§Ticonderoga, Nagasaki, Japan	29.93	760.2	74	23.3	90	S			1		2		Calm			Smooth		Clear	
§Trenton, N. 43° 32′, W. 10° 50′	30.14	765.5	62	16.7	83	N			5		10			6 hours		Long	N	Cloudy	
§Vandalia, Boston, Mass			75	23.9	81	W			1		9		WNW					Cloudy	
§Wabash, Boston, Mass	29.80	756.9	75	23.9	77	WSW	3	1.3			10							Hazy	
§Wachusett, Valparaiso, Chili	30.03	762.7	54	12.2	93	E			2		10		E	Blank	Blank	Smooth	E	Cloudy	
Wyoming, N. 36° 47′, W. 9° 32′	30.22	767.6	64	17.8	78	N			3		2		NE			Smooth	NE	Clear	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 41′, W. 27° 23′	29.64	752.8	57	13.9		S			4		10		S			Short	SSE	Misty	
S. S. Moravian, J. Graham																			
S. S. Peruvian																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air																			A. Christie & F. W. Erskine A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 41° 04′, W. 45° 21′	29.75	755.6	64	17.8	83	WNW			8		9		WNW	Heavy	Heavy	High	W	Cloudy	
S. S. Ohio, Henry Morrison N. 45°56′, W. 29° 15′ †	29.88	758.9	67	19.4	95	SW			3		10		SW	3 h'rs	3 h'rs	Mod'ate	SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 41° 01′, W. 52° 52′	29.90	759.4			62	NW			4		10		NW	1 h'r	1 h'r	Mod'ate	NW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China	29.73	755.1	84	28.9	91	Var.			4		10n		Var.	Heavy	Heavy	Smooth		Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 42° 23′, W. 159° 30′ *	30.06	763.5	57	13.9	75	WSW			3		7		WSW	0.03	0.8	Slight	WSW	D. clouds	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lach'an, N. 40° 08′, W. 124° 24′ †	29.98	761.5	50	10.0	93	NW			4		10k		NW			Light	NW	Cloudy	J. M. Lachlan.
S. S. Oregon, E. Polemann, San Francisco, Cal. †	30.00	762.0	52.5	11.4		SSW			1		10							Hazy	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Pedro, Cal. †	30.00	762.0	60	15.6		ENE			1		0					Smooth		Clear	
S. S. Orizaba, C. B. Johnson																			Harrison & Marshall.
S. S. State of California, G. Debney, Portland, Oregon †	29.98	761.5	60	15.6		Calm			0		0							Clear	
S. S. Victoria, H. M. Haywood, Nanaimo Harbor, Vancouver I'd †	30.08	764.0	63	17.2	67	NW			2		0							Clear	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Panama, Panama.....†	29.88	758.9	77	25.0	95	NNW			2		8		NW			Smooth		Cloudy	F. A. Johnston.
§S. S. Australia, S. 20° 08′ W. 173° 10′....†	30.08	764.0				Calm			0		0					Smooth		Clear	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30.03	762.7	54	12.2	74	SSE			1		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 33° 56′, W. 118° 45′...†	29.94	760.5	60	15.6	82	W			0–1		10		NW	0	0	Rough	NW	Light fog	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 47° 34′, E. 179° 07′....†	30.10	764.5	40	4.4	100	WSW			4		10		W	0	0	Smooth		Cloudy	
§S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S. S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama.....†	29.89	759.2	80	26.7	100	N			2		10		NE	0.30	7.6			Cloudy	
§S. S. Dakota, H. G. Morse, Olympia, Washington T'y.†	30.01	762.2	57	13.9	87	Var.			1		0			0	0	None		Clear	
§S. S. Granada, J. M. Cavarly N. 21° 16′, W. 108° 26′...†	29.89	759.2	74	23.3	90	WNW			3	2c		WNW		0	0	Long	W	Hazy	C. T. Rode.
§S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.00	762.0	58	14.4		W			1		2?		W					Overcast?	E. Alexander.
§S. S. Zealandia, R. C. Ghest, S. 29° 40′, W. 179° 35′.....	29.86	758.4	63	17.2		SSW			6		5		S			High	S	Squally	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			J. Farmer & W. Apetan.
S. S. Nederland, S. Stokes.																			
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			J. Jones.
S. S. Britanic, H. Perry, N. 51° 28′ W. 15° 45′....†	30.17	766.8	60	15.6	88	WSW			2		1		W			Slight	W	Blue sky	
S. S. Celtic, B. Gleadell, N. 40° 43′, W. 67° 39′.....†	29.92	760.0	65	18.3		WSW			4		2		W	0	0	Smooth		Clear	G. W. Ryder.
S. S. Republic, P. J. Irving																			
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.10	764.5	82.5	28.1		S			1		5		SSE	0	0			Fine	A. R. Mehaffey.
Schr. Adele Fuller, J. Jorgensen, Off Chatham Light, Mass	29.85	758.2	68	20.0	74	SW	6	2.7			8k;hz			0	0			Hazy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 21° 50′, W. 35° 03′.....*†	30.21	767.3	77	25.0		ENE			5		8		ENE			Mod'ate	ENE	Fair	B. F. Woodbury.
Schr. Della Hodgkins, N. 56° 08′, W 46° 33′.....†	29.91	759.7				E			6		10		E			Long	E	Foggy	S. S. Minor.
Brigantine George, W. H Champlin, N. 31° 25′, W. 66° 30′.....†	30.42	772.7	78	25.6		W			3		2		Calm	0	0	Smooth		Clear	
Iron Cross, W. Randall, N. 33° 22′, W. 74° 56′.....*	30.23	767.8	80	26.7	81	SW			5		4		NW;W	0	0	Mod'ate	W	D. clouds	W, Randall.
British Barque Ivigtut, Adam Smith, N. 43° 23′, W. 56° 09′....*	24.97	761.2				NNW			3		0					Mod'ate	SW	Clear	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.91	759.7	54	12.2	93	SW			1		1		N	0	0			Very fine	James S. Garvin.

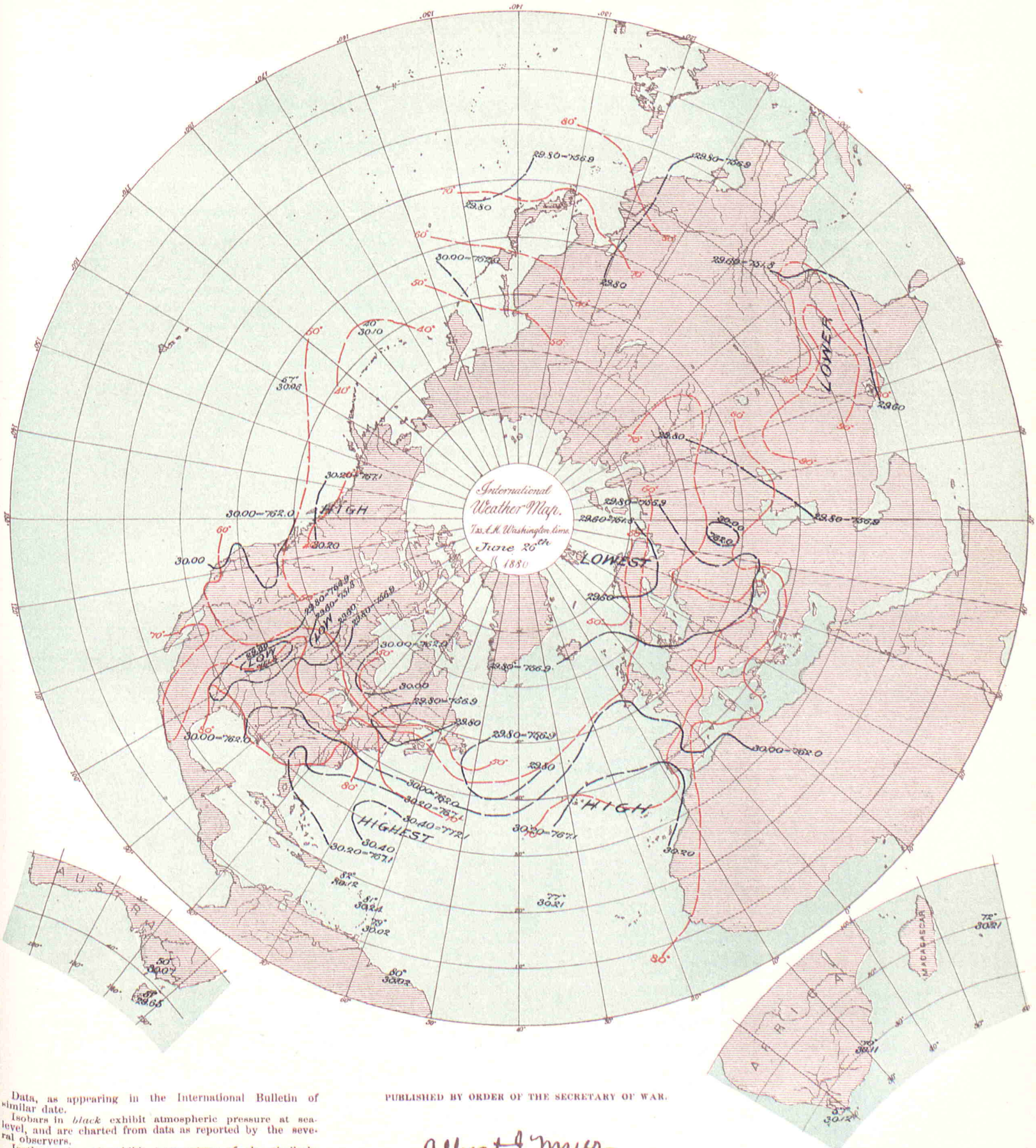
NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f. p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

THE HELIOTYPE PRINTING CO. 211 TREMONT ST. BOSTON.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 27, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.17	766.2	79.2	26.2	15	NW			1		0			0	0	Clear.	Metge.
Algiers			30.23	767.7	79.5	26.4	59	NE			2		0			0	0	Clear	Nicolas.
La Calle			30.16	766.1	76.8	24.9	71	NW			4		4			0	0	Cloudy	Fonfrède.
Tunis			29.98	761.4															Jacques.
Sfax			30.04	763.1															Gau.
Saida			30.15	765.7															Charon.
Tebessa			30.12	765.1	77.2	25.1	16	N			5		0			0	0	Clear.	Watrin.
Geriville			30.13	765.2	92.3	33.5	25	NE			3		0			Inap.	Inap.	Clear.	Lonchamp.
Laghouat			30.15	765.7	92.5	33.6	21	NE			3		0			0	0	Clear.	Herlin.
Biskra			30.08	764.1	98.2	36.8	17	NW			5		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.32	744.8	29.85	758.3	68.2	20.1	61	E			2		9			0.165	4.2	Thunder	Prof. Ivan Stozir
Cracow, I. R. Observatory	29.16	740.6	29.91	759.7	64.9	18.3	56	NNW	7.8	3.5			7			0.004	0.1		Dr. Wierzbicki.
Eperies	28.97	735.7	29.81	757.2	67.6	19.8	51	N			3		10ks		S	0.059	1.50		Julius Mikolik.
Gratz	28.69	728.7	29.90	759.5	67.8	19.9	50	NW			5		3			0.197	5.0		Andreas Rospini.
Hermannstadt	28.38	720.8	29.74	755.3	73.8	23.2	44	WNW			8		8			0.398	10.10		Prof. A. Gottschling.
Kremsmünster, Observatory	28.69	728.7	30.00	762.0	63.7	17.6	69	WNW			3		5			0	0		The Staff.
Lemberg	28.82	731.9	29.76	756.0	68.2	20.1	49	NE			2		4			0	0		Dr. T. Stanecki.
Pola	29.76	755.9	29.87	758.6	72.0	22.2	52	NE			3		7			0	0		I.R. Hydrographic Office.
Szathmar	29.38	746.3	29.83	757.7	68.5	20.3	74	E			3		6			0.693	17.6		Pet. Pancsics, S. J.
Szegedin	29.54	750.2	29.81	757.1	66.2	19.0	81	NW			2		10			0.394	10.00		Karl Stancel.
Trieste	29.81	757.2	29.91	759.8	75.0	23.9	67	NW			1		8			0	0		P. Busin.
Vienna	29.24	742.8	29.97	761.2	67.6	19.8	56	N			3		4			0.051	1.3		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 367 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	30.02	762.4	30.21	767.4	69.1	20.6	53	W			1		5		WNW	0	0		Royal Observatory.
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed December 30, 1880.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.84	757.9	29.93	760.2	64.0	17.8		SSW	19	8.5			9			0.110	2.79	Overcast	W. Boswell.
Ardrossan																			G. Carrick.
Armagh, (Observatory)	29.76	755.9	29.98	761.5	58.9	14.9		SSW	17	7.6									S. Call.
Bidston (Liverpool Obs)			30.12	765.0	63.9	17.7		SW	24	10.7			10					Overcast	John Hartnup.
Bolton (Sharples)	29.58	751.3	30.08	764.0	64.8	18.2		SW	25	11.2			9					Squally	Thomas Mackereth.
Bradford, Yorkshire																0.02	0.5		J McLandsborough.
Bridgetown, Barbadoes	29.99	761.7	30.02	762.5	81	27.2		NE			2		9					Raining	Pvt. G. Surgener, A.H.C
Cambridge (Observatory)	30.08	764.0	30.17	766.3	72.0	22.2		WNW			1		1					D. clouds	H. Todd.
Cardington			30.17	766.3	73.6	23.1		W			0.4		8					Overcast	John McLaren.
Chatham (School M. E.)	30.08	764.0	30.21	767.3	69.9	21.1		Calm			0		7k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.96	761.0	30.00	762.0	59	15.0		WSW			4		10					Drizzling	J. Mac Gowan.
Dover	30.18	766.6	30.22	767.6	65	18.3		WSW			3		4					Misty	J. Costello.
Falmouth (Observatory)	30.08	764.0	30.31	769.9	65.6	18.7		WSW			3		9					Overcast	The Staff.
Fort Napier, Natal	27.84	707.1	30.05	763.3	67.2	19.6		E			1		0					Blue sky	Corp'l H. Coombs, A.H.C
Free Town, Sierra Leone	29.70	754.4	29.92	760.6	87	30.6		S			1		10					D. clouds	
Galway (Queen's College)			29.98	761.5	60	15.6		SW			6		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.09	764.3	30.14	765.5	69.8	21.0		NE			6		6					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.75	755.6	29.95	760.7	59.3	15.2		SW			4		10			Blank	Blank	Overcast	D. G. Maclean.
Great Yarmouth	30.16	766.1	30.16	766.1	68	20.0		W			2		4					D. clouds	G. T. Watson.
Greenwich (Royal Obs'y)	30.04	763.0	30.21	767.3	72.0	22.2		WSW			1		9					D. clouds	The Staff, for G. B. Airy.
Guernsey	30.09	764.3	30.30	769.6	60	15.6		WSW			2		7					Misty	Dr. S. E. Hoskins, F.R.S.
Helston	30.48	774.2	30.60	777.2	66	18.9		SW			4	c				0	0	Fine	M. P. Moyle.
Holyhead	30.11	764.8	30.13	765.3	61	16.1		SW			4		10					Misty	John Tilston.
Jersey	30.08	764.0	30.37	771.4	56.3	13.5		W			2		10					Overcast	J. Fisher.
Kew (Observatory)	30.18	766.6	30.21	767.3	69.5	20.8		WSW	12	5.4			8					Threatening	The Met'g'l Office.
Leicester (Museum)	29.90	759.4	30.15	765.8	69.4	20.8		W			1		9					Overcast	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.76	755.9	29.84	757.9	79.6	26.4		W			2		0					Blue sky	A. King.
Nairn	29.77	756.1	29.86	758.4	60	15.6		Calm			0		10					Raining	W. D. Penny.
Nassau, Bahamas			30.20	767.1	86.0	30.0		E			2		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.98	761.5	30.16	766.1	74.1	23.1		WNW			4	ck	10k		NW	0	0	Overcast	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.64	752.8	30.16	766.1	66.2	19.0		SW			3-4		10					Overcast	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.98	761.5	30.24	768.1	69	20.6		W			3		5					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	30.20	767.1	30.28	769.1	67.0	19.4		SW			3		10					Overcast	John Merrifield.
*Roche's Point	30.09	764.3	30.22	767.6	65	18.3		SW			5		10					Raining	Wm. Kennedy.
St. Ann's Head	30.05	763.3	30.22	767.6	58	14.4		SW			4		7					Misty	John C. Walker.
Sandwick Manse, Orkneys			29.87	758.7	61.4	16.3		S	21	9.4			10					Overcast	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.71	754.6	29.77	756.1	84.4	29.1		SW			1		7			Blank	Blank	D. clouds	Serg't W. H. Lyne.
Sheffield	29.87	758.7	30.15	765.8	69.0	20.6		SW			4		7			0.02	0.5	Overcast	W. F. Cooper.
Silloth Rectory	30.02	762.5	30.05	763.3	60.7	15.9	79	W			4		10			0.150	3.81	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.13	765.3	64.2	17.9		WSW	23	10.3			7					D. clouds	Rev. S. J. Perry.
Stratfield Turgiss	30.01	762.2	30.22	767.6	70.2	21.2		W			3		8					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.31	769.9	30.32	770.1	70	21.1		SW			4		6					D. clouds	W. Newcombe.
Valencia (Observatory)	30.09	764.3	30.11	764.8	63.1	17.3		SSW	34	15.2			10					Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																0.210	5.33	Raining	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.14	765.5	30.18	766.6	59.0	15.0	89	NNW	7.8	3.5		10	10			0.02	0.5		Francis Abbott, F.R.A.S.
Hobart Town, Tasmania			30.02	762.5	44.0	6.7	74	S			3		10k			0.01	0.3	Overcast	Andrew Gibb.
Leith (Restalrig Park) Sc'tl'd			29.98	761.5	63.3	17.4		W			2		10k					Squally	C. Meldrum.
Mauritius (Observatory)	29.99	761.7	30.18	766.6	71.9	22.2	61	E	17.5	7.8		0	4		SE	0	0	Fine	R. L. J. Ellery.
Melbourne (Observatory)	30.15	765.8	30.24	768.1	49.0	9.4	86	SW	13	5.8			6			0.08	2.0		J. Youngclause.
Monach Lt-house, Hebrides			29.74	755.4	58	14.4		S			3		10			0.4	10.		Robert Burnet.
North Unst, Shetland I's			29.78	756.4				SW			4	2	7	SW		0	0		

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert																			Capt. J. P. Maclear, R.N.
City of Agra																			Capt. Thos. Young.
City of Cashmere																			Capt. W. M. Grieve.
Barque Tommewyne																			Capt. Jas. Buchan.
Ship British Commodore																			Capt. J. W. Thorne.
Barque Decapolis																			Capt. T. M. Almond.
Barque Dochra																			Capt. H. Spalding.
S. S. Ethiopia, N. 55° 05′, W. 9° 00′			29.77	756.1	59	15.0		SSE			6		10			5	S	Raining	Capt. A. Campbell.
Barque Fedalma																			Capt. H. L. Fox.
Brig. Fylde																			Capt. L. C. Dart.
S. S. German																			Capt. C. D. Coxwell.
S. S. Gordon Castle																			Capt. Wm. Waring.
Barque Hope																			Capt. Jas. Campbell.
Iron Cross, N. 34° 35′, W. 72° 30′			30.17	766.3	80	26.7		WSW			5		7			4	WSW	Misty	Capt. W. Randall.
Ship Lochee, S. 35° 20′, E. 19° 45′			30.04	763.0	60.1	15.6		NW			9		8					Squally	Capt. J. Raeburn, R.N.R.
Barque Queen of Cambria																			Capt. M. Parry.
S. S. Richmond																			Capt. W. H. Stuart.
Barque Royal Alexandra																			Capt. W. P. Hughes.
S. S. Strathleven																			Capt. C. W. Pearson.
S. S. Sunbeam																			Capt. C. M. Dobson.
S. S. Wyberton, N. 38° 57′, W. 9° 28′			30.17	766.3	65.0	18.3		NNE			4		0					Blue sky	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer: Corrected for instrum'tal error and temperature. Inches.	Barometer: Corrected for instrum'tal error and temperature. Millimeters.	Barometer: Reduced to sea-level. Inches.	Barometer: Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.26	667.0	29.98	761.5	65.3	18.5	93	SE			1	10n				0	6	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,146 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.96	761.0	30.01	762.2	66.9	19.4	56	NW			2		8						
Faröe	30.07	763.6	30.08	764.1	61.0	16.1	71	WNW			4		2						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.59	751.6	29.63	752.7	52.5	11.4	73	NW			4		0						
Thorshavn (Faröe)	29.63	752.5	29.66	753.4	56.8	13.2	88	SE			2		10					Raining	
Vestervig	29.94	760.5	30.04	762.9	59.0	15.0	69	W			4		1						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.79	756.7	30.34	770.7	69.8	21	49	NW			1		8kn		W	0.047	1.2	Very cloudy	Collignon, Director.
Amiens, Normal School	30.21	767.2	30.32	770.0	77.4	25.2	97	NNW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	30.04	763.0	30.30	769.5	57.9	14.4	78	NW			1	4ck		E		0.236	6.00		Klein, Commandant.
Avignon, Normal School	30.03	762.7	30.11	764.7	73.9	23.3	56	N			4		2		N	0	0	Partly cld'y	Giraud, Director.
Bar-sur-Seine	29.71	754.5	30.24	768.2	71.4	21.9	55	NNW			2		8kn		N	0.354	9.0	Very cloudy	C. Saillard, Director.
Beauvais, Normal School	30.00	762.1	30.26	768.7	72.5	22.5	52	W			2		8		NNW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.32	744.8	30.20	767.0	67.8	19.9	67	N			1		5		N	0.059	1.5	Cloudy	A. Carré, Director.
Bordeaux	30.11	764.9	30.31	769.9	73.9	23.3	48	NE			1		8	NNE	W	0.354	9.0	Very cloudy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.35	745.5	30.28	769.1	69.8	21	62	N			2		5kn	N	N	0.220	5.6	Cloudy	Marlot, Director.
Bourges, Normal School	29.78	756.5	30.32	770.2	71.1	21.7	100	N			3	ck		N		0	0		M. Gence, Director.
Brest, Naval Observatory	30.13	765.2	30.37	771.4	73.0	22.8	72	W			2		6		W	0	0		Ch. de Rermaree, Dir.
Caen, Normal School	30.20	767.1	30.28	769.0	71.8	22.1	72	NW			2		5		W	0	0	Cloudy	M. Bietrix, Director.
Carcassonne, N. School	29.83	757.7	30.24	768.0	71.6	22	61	W			2		2		NW	0.177	4.5	Slightly cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.93	760.1	30.23	767.9	74.8	23.8	47	WSW			1		1		WSW	0.146	3.7	Clear	Jadot, Director
Chartres, Normal School	29.74	755.3	30.29	769.8	71.1	21.7	80	NW			1		9		SE	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.91	734.3	30.23	767.9	71.2	21.8	49	NW			2		5			0.063	1.6		Alluard, Director.
Commercy, Normal School	29.38	746.2	30.22	767.5	69.4	20.8	53	NW			3		kn	NW	NW	0.12	3.		Dr. Coullet, Director.
Commune de Gréasque*	28.93	734.8	30.07	763.8	73.5	23.2	34	NW			4		2		NW	0.386	9.8	Stormy	L. Kina, Director.
Grenoble, Normal School	29.38	746.3	30.12	765.1	65.8	18.8	76	WNW			2		kn		SW	0.12	3.		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	30.13	765.4	30.34	770.7	73.0	22.8	68	NNE			1		2		S	0.354	9.0	Slightly cld'y	Mouillot, Director.
Le Mans, Normal School	30.01	762.3	30.32	770.1	70.3	21.3	65	N			2		5	N	N	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.26	743.1	30.16	766.0	67.1	19.5	72	N			2		5	N	N			Raining	M. Cadoret, Director
Lorient, Naval Observatory	30.28	769.1	30.38	771.7	75.2	24.0	71	W			1		2		NE	Inap.	Inap.	¾ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.60	751.8	30.21	767.2	69.8	21.0	54	N			1		k		N	0.697	17.7	Clear	Ch. André, Director.
Mâcon, Normal School																			Galvin, Director.
Marseilles, Observatory	29.73	755.2	30.00	761.9	75.4	24.1	45	NW			3–4		1		NW	0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	29.20	741.7	30.23	767.7	68.4	20.2	60	NW			1		k		NW	0	0		Barbier, Director.
Mont-Louis	25.12	637.9	30.35	770.9	53.6	12.0	56	N	10.1	4.5			6		N	0.118	3.0		M. Cave, for Dr. Fines.
Nice	29.93	760.2	29.96	761.0	72.7	22.6	71	S			2		10	S	S	0.283	9.7	Lightly cov'd	Capt. Boissière, Director.
Nismes, Normal School	29.90	759.4	30.10	764.5	76.1	24.5	38	N			4		2		N	0.418	10.5	Slightly cld'y	M. Boyer, Director.
Perpignan	30.12	765.0	30.22	767.6	72.9	22.7	46	NW	28.0	12.5			2		NW	0	0		Dr. Fines.
Pic du Midi (Plantade) H. P.	22.80	579.1			37.4	3.0							5		NE	0.087	2.2	Cloudy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	29.18	739.8	30.19	766.7	62.4	16.9	72	N			3		5	N	N	0	0	Cloudy	M. Tallieu
Puy de Dome (Summit) Obs	25.42	645.7			46.9	8.3	91	NNW			4		8k		NNW	0.236	6.0	Misty	Alluard, Director.
Rochefort, Naval Obs'y	30.35	770.9	30.38	771.7	75.7	24.3	61	W			1		0			0	0	Clear	Lt. E. Devante, Director
Rouen, Normal School	30.24	768.2	30.33	770.4	71.1	21.7	67	N			1		2		NW	0.012	0.3	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.32	770.1	30.35	770.9	61.5	16.4	85	NNW			2		5	NNW	NNW	0	0	Misty	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.11	764.8	30.28	769.0	71.2	21.8	46	NW			1		3		NW	0.071	1.8		E. Renou, Director.
Tarbes, Normal School	29.26	742.9	30.32	770.2	60.8	16	50	NW			1								T. Huguet, Director.
Toulouse, Observatory	29.65	753.2	30.39	771.8	66.7	19.3	61	NW			3		8			0	0	Very cloudy	B. Baillard, Dir.
Tours	30.11	764.8	30.31	769.8	72.3	22.4	54	NNW			1		8		N	0.008	0.2	¾ covered	M. de Tastes.
Versailles, Observatory	29.80	756.8	30.29	769.3	73.8	23.2	43	N			2		0			0	0	Clear	Dr. A. Berigny, Directo
Villefranche-sur-Saone, N. S	29.52	749.7	30.22	767.5	65.5	18.6	80	NNW			1		2		NW	0.417	10.6	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.16	766.0	30.19	766.7	80.6	27										0.47	12.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	30.00	761.9			70.9	21.6	52	NNW			2		4		NNW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.66	753.5	29.69	754.2	79.3	26.3	86	SE	6.7	3.0			4			0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.), Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,656.40 m., or 5,434.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,457 m., or 4,812 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bamberg	29.24	742.7	30.11	764.7	69.8	21.0	49	E			6		0			0	0		Prof. Dr. Hoh.
Berlin	29.89	759.3	30.06	763.5	68.0	20.0	54	NW			1		7			0	0		Prof. Dr. Arndt.
Breslau	29.50	749.2	30.03	762.7	64.0	17.8	57	NW			3		7			Inap.	Inap.		Royal University Obs'y
Carlsruhe	29.73	755.2	30.15	765.8	70.9	21.6	59	NNW			0		1	NW		0	0		Albert Senz.
Cassel	29.54	750.3	30.15	765.7	68.2	20.1	53	N			4		5	W		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.82	757.5	30.19	766.8	74.3	23.5	45	NE			2		4			0	0		Physical Society.
Friedrichshafen	28.74	729.9	30.15	765.9	63.0	17.2	81	SE			3		8	W		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.07	763.6	30.14	765.5	63.9	17.7	62	NW			4		2			0	0		Dr. Reinhold Kleeman.
Kiel	30.07	763.7	30.08	764.1	65.5	18.6	53	W			5		1			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.82	757.3	29.90	759.4	61.9	16.6	66	NW			3		5	NW		0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.72	754.8	30.13	765.3	64.8	18.2	44	NW			2		6	NW		0	0		Prof. Dr. Bruhns, Privy Counselo
Magdeburg	29.89	759.3	30.12	765.1	69.6	20.9	44	NW			5		3k	NNW		0	0		Dr. Assmann.
Memel	29.81	757.2	29.86	758.4	58.3	14.6	76	N			4		7k						Reinbrecht & Issermann
Munich	28.28	718.4	30.15	765.9	62.2	16.8	58	NW			4		7	NW		0.142	3.6		Dr. C. Lang.
Neufahrwasser	29.95	760.8	29.97	761.2	60.1	15.6	73	NNW			5		7			0	0		A. Lothes.
Neustadt (Palatinate)	29.63	752.7	30.17	766.2	72.9	22.7	44	N			2		3	N		0	0		Realiehrer Dicknether.
Posen	29.71	754.5	29.98	761.6	67.6	19.8	51	NW			8		9			0	0		Prof. Dr. Magener.
Strassburg (in Alsace)	29.66	753.3	30.19	766.9	72.1	22.3	45	NNE			2		5	NNE		0.021	0.54		Imp. University Observatory.
Stuttgart	29.19	741.4	30.06	763.5	68.9	20.5	45	NW					3	N		0	0		Prof. Dr. Schoder.
Thorn	29.73	755.2	29.92	759.9	66.7	19.3	43	NW			3		6			0.035	0.9		Dr. Cunerth.
Weissenburg (Bavaria)	28.63	727.3	30.22	767.5	68.5	20.3	46	WNW	3.4	1.5			4k		NW	0	0		Reallehrer J. Hopfner.
Wustrow	30.05	763.2	30.08	763.9	63.3	17.4	66	W			4		3s			0	0		E. Schütz, Director.
German Naval Series.																			

Note.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.43	747.6	29.80	757.0	88.6	32.4		SW			2.5		0					Clear.	Dr. J. F. J. Schmidt.

Note.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published, occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.41	747.0	29.46	748.3	87.0	30.6	76	S	34.5	15.4			2	E		0	0	Misty	
Deesa	29.00	736.7	29.46	748.3	93.1	33.9	44	SE	10.0	4.5			10	ESE		0	0	Overcast	
Bombay	29.62	752.2	29.65	753.2	77.2	25.1	91	WSW	23.0	10.3			10		W	4.26	108.2	Overcast	
Poona (Yarrowda)	27.82	706.7	29.69	754.2	70.8	21.6	89	WSW	16.0	7.2			10	WSW	WSW	0.28	7.1	Drizzling	
Belgaum	27.22	691.4	29.78	756.5	69.3	20.7	94	WSW	10.0	4.5			9	SW	SW	0.69	17.5	Showery	
Lahore	28.76	730.8	29.49	749.1	83.0	28.3	79	NE	4.1	1.8			7		E	1.22	31.0	Rain & fog	
Roorkee	28.62	727.1	29.52	749.7	79.2	26.2	92	SW	3.0	1.3			9			0	0		
Agra	28.94	735.0	29.49	749.0	85.7	29.8	72	E	4.2	1.9						0	0		
Nagpur	28.50	723.8	29.53	750.1	78.6	25.8	92	Calm	3.6	1.6			10		W	0.19	4.8	Overcast	
Jubbulpore	28.15	714.9	29.50	749.2	80.8	27.1	79	W	4.2	1.9			8			0.26	6.6	Overcast	
Lucknow	29.09	739.0	29.45	748.1	95.0	35.0	46	ENE	4.6	2.1						0	0	Blue sky	
Allahabad	29.15	740.4	29.45	747.9	96.7	35.9	48	E	4.5	2.0			0			0	0	Blue sky	
Patna	29.33	745.0	29.51	749.5	90.1	32.3	62	ENE	2.8	1.2			6	ENE	ENE	0	0	D. clouds	
Hazaribagh	27.52	698.9	29.51	749.4	78.8	26.0	81	ENE	10.7	4.8			5		E	0.19	4.8	Drizzling	
Cuttack	29.36	745.7	29.44	747.7	78.3	25.7	89	WSW	0.7	0.3			10			1.15	29.2	Raining	
Calcutta (Alipore)	29.47	748.5	29.49	749.1	81.2	27.3	92	E	7.0	3.1			10		SE	1.94	49.3	Showery	
Goalpara	29.20	741.5	29.60	751.8	82.9	28.3	77	SSW	2.7	1.2			9			0.02	0.5	Gloomy	
Chittagong	29.53	750.0	29.62	752.3	80.3	26.8	83	SE	5.4	2.4			10			0	0	Overcast	
Sibsagar	29.26	743.1	29.58	751.4	85.8	29.9	77	ENE	2.9	1.3			0			2.07	52.6	Blue sky	

Note.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.47	748.5	29.87	758.6	73.0	22.8	53	SW	0.7	0.3			4			0.035	0.9		Prof. Giovanni Clodig.
Milan	29.42	747.2	29.92	760.0	72.0	22.2	62	WNW	8.1	3.6			6	NW		0.520	13.2		Prof. Schiaparelli.
Padua	29.82	757.4	29.93	760.2	73.0	22.8	55	E	2.5	1.1			3	NE		0.102	2.6		Prof. Dott. Lorenzoni.
Moncalieri	29.07	738.4	29.95	760.7	72.3	22.4	54	ESE	2.5	1.1			8	N		0	0		Prof. P. F. Denza.
Genoa	29.74	755.3	29.93	760.1	75.9	24.4	44	NW	6.9	3.1			4	N		0.122	3.1		Prof. G. M. Garibaldi.
Mondovi	28.11	714.0	29.96	760.9	70.9	21.6	38	W			2		2	N		0.217	5.5		Prof. D. C. Bruno.
Pesaro	29.85	758.3	29.90	759.5	66.7	19.3	68	N	9.8	4.4			9	N		0.193	4.9		Prof. Luigi Guidi.
Florence	29.65	753.1	29.90	759.5	67.1	19.5	59	N			2		10	NE		0.083	2.1		Cav. F. Menoci.
Leghorn	29.86	758.4	29.94	760.5	69.6	20.9	71	WNW	5.6	2.5			6			0.264	6.7		Prof. P. Monte.
Rome	29.66	753.4	29.84	757.8	73.9	23.3	53	NW					8			0.134	3.4		Prof. P. Tacchini.
Lecce	29.51	749.5	29.76	755.8	83.7	28.7	31	W	6.3	2.8			3	SW		0	0		Prof. C. De Giorgi.
Cosenza	28.95	735.4	29.81	757.1	82.4	28.0	66	NW	3.8	1.7			4			0.126	3.2		Prof. D. Conti.
Cagliari	29.78	756.3	29.97	761.2	75.9	24.4	34	NW			6		3			0	0		Prof. A. Pacinotti.
Palermo	29.69	754.2	29.94	760.5	75.0	23.9	52	NNW	11.9	5.3			6	WNW		0	0		Prof. G. Ciacciatore.
Syracuse	29.74	755.5	29.79	756.6	75.9	24.4	42	WNW	3.8	1.7			3			0	0		Prof. V. G. Guiliani.
SUB-SERIES.																			
Naples, S. R.	29.29	743.9	29.79	756.7	73.4	23.0	64	NE	9.4	4.2			6			0	0		Prof. F. Brioschi.

NOTE.—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					71.5	21.9	83	Calm	0	0			10s			0.136	3.45	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.70	754.4	29.89	759.2	72.0	22.2	84	W	0.6	0.3			10s			0	0	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.83	757.7	29.89	759.2	69.0	20.6	82	S	8.2	3.7			8s			0	0	Covered	The Staff.
Wakayama	29.84	757.9	29.89	759.2	69.9	21.1	78	SSW	10.	4.5		ck	3s			0.085	2.16	Fair	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.06	636.4	30.05	763.3	59.0	15.0	70	NE			1	6cs	0	SE		0	0	Fair	Prof. L. Peres.
Guanaxuato	23.71	602.3			60.4	15.8	50	Calm	0	0		2c	1k	SW	SW	0	0	Clear	Vicente Fernandez.
Leon	24.43	620.6	30.04	762.9	65.5	18.6	82	E			2	1cs	1k	NE		0	0	Clear	Prof. M. Leal.
Mazatlan																			F. Quijano, C. E.
Mexico, Central Observatory	23.12	587.2	30.08	763.9	57.2	14.0	86	Calm	0	0			10kn		E	0.20	5.0	Covered	The Staff.
Morelia																			M. Feña, M. D.
Pabellon (Aguascalientes)	23.94	608.0	29.83	757.6	65.7	18.7	78	SE			1	1c	5k		NE	0	0	Almost cld'y	M. V. de Leon, M. E.
Puebla (Catholic Institute)	23.47	596.2	30.20	767.1	56.3	13.5	58	Calm	0	0		2cs	0	E		0.004	0.1	Clear	Prof. P. Spina.
San Luis Potosi	24.19	614.4	30.01	762.2	68.5	20.3	57	SE			1	1	3	W	E	0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.94	760.5	29.95	760.8	75.6	24.2	91	E			1	9	1	SW	S	0.028	0.7	Overcast	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas																			J. C. Castrillon.

NOTE.—The elevation of Colima is 507.8 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.24	768.0	30.24	768.0	66.7	19.3		WSW			3					0.012	0.3		
Groningen	30.09	764.3	30.15	765.7	70.9	21.6		W			3					0	0		
Helder	30.16	766.1	30.16	766.1	62.6	17.0		WSW			4					0.020	0.5		
Hellevoetsluis	30.20	767.1	30.20	767.1	68.7	20.4	65	W			2					0	0		
Utrecht	30.13	765.3	30.18	766.5	71.8	22.1	66	WSW			2		5			0	0	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.93	760.3	29.99	761.7	55.4	13.0	55	Calm	0	0	.....	.....	3	.....	.....	0	0	.....	
Brönö	29.87	758.7	29.91	759.7	50.0	10.0	62	W	18	8	.....	.....	7	.....	.....	0.201	5.1	.....	
Christiania	29.73	755.1	29.87	758.7	66.6	19.2	51	S	9	4	.....	.....	3	.....	.....	0.063	1.6	.....	
Tromsö	29.58	751.2	29.63	752.6	43.9	6.6	74	SW	25	11	.....	.....	10	.....	.....	0.236	6.0	Raining	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.02	762.6	30.23	767.8	73.0	22.8	89	S	.....	.....	4	.....	6	.....	.....	0	0	.....	Dr. J. A. Sampaio.
Campo Major	29.17	740.9	30.13	765.2	80.6	27.0	25	ESE	14.3	6.4	.....	.....	0	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.12	765.1	30.21	767.3	69.6	20.9	63	SW	3.1	1.4	.....	.....	10	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.83	757.7	30.18	766.5	79.9	26.6	99	NE	18.6	8.3	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.19	766.7	30.26	768.5	74.1	23.4	74	SSE	4.9	2.2	.....	.....	5	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva	.....	.....	29.88	759.0	71.2	21.8	.....	NW	.....	.....	1	.....	0	.....	.....	1	NW	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
St. Paul de Loando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Com'd't.
Sá da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Tito da Silva, Q. M.
Sado, J. A. de Brito Capello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
Tejo, J. M. T. Guimarães	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation: no distinction between upper and lower clouds; duration of rain-fall in hours. The Sá da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Archangel	29.65	753.2	29.67	753.7	64.4	18.0	72	Calm	0	0	.....	.....	9ks	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.87	758.8	29.79	756.7	80.1	26.7	37	SSE	7	3	.....	.....	10s	.....	.....	Blank	Blank	.....	Capt. Wisganow.
Barnaul	29.31	744.4	29.80	756.8	59.5	15.2	51	NW	18	8	.....	.....	8	.....	.....	.....	.....	Light clouds	Meteorological Obs.
Dorpat	29.54	750.2	29.77	756.2	64.2	17.9	67	N	9	4	.....	10ck	.....	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.93	734.8	29.86	758.5	64.0	17.8	76	W	4	2	.....	.....	10	.....	.....	.....	.....	Raining	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.61	752.1	29.86	758.5	80.2	26.8	37	SW	4	2	.....	.....	1k	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.74	755.5	29.76	756.0	77.0	25.0	51	W	9	4	.....	.....	3	.....	.....	.....	.....	.....	Lagorio.
Kieff	29.00	736.5	29.60	751.9	66.4	19.1	62	WNW	13	6	.....	c;ck	9ks;n	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.46	748.3	29.91	759.6	81.1	27.3	33	S	7	3	.....	.....	6	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.41	747.0	29.61	752.0	74.8	23.8	49	SSW	22	10	.....	.....	8	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.26	743.1	29.77	756.2	79.7	26.5	43	S	4	2	.....	.....	2ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.68	753.9	29.75	755.7	76.6	24.8	55	NW	18	8	.....	.....	4k;ks	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.97	761.1	30.05	763.3	49.8	9.9	84	N	2	1	.....	.....	10n	.....	.....	.....	.....	.....	
Nukuss	29.51	749.5	29.73	755.2	79.5	26.4	45	NNE	4.9	2.2	.....	.....	0	.....	.....	.....	.....	.....	
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Physical Observatory.
Pekin (China)	29.57	750.7	29.70	754.3	72.0	22.2	86	Calm	0	0	.....	.....	9n	.....	.....	.....	.....	.....	Central Physical Obs.
St. Petersburg	29.72	754.8	29.73	755.2	62.2	16.8	81	N	9	4	.....	.....	9n	.....	.....	.....	.....	Light rain	Teich, A. M.
Tashkend	28.00	711.3	29.44	747.8	92.1	33.4	.....	Calm	0	0	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Tiflis	28.41	721.7	29.76	755.8	78.8	26.0	34	NW	31	14	.....	.....	3cs	.....	.....	.....	.....	.....	
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Astronomical Obs.
Warsaw	29.45	748.0	29.86	758.5	62.8	17.1	75	NNW	7	3	.....	.....	10ks	.....	.....	.....	.....	Raining	Astronomical Obs.
Wilna	29.36	745.7	29.77	756.2	55.2	12.9	90	NW	7	3	.....	.....	10	.....	.....	.....	.....	Raining	Marks.
Yeniseisk	29.45	748.1	29.73	755.2	57.7	14.3	84	W	11	5	.....	.....	10	.....	.....	.....	.....	.....	

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660? m., or 2,165? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Inches.	Millimeters.	Inches.	Millimeters.	Fahrenheit	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	Up'er 0—10.	Lo'er 0—10.	Upper. From—	Lower. From—	Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	30.07	763.8	30.17	766.3	76.5	24.7	54	S	4.6	2.08	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.36	771.2	30.42	772.6	71.6	22.0	61	NW	1.3	0.59	.....	3	2	N	.....	0.055	1.4	Cloudy	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.39	695.8	.....	.....	63.7	17.6	65	NE	9.2	4.10	.....	.....	2	.....	.....	0	0	Light clouds	Domingo Martinez Perez.
Madrid, Royal Observatory	28.05	712.4	30.18	766.6	77.4	25.2	30	NE	11.9	5.34	.....	0	0	.....	.....	0	0	Clear	The Staff.
Murcia, Met. Obs'y	30.04	763.1	30.19	766.8	84.7	29.3	46	ESE	5.0	2.22	.....	0	0	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.38	746.3	30.26	768.5	72.7	22.6	54	NE	4.6	2.2	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.11	764.7	30.17	766.3	81.8	27.7	70	E	12.5	5.6	.....	5ck;cs	0	SE	.....	0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.91	759.8	29.96	761.1	80.3	26.8	83	E	2.2	1.0	.....	.....	5kn	.....	W	0.06	1.5	Covered	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.03	762.6	30.12	765.0	85.6	29.8	27	ESE	23.4	10.5	.....	0	0	.....	.....	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.04	762.9	30.13	765.2	83.5	28.6	77	E	17.5	7.81	.....	6k	5k	E	E	0.315	8.00	D. clouds	Enriquetadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity Miles per hour.	Meters per second.	Force. 0–10.	Clouds. Amount. Up'er 0–10.	Lo'er 0–10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Haparanda	29.79	756.7	29.83	757.7	53.6	12.0		SW			4		0			0	0		
Umea	29.85	758.2	29.90	759.5	61.2	16.2	40	SW			4		2			0	0		
Hernosand	29.87	758.7	29.92	760.0	60.1	15.6	55	NE			2		5			0	0		
Stockholm	29.76	755.8	29.93	760.3	64.8	18.2	33	NNW			2		5			0	0		
Wisby	29.80	759.1	29.95	760.6	58.6	14.8	51	NNE			4		0			0	0		
Sub-Series.																			
Upsala	29.85	758.3	29.94	760.5	64.4	18.0	44	NNW	4.3	1.9			10		W	0.014	0.36		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0–9	Direction from—	Rain-fall.		
Barque Australia																				J. P. Pählson.
H. M. Corvette Baldor																				Capt. A. C. Schonmeyr
Saga, N. 37° 22′, W. 19° 56′			30.32	770.2	70.3	21.3		ESE			1		4						D clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.78	731.1	30.18	766.6	63.3	17.4	59	N			1		6			0.160	3.8	Cloudy	The Observatory.
Zurich	28.57	725.6	30.16	766.1	66.6	19.2	71	W			2		5			0.142	3.6	Raining	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +4.0 mm.; Thermometer, —4.3 Cent. Relative Humidity, +5 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level, the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.83	757.7	82.6	28.1	30	ESE	7	3.0			4		SW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.81	757.9	80.2	26.8		S			6		2			0	0	Slightly cl'dy	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.81	757.9	86.5	30.3	59	W			2		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.																			Hon. J. Ferguson.
Chatham, N. B.	29.78	756.4	29.84	757.9	66.8	19.3	64	NW	7	3.1		0	0						
Charlottetown, P. E. Island	29.76	755.9	29.80	756.9	60.1	15.6	94	NW	5	2.2		1c	5s			0.22	5.6	Clear	G. A. Blair.
Cornwall, Ontario	29.72	754.9	29.90	759.4	73.3	22.9	72	SW			1	0	0			0.145	3.69	Clearing	H. J. Cundall, C. E
Dalhousie, N. B.	29.62	752.3	29.78	756.4	67.0	19.4	64	W			2	0	0			0	0	Clear	James Smith, M. A.
Father Point, Quebec	29.90	759.4	29.93	760.2	51.1	13.9	79	NW	2	0.9		1c	0			0.11	2.8	Clear	H. A. Johnson.
Fredericton, N. B.	29.83	757.7	29.89	759.2	69.6	20.9	69	NW	5	2.2		0	0			0	0	Clear	J. McWilliams.
Fort Garry, Manitoba	28.97	735.8	29.78	756.4	57.8	14.1	80	NW	6	2.7		2cs	2ks	NW		0.600	15.24	Clear	Prof. Harrison.
Granton, Ontario	28.82	732.0	29.86	758.4	73.0	22.8	85	SW			2	2cs	0			0	0	Fair	James Stewart.
Halifax, N. S.	29.72	754.9	29.84	757.9	68.4	20.2	93	NW	7	3.1		0	8ks			0.382	9.70	Cloudy	A. Allison.
Hamilton, Ontario	29.56	750.8	29.93	760.2	72.2	22.3	88	SW			2	3c	0	W		0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.59	751.6	29.91	759.7	72.5	22.5	83	S	5	2.2		0	0			0	0	Clear	S. Woods, M. A.
Little Glace Bay, N. S.	29.69	754.1	29.73	755.1	54.1	12.3	91	SW	4	1.8			Fog			0.45	11.4	Foggy	C. H. Rigby.
Montreal, Quebec	29.73	755.1	29.92	760.0	72.0	22.2	69	SW	2	0.9		0	0			0	0	Clear	C. H. McLeod, C. E.
Moose Factory, Ontario	29.54	750.3	29.57	751.1	70.0	21.1	62	SW			4	6cs	0			0	0	Fair	J. R. Nason.
Norwood, Ontario	29.24	742.7	29.89	759.2	75.5	24.2	78	W	4	1.8		4c	0			0	0	Fair	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.22	742.2	29.88	758.9	73.4	23.0	79	S	16	7.2		2ck	1ks	W		0	0	Fair	Rev. R. Mosley.
Peterboro, Ontario	29.19	741.4	29.90	759.4	80.7	27.1	74	Calm			0	0	0			0	0	Clear	J. F. Jeffers, M. A.
Port Dover, Ontario	29.29	744.0	29.95	760.7	69.1	20.6	95	Calm	0	0			Fog			0	0	Foggy	H. Morgan.
Port Stanley, Ontario	29.33	745.0	29.95	760.7	70.6	21.4	77	E	5	2.2		8ck	Fog	SW		0	0	Foggy	M. Payne.
Quebec, Quebec	29.64	752.8	29.95	760.7	64.0	17.8	78	NW			3	0	3s			0.02	0.5	Clear	Capt. Ashe, R. N.
Rockliffe, Ontario	29.45	748.0	29.90	759.4	62.0	16.7	83	E	4	1.8		0	0			0	0	Clear	W. H. McIntyre.
St. John, N. B.	29.71	754.6	29.87	758.7	70.0	21.1	66	N	6	2.7		0	0			0.090	2.29	Clear	G. Murdock, C. E.
Saugeen, Ontario	29.20	741.7	29.87	758.7	77.1	25.1	76	S	7	3.1		7k	0	S		0	0	Fair	K. Stewart.
Stratford, Ontario	28.69	728.7	29.92	760.0	68.8	20.4	93	SW	5	2.2		4ck	0			0	0	Fair	C. J. MacGregor, M. A.
Sydney, C. B.	29.69	754.1	29.73	755.1	67.2	19.6	79	N	3	1.3		1c	1ks			0.55	14.0	Clear	T. C. Hill, C. E.
Toronto, Ontario	29.58	751.3	29.95	760.7	73.3	22.9	79	S	2	0.9		0	0			0	0	Clear	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A.
Woodstock, Ontario	28.89	733.8	29.90	759.4	77.3	25.2	74	SE	6	2.7		4c	2s	S		0	0	Fair	Professor Wolverton.
Yarmouth, N. S.	29.81	757.2	29.87	758.7	68.6	20.3	76	NW	3	1.3		2ck	0	NW		0	0	Clear	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.68	753.9	29.93	760.2	60	15.6	88	S				10k	10s			0	0	Cloudy	John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.72	754.9	52.9	11.6		SW			2					0.20	5.1		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrumental error and temperature. Inches.	Barometer. Corrected for instrumental error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.92	760.0	30.00	762.0	77	25.0	57	N	4	1.8		0	Haze		Calm	0	0	Clear	
Alpena, Michigan	29.22	742.2	29.84	757.9	66	18.9	79	Calm	0	0		10c	0	Calm		0	0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	29.02	737.1	30.12	765.0	80	26.7	70	S	6	2.7		2cs	0	Calm		0.07	1.8	Clear	
Atlantic City, New Jersey	30.00	762.0	30.02	762.5	78	25.6	82	W	1	1.8		5k	0	W		0	0	Fair	
Augusta, Georgia	30.03	762.7	30.22	767.6	80	26.7	70	S			1	Haze	1s;hz	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	29.99	761.7	30.04	763.0	81	27.2	67	NW	7	3.1		5ck	0	Calm		0	0	Fair	
Barnegat, New Jersey	29.98	761.5	30.00	762.0	77	25.0	77	W	7	3.1		5ck	Haze	W	Calm	0	0	Fair	
Bismarck, Dakota	28.20	716.3	30.06	763.5	53	11.7	78	NW	14	6.3		5c	0	SW		0	0	Fair	
Boerne, Texas	28.52	724.4	29.77	756.1	76	24.4	82	SE	14	6.3		8k	0	S		0	0	Cloudy	
Boise City, Idaho	27.16	689.8	30.12	765.0	50	10.0	50	SE	4	1.8		0	0			0	0	Clear	
Boston, Massachusetts	29.82	757.4	29.97	761.2	77	25.0	42	W	4	1.8		0	0			0.01	0.3	Clear	
Brackettville, Texas	28.76	730.5	29.76	755.9	78	25.6	69	SE	11	4.9		2ck	0	N		0	0	Fair	
Breckenridge, Minnesota	28.82	732.0	29.78	756.4	53	15.0	88	N	6	2.7			10s	N		0.75	19.1	Cloudy	
Brownsville, Texas	29.90	759.4	29.94	760.5	82	27.8	79	SE	11	4.9		10cs	0	Calm		0	0	Cloudy	
Buffalo, New York	29.28	743.7	29.94	760.5	72	22.2	78	SW	5	2.2		2c	0	Calm		0	0	Clear	
Burkes, Arizona					66	18.9	32	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.68	753.9	29.96	761.0	74	23.3	63	S	7	3.1		0	0			0.04	1.0	Clear	
Cairo, Illinois	29.64	752.8	30.01	762.2	76	24.4	82	S	12	5.4			10s		S	0.05	1.3	Threatening	
Campo, California	27.33	694.2	29.90	759.4	40	4.4	82	SW	4	1.8		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.11	764.8	30.12	765.0	81	27.2	78	SW	15	6.7		2cs	0	Calm		0	0	Clear	
Cape Henry, Virginia	30.04	763.0	30.06	763.5	82	27.8	63	SW	14	6.3		5cs	0	SW		0.01	0.3	Fair	
Cape Lookout, N. Carolina	30.14	765.5	30.15	765.8	80	26.7	87	SW	18	8.0		2c	0	Calm		0	0	Clear	
Cape May, New Jersey	29.98	761.5	30.01	762.2	77	25.0	55	SW	9	4.0		2cs	2s	W	Calm	0.25	6.3	Fair	
Castroville, Texas	29.16	740.7	29.83	757.7	79	26.1	74	SE	8	3.6			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.19	766.8	30.21	767.3	85	29.4	76	NE	1	0.4		2c	0	Calm		0	0	Clear	
Charleston, South Carolina	30.13	765.3	30.18	766.6	83	28.3	71	SW	7	3.1		0	0			0	0	Clear	
Charlotte, North Carolina	29.33	745.0	30.11	764.8	79	26.1	74	SW	3	1.3		2cs	Haze	Calm	Calm	0.11	2.8	Fair	
Chattanooga, Tennessee	29.37	746.0	30.14	765.5	74	23.3	85	Calm	0	0		3c;cs	Sm'e	Calm;SW	Calm	0.31	7.9	Fair	
Cheyenne, Wyoming	24.11	612.4	30.05	763.3	52	11.1	79	N	10	4.5			10s		N	0	0	Cloudy	
Chicago, Illinois	29.17	740.9	29.82	757.4	70	21.1	89	SE	4	1.8			10s		Calm	0.31	7.9	Cloudy	
Chincoteague, Virginia	30.02	762.5	30.03	762.7	79	26.1	93	NW	6	2.7		8cs	0	W		0.09	2.3	Cloudy	
Cincinnati, Ohio	29.41	747.0	30.03	762.7	75	23.9	81	SW	6	2.7			10s		SW	0.44	11.2	Cloudy	
Cleveland, Ohio	29.27	743.4	29.96	761.0	73	22.8	85	S	8	3.6		2k	2ks	SW	SW	Inap.	Inap.	Fair	
Coleman City, Texas	28.19	716.0	29.81	757.2	65	18.3	100	SE	8	3.6			10n		Calm	1.12	28.4	Heavy rain	
Columbus, Ohio	29.20	741.7	29.99	761.7	74	23.3	81	S	3	1.3			10ks		SW	0.05	1.3	Cloudy	
Concho, Texas	28.05	712.5	29.65	753.1	72	22.2	71	E	17	7.6		8k	0	S		0	0	Fair	
Corsicana, Texas	29.53	750.0	29.98	761.5	78	25.6	76	S	12	5.4			10ks		Calm	0	0	Threatening	
Davenport, Iowa	29.21	741.9	29.81	757.2	70	21.1	90	S	5	2.2			10s		S	0	0	Cloudy	
Dayton, Washington T'y					50	10.0	71	N			1	0	0			0	0	Clear	
Deadwood, Dakota	25.49	647.4			52	11.1	60	Calm	0	0			10n		Calm	0.55	14.0	Light rain	
Decatur, Texas	28.70	729.0	29.82	757.4	68	20.0	100	SE	20	8.9			10s		S	0.55	14.0	Cloudy	
Delaware Breakwater, Del.	30.00	762.0	30.02	762.5	77	25.0	82	SW	8	3.6		5cs	0	SW		0	0	Fair	
Denison, Texas	29.07	738.4	29.83	757.7	69	20.6	65	S	15	6.7			10s		SW	1.02	25.9	Cloudy	
Denver, Colorado	24.84	630.9	30.06	763.5	59	15.0	59	N	7	3.1		5c	0	W		0	0	Fair	
Des Moines, Iowa	28.96	735.6	29.79	756.7	69	20.6	85	S	4	1.8		8cs	0	SW		0	0	Fair	
Detroit, Michigan	29.27	743.4	29.91	759.7	70	21.1	90	SW	4	1.8		2cs	5s	Calm	SW	0	0	Fair	
Dodge City, Kansas	27.27	692.6	29.45	748.0	66	18.9	69	SE	7	3.1		0	0			0	0	Clear	
Dubuque, Iowa	29.14	740.1	29.79	756.7	74	23.3	76	SE	4	1.8		8k	Haze	NW	Calm	0	0	Fair	
Duluth, Minnesota	29.13	739.9	29.67	753.6	68	20.0	84	N	2	0.9		10k	0	SW		0.03	0.8	Cloudy	
Eagle Pass, Texas	29.09	738.9	29.78	756.4	80	26.7	59	SE	12	5.4		0	0			0	0	Clear	
Eastport, Maine	29.81	757.2	29.88	758.9	68	20.0	73	N	4	1.8		0	0			0.01	0.3	Clear	
Edinburg, Texas					78	25.6	91	SE			1	5c	0	S		0	0	Fair	
El Paso, Texas	26.11	663.2			76	24.4	27	W	8	3.6		0	0			0	0	Clear	
Erie, Pennsylvania	29.26	743.2	29.93	760.2	77	25.0	73	S	6	2.7		0	0			0	0	Clear	
Escanaba, Michigan	29.16	740.4	29.77	756.1	68	20.0	80	Calm	0	0		10cs	0	Calm		0	0	Cloudy	
Florence, Arizona	28.31	719.1	29.91	759.7	67	19.4	42	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.03	635.8	30.48	774.2	46	7.8	54	E	4	1.8		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.05	712.5	29.88	758.9	48	8.9	78	NW	14	6.3		5c	0	W		0	0	Fair	
Fort Custer, Montana	27.02	686.3			56	13.3	74	NW	5	2.2			10s		Calm	0.03	0.8	Cloudy	
Fort Davis, Texas	25.18	639.6	30.14	765.5	71	21.7	58	SW	3	1.3		0	0			0.11	2.8	Clear	
Fort Elliot, Texas	26.83	681.5	28.96	735.6	65	18.3	83	NE	2	0.9		0	0			0.38	9.7	Clear	
Fort Gibson, Indian Ter.	29.31	744.5	29.82	757.4	71	21.7	85	SE	16	7.2			10s		S	0.90	22.9	Cloudy	
Fort Grant, Arizona	26.21	640.3	30.01	762.2	72	22.2	12	W	9	4.0		0	0			0	0	Clear	
Fort Griffin, Texas	28.61	726.7	29.82	757.4	69	20.6	80	S	18	8.0			10s		Calm	1.40	35.6	Cloudy	
Fort Keogh, Montana	27.42	696.5			53	11.7	59	NW	6	2.7		10cs	0	Calm		0	0	Cloudy	
Fort McKavett, Texas	27.73	704.8	29.56	750.8	76	24.4	73	E	13	5.8			10s		E	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.65	727.7	29.71	754.6	67	19.4	95	S	10	4.5		10ck	0	S		1.25	31.7	Cloudy	
Fort Stevenson, Dakota	28.18	715.8			51	10.6	78	NW	24	10.7		5c	0	NW		0	0	Fair	
Fort Verde, Arizona					57	13.9	41	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	82	27.8	70	S	15	6.7		0	5ks		S	0.18	3.3	Fair	
Grand Haven, Michigan	29.23	742.4	29.84	757.9	72	22.2	80	S	9	4.0		10k	0	S		0	0	Cloudy	
Helena, Montana																			
Henrietta, Texas																			
Indianapolis, Indiana	29.18	741.1	29.92	760.0	74	23.3	90	S	7	3.1			10s		SW	0.11	2.8	Cloudy	
Indianola, Texas	29.98	761.5	30.01	762.2	84	28.9	75	S	20	8.9		5k	0	S		Inap.	Inap.	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.19	766.8	30.21	767.3	84	28.9	71	S	10	4.5		0	0			0	0	Clear	
Keokuk, Iowa	29.21	741.9	29.78	756.4	76	24.4	73	SW	9	4.0		8cs	0	SW		0	0	Fair	
Key West, Florida	30.16	766.1	30.20	767.1	83	28.3	71	E	11	4.9		5k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.08	764.0	30.10	764.5	80	26.7	78	W	18	8.0		8c	0	W		0	0	Cloudy	
Knoxville, Tennessee	29.19	741.4	30.16	766.1	75	23.9	72	W	2	0.9		2ck	8ks	Calm	W	0	0	Cloudy	
La Crosse, Wisconsin	29.01	737.6	29.72	754.9	74	23.3	76	S	12	5.4		0	5s		Calm	0	0	Fair	
La Mesilla, New Mexico	26.02	660.9	30.17	766.3	57	13.9	41	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.44	747.8	29.76	755.9	83	28.3	60	SE	9	4.0		0	0			0	0	Clear	
Leavenworth, Kansas	28.97	735.8	29.77	756.1	69	20.6	75	SE	3	1.3			10s		Calm	0	0	Cloudy	
Lewiston, Idaho	29.23	742.4	29.85	758.2	58	14.4	53	Calm	0	0		0	0			0	0	Clear	
Little Rock, Arkansas	29.68	753.9	29.94	761.7	72	22.2	95	Calm	0	0			10s		S	0.06	1.5	Cloudy	
Los Angeles, California	29.56	750.8	29.90	759.4	55	12.8	81	Calm	0	0			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.49	749.0	30.02	762.5	72	22.2	85	S	9	4.0			10s		SW	0.42	10.7	Cloudy	
Lynchburg, Virginia	29.43	747.5	30.08	764.0	81	27.2	55	W	3	1.3		10ck	0	Calm		0.10	2.5	Cloudy	
Madison, Wisconsin	28.85	732.8	29.78	756.4	70	21.1	85	S	5	2.2		2cs	5s	SE	SE	0.05	1.3	Cloudy	
Marquette, Michigan	29.07	738.4	29.72	754.9	73	22.8	63	SW	4	1.8		0	0			0	0	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mason, Texas	28.35	720.1	30.02	762.5	78	25.6	78	S	8	3.6			10ks		SW	0.25	6.3	Cloudy	
Memphis, Tennessee	29.75	755.6	30.08	764.0	72	22.2	100	S	16	7.2			10n		S	0.30	7.6	Heavy rain	
Milwaukee, Wisconsin	29.10	739.1	29.79	756.7	70	21.1	90	S	8	3.6			10s		S	0.04	1.0	Cloudy	
Mobile, Alabama	30.13	765.3	30.17	766.3	82	27.8	83	S	10	4.5		2k	5ks	S	S	0	0	Fair	
Montgomery, Alabama	29.96	761.0	30.19	766.8	76	24.4	86	SW	3	1.3		0	8ks		SW	0.07	1.8	Fair	
Morgantown, West Virginia	29.08	738.6	30.02	762.5	75	23.9	86	SW	6	2.7			10ks		SW	0.48	12.2	Cloudy	
Mt Washington, N. H	23.91	607.3	30.27	768.8	48	8.9	92	NW	22	9.8			Fog		NW	0.40	10.2	Foggy	
Nashville, Tennessee	29.57	751.1	30.08	764.0	80	26.7	74	S	6	2.7		2k	5ks	SW	SW	0.06	1.5	Fair	
New Haven, Connecticut	29.89	759.2	30.00	762.0	83	28.3	53	N	2	0.9		2c	0	Calm		0	0	Clear	
New London, Connecticut	29.94	760.5	29.99	761.7	80	26.7	55	N	4	1.8		0	0			0	0	Clear	
New Orleans, Louisiana	30.07	763.8	30.13	765.3	80	26.7	78	S	8	3.6		0	1ks		S	0.13	3.3	Clear	
Newport, Rhode Island	29.91	759.7	29.96	761.0	77	25.0	61	NW	4	1.8		0	0			0.23	5.8	Clear	
New River, North Carolina																			
New York, New York	29.83	757.7	30.00	762.0	77	25.0	72	Calm	0	0		5ck	Haze	Calm	Calm	0	0	Fair	
Norfolk, Virginia	30.02	762.5	30.07	763.8	87	30.6	52	W	8	3.6		1c	Haze	W		0	0	Clear	
North Platte, Nebraska	26.99	685.5	29.45	748.0	65	18.3	81	N	14	6.3		5k	0	W		0	0	Fair	
Olympia, Washington Ter	29.95	760.7	29.99	761.7	53.0	11.7	93	NE	2	0.9		0	0			0	0	Clear	
Omaha, Nebraska	28.67	728.2	29.70	754.4	71	21.7	62	NW	8	3.6			10s		SW	Inap.	Inap.	Threatening	
Oswego, New York	29.68	753.9	29.99	761.7	75	23.9	72	S	4	1.8		1c	0	NW		0	0	Clear	
Pembina, Dakota	28.95	735.0	29.75	755.6	55	12.8	81	NW	15	6.7		2c	0	Calm		0	0	Clear	
Pensacola, Florida	30.16	766.1	30.19	766.8	80	26.7	87	S	11	4.9		4k	0	S		0	0	Fair	
Philadelphia, Pennsylvania	29.97	761.2	30.02	762.5	77	25.0	77	N	10	4.5		5ck	0	Calm		0.02	0.5	Fair	
Phœnix, Arizona	28.71	729.2	30.39	771.9	87	30.6	42	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.96	456.2	30.17	766.3	35	1.7	53	NW	16	7.2		8cs	0	NW		0.02	0.5	Cloudy	
Pilot Point, Texas	29.15	740.4	29.97	761.2	69	20.6	95	S	17	7.6			10n		S	0.78	19.8	Light rain	
Pioche, Nevada	24.07	611.4	29.84	757.9	63	17.2	38	NW	6	2.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.24	742.7	30.02	762.5	72	22.2	85	NW	5	2.2		5k	0	Calm		0	0	Fair	
Port Huron, Michigan	29.25	742.9	29.88	758.9	72	22.2	90	SW	10	4.5		10cs;ck	0	W		0	0	Cloudy	
Portland, Maine	29.88	758.9	29.93	760.2	74	23.3	68	NW	6	2.7		0	0			0	0	Clear	
Portland, Oregon	29.91	759.7	29.98	761.5	56.5	13.6	87	NW	1	0.4		0	0			0	0	Clear	
Portsmouth, North Carolina					81	27.2	78	SW	18	8.0		5c	0	Calm		0	0	Fair	
Prescott, Arizona																			
Punta Rassa, Florida	30.19	766.8	30.20	767.1	83	28.3	75	E	9	4.0		1c	0	Calm		0.12	3.0	Clear	
Red Bluff, California																			
Rio Grande City, Texas	29.75	755.6	29.96	761.0	80	26.7	82	SE	12	5.4		0	2s		SE	0	0	Clear	
Rochester, New York	29.36	745.7	29.94	760.5	72	22.2	80	SW	4	1.8		1c	0	Calm		0	0	Clear	
Roseburg, Oregon	29.41	747.0	29.98	761.5	51.5	10.8	90	Calm	0	0		0	0			0	0	Clear	
Sacramento, California	29.80	756.9	29.88	758.9	55	12.8	87	S	4	1.8		0	0			0	0	Clear	
St. Louis, Missouri	29.38	746.2	29.92	760.0	72	22.2	80	S	11	4.9		10cs	0	W		0.06	1.5	Cloudy	
St. Paul, Minnesota	28.90	734.0	29.67	753.6	69	20.6	90	SW	3	1.3			10s		SW	0	0	Cloudy	
Salt Lake City, Utah	25.62	650.7	29.94	760.5	67	19.4	33	Calm	0	0		0	0			0	0	Clear	
San Antonio, Texas	29.27	743.4	29.94	760.5	82	27.8	71	SE	8	3.6			10ks		SE	0	0	Cloudy	
San Diego, California	29.85	758.2	29.92	760.0	61	16.1	82	W	4	1.8			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.31	744.5	29.94	760.5	74	23.3	86	S	10	4.5		5k	2ks	S	S	0	0	Fair	
Sandy Hook, New Jersey	29.98	761.5	30.01	762.2	77	25.0	72	Calm	0	0		5ck	Haze	NW	Calm	0	0	Fair	
San Francisco, California	29.91	759.7	29.98	761.5	51	10.6	93	W	8	3.6			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	28.24	690.3	29.78	756.4	66	18.9	32	NE	4	1.8		0	0			0	0	Clear	
Savannah, Georgia	30.12	765.0	30.21	767.3	88	31.1	66	SW	6	2.7		0	Haze		Calm	0	0	Clear	
Shreveport, Louisiana	29.80	756.9	30.02	762.5	75	23.9	90	Calm	0	0		0	5s		SW	0.79	20.1	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.16	766.1	30.20	767.1	81	27.2	74	SW	12	5.4		1k	0	Calm		0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.24	742.7	29.88	758.9	73	22.8	85	S	10	4.5			10s		SW	0.42	10.7	Cloudy	
Springfield, Massachusetts	29.88	758.9	30.00	762.0	81	27.2	55	Calm	0	0		0	0			0	0	Clear	
Stockton, Texas	26.83	681.5	29.83	757.7	73	22.8	63	SE	11	4.9		0	0			1.09	27.7	Clear	
Thatcher's Island, Mass	29.90	759.4	29.95	760.7	74	23.3	72	NW	1	0.4		Haze	Haze			0	0	Light haze	
Toledo, Ohio	29.28	743.7	29.93	760.2	76	24.4	77	SW	10	4.5		5cs	0	SW		0	0	Fair	
Tucson, Arizona	27.45	697.2	30.00	762.0	76	24.4	20	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.66	753.4	30.14	765.5	61	16.1	31	E	6	2.7		0	0			0	0	Clear	
Uvalde, Texas	29.03	737.3	29.80	756.9	81	27.2	67	SE	4	1.8		5k	0	S		0	0	Fair	
Vicksburg, Mississippi	29.88	758.9	30.13	765.3	74	23.3	92	S	5	2.2		0	5s		S	0.79	20.1	Fair	
Virginia City, Montana	24.40	619.8	29.88	758.9	45	7.2	76	NE	5	2.2			10ks		NE	0.12	3.0	Clearing	
Visalia, California	29.46	748.3	29.82	757.4	62	16.7	67	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C	29.94	760.5	30.05	763.3	78	25.6	78	W	1	0.4		8cs;ck	0	SW		0.10	2.5	Fair	
Wickenburg, Arizona					61	16.1	26	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.10	764.5	30.17	766.8	84	28.9	68	W	11	4.9		0	0			0	0	Clear	
Winnemucca, Nevada	25.65	651.5	30.01	762.2	58	14.4	27	NE	12	5.4		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.92	760.0	29.96	761.0	74	23.3	72	NW	5	2.2		2c	0	Calm		0	0	Fair	
Yankton, Dakota	28.54	724.9	29.78	756.4	67	19.4	79	NE	4	1.8			10ks		SW	0.20	5.1	Cloudy	
Yuma, Arizona	29.59	751.6	29.73	755.1	73	22.8	59	NE	3	1.3		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.03	559.6			54.8	12.7	85	Calm	0	0		2k	5ks			0.05	1.3	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I	30.13	765.3	30.18	766.6	81	27.2	74	SE	2.4	1.1		8cs	0	Calm		0	0	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	79.8	26.6	70	Calm	0	0		0	0			0	0	Fine	Maxwell Hall.
Navassa, W. I	29.91	759.7	29.99	761.7	81	27.2	75	NE	5	2.2		5ck	5s	E	NE	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.02	762.5	30.03	762.7	79	26.1	91	E			2		8ks		E	0.240	6.10	Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.46	748.3	30.01	762.2	81	27.2	90	Calm			0		10ks			0.12	3.0		Francesco J. Cisneros.
§ Rivas, Nicaragua					73	23		NE				8ck	1d		NE	1.30	33.	Covered	Earl Flint.
Santiago de Cuba, W. I	30.11	764.8	30.14	765.5	81	27.2	70	N	9.6	4.3		8c	2s	SE	NE	0	0		Robert Mason.
St. Thomas, W. I																			G. O. Gyllich.
York Factory, B. A	29.85	758.2	29.90	759.4	48.0	8.9	96	NE	8	3.6		2c	0	N		0	0	Fair	J. Fortescue & W Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft.,or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer,(?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per-cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.21	767.3	82	27.8	91	SE	10	4.5			2d		SE					Fair	
Navy Yard, Portsmouth, N. H.	29.98	761.5	71	21.7	75	NW	2	0.9			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.88	758.9	69.5	20.8	90	SW			3		4k		SW	Slight	Slight			Fair	
§Adams, Chimbote, Peru	30.05	763.3	66	18.9	84	N			1		10		N					Cloudy	
§Alaska, Mollendo, Peru, S. 17°, W. 73°*	30.08	764.0	60	15.6	82	NE			3		10					Long	SW	Cloudy	
§Alert, N. 29° 36′, E. 140° 12′	29.82	757.4	78	25.6	78	WSW			1		2		WSW	0	0	Smooth		Fair	
§Alliance, Virgin Rocks, N. 46° 25′, W. 50° 50′	29.87	758.7	46	7.8	92	SSW			1		8		SSW	0	0	Smooth	NE	Fair	
§Ashuelot, N. 34° 06′, E. 132° 58′	29.92	760.0	72	22.2	76	SW			1		8		Calm			None		Cloudy	
§Colorado, New York, N. Y.	30.00	762.0	76	24.4	73	Calm	0	0			5		W					Misty	
§Constellation, Navy Yard, Brooklyn, N. Y.	29.88	758.9	81	27.2	68	Calm			0		5							Hazy	
§Constitution, Navy Yard, Brooklyn, N. Y.	29.97	761.2	77	25.0	77	Calm	0	0			5		Calm					Hazy	
§Franklin, Off Navy Yard, Norfolk, Va	30.03	762.7	80	26.7	78	WSW	9.6	4.3			0			0	0			Clear	
§Independence, Mare I'd, Navy Yard, Cal.	29.94	760.5	60	15.6	76	W	4.8	2.1			0			0	0			Clear	
§Jamestown, Sitka, Alaska*	30.18	766.6	50	10.0	86	Calm			0		10					Smooth		Cloudy	
§Kearsarge, Boston, Mass	29.98	761.5	77	25.0	61	NW			1		0					Smooth		Clear	
§Lackawana, N 6° 30′, W. 79° 50′ †	30.09	764.3	79	26.1	86	SW			3		8		SW					Fair	
§Marion, S. 39° 58′, W. 57° 08′	30.18	766.6	47	8.3	92	S			5		10			0	0	Long	S	Cloudy	
§Michigan, Erie, Pa	29.90	759.4	73	22.8	85	S			2		2		S					Clear	
§Minnesota, Poughkeepsie, N. Y.*	30.02	762.5	75	23.9	90	Calm			0		2		Calm					Fair	
§Monocacy, Chefoo, China	29.42	747.3	68	20.0	100	N			0–1		5?							Cloudy?	
§New Hampshire, Port Royal, S. C.	30.19	766.8	82	27.8	83	SSW	8	3.6			2		Calm	0	0			Clear	
Nipsic, Alexandria, Egypt	29.94	760.5	79	26.1	78	NNW			3		0					Smooth		Hazy	
§Onward, Chimbote, Peru †	29.97	761.2	66	18.9	79	Calm			0		8					Long	W	Cloudy	
§Palos, Shanghai, China	29.74	755.4	81	27.2	91	SSE			2		2							Clear	
§Passaic, Washington, D. C.	30.07	763.8	77	25.0	91	SW			1		5		S	0.2	5.			Fair	
§Pensacola, Vallejo, Cal	29.90	759.4	54	12.2	87	N			3		10		N			Smooth		Cloudy	
§Portsmouth, N. 38° 36′, W. 39° 56′	29.92	760.0	67	19.4	79	W			5		8		WSW			Mod'ate	W	Cloudy	
§Powhatan, New York, N. Y.	29.99	761.7	76	24.4	82						5		W					Fair	
§Quinnebaug, Stockholm, Sweden	29.98	760.2	64	17.8	48	NNE			2		8		NNE			Smooth		Cloudy	
§Richmond, Kobe, Japan	29.90	759.4	74	23.3	100	Calm			0		0			0	0	Smooth		Clear	
§Saratoga, Naples, Italy	29.80	756.9	76	24.4	64	W			4		10		W	0	0			Hazy	
§Shenandoah, Buenos Ayres, Argentine Republic	30.09	764.3	50	10.0	86	SSE			6		10					Rough	SE	Cloudy	
§St. Louis, League Island, Pa	29.99	761.7	75	23.9	90	SW	4	1.8			5		W	0	0			Fair	
Swatara, Amoy, China			83	28.3	83	SE			3		5		SE			Smooth		Fair	
§Tennessee, New York, N. Y.	30.00	762.0	82	27.8	67	Calm			0		5		Calm	0	0			Hazy	
§Ticonderoga, Nagasaki, Japan	29.91	759.7	77	25.0	86	W			1		10		SW			Smooth		Cloudy	
§Trenton, N. 46° 20′, W. 8° 42′	30.38	771.6	72	22.2	62	NNE			1		2?			0	0	None		Cloudy?	
§Vandalia, Boston, Mass			75	23.9	60	NNW			1		1		Calm					Clear	
§Wabash, Boston, Mass	29.97	761.2	76	24.4	49	NW	5	2.2			2			0	0			Fair	
§Wachusett, S. 31° 02′, W. 71° 40′	30.08	764.0	54	12.2	93	SSE			1–2		5		SW			Smooth	N	Fair	
Wyoming, N. 37° 21′, W. 12° 21′	30.22	767.6	64	17.8	83	NNE			4		5		NE			Mod'ate	NE	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 51° 05′, W. 34° 14′	29.47	748.5	54	12.2		WNW			2		8		WNW			Long	SW	Fair	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent																			
N. 40° 04′, W. 51° 39′	29.94	760.5	66	18.9	74	WNW			1		8		WNW	Mod'ate	Mod'ate	Mod'ate	W	Cloudy	
S. S. Ohio, Henry Morrison, N. 47° 54′, W. 21° 36′ †	30.05	763.3	65	18.3	94	WSW			3		10		SW	3 h'rs	3 h'rs	Mod'ate	SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 39° 54′, W. 58° 43′	29.80	756.9	86	30.0	72	W			5		5		NW	1 h'r	1 h'r	Mod'ate	WNW	Fair	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, Hong Kong, China	29.69	754.1	84	28.9	91	SE			2		10ks			Light	Light	Smooth		Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 42° 40′, W. 165° 10′ *	30.22	767.6	54	12.2	74	W			5		8		W	0	0	Slight	WNW	D. clouds	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, N. 43° 55′, W. 124° 36′ †	29.93	760.2	49	9.4	100	NNW			1-2		Fog		NW			Smooth		Fair	J. M. Lachlan.
S. S. Oregon, E. Polemann, San Francisco, Cal. †	29.94	760.6	52.5	11.4		SW			1		10							Hazy	L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, Santa Barbara, California †	29.95	760.7	58	14.4		NE			1		Fog							Foggy	
S. S. Orizaba, C. B. Johnson																			Harrison & Marshall.
S. S. State of California, G. Debney, Portland, Oregon †	29.93	760.2	58	14.4		Calm			0		0							Clear	
S. S. Victoria, H. M. Haywood, Nanaimo Harbor, Vancouver I'd †	30.04	763.0	65	18.3	68	NNW			3		0							Clear	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Panama, Panama.....†	29.99	761.7	76	24.4	100	Calm			0		10		Calm			Smooth		Cloudy	F. A. Johnston.
§S. S. Australia, S. 15° 22′, W. 171° 46′....†	29.95	760.7				E			3		0					Smooth		Clear	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	29.99	761.7	52	11.1	93	SW			2		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly, N. 35° 53′, W. 121° 40′...†	29.93	760.2	51	10.6	100	NW			6		10		NW	1.	25.	Very Rough	NW	Heavy mist.	R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 47° 44′, W. 174° 04′...†	30.07	763.8	42	5.6	100	W			3		10		W	0	0	Smooth		Cloudy	
§S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama.... †	29.97	761.2	80	26.7	100	NW			1		8		NW	0.10	2.5			Cloudy	
§S.S. Dakota, H. G. Morse, Olympia, Washington T'y.†	30.03	762.7	55	12.8	87	Var.			1		0			0	0	None		Clear.	
§S.S. Granada, J. M. Cavarly N. 18° 54′, W. 104° 32′...†	29.95	760.7	83	28.3	79	SE			6		2cs		SE	0	0	Short; Heavy	SE	Clear	C. T. Rode.
§S. S. Idaho, E. Alexander, San Francisco, Cal.....†	29.94	760.5	56	13.3		WNW			1		5?		WNW	0	0			Overcast?	E. Alexander.
§S.S. Zealandia, R. C. Ghest, S. 33° 30′, E. 177° 39′.....	29.87	758.7	64	17.8		NW			6		5		N			High	Confused	Cloudy	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N 51° 04′ W 24° 22′...†	29.82	757.4	58	14.4	88	W			4		10		W			Mod'ate	W	Raining	J. Jones.
S. S. Celtic. B. Gleadell..																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.17	766.3	84	28.9		SSW			1		0			0	0			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Off Falmouth, Mass	29.96	761.0	73	22.8	72	Calm	0	0			0			0	0			Clear.	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Beckle, B. F. Woodbury, N. 23° 50′, W. 34° 57′.....*†	30.26	768.6	78	25.6		E			1		2		E			Smooth	ENE	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 56° 06′, W 45° 35′.....†	29.81	757.2				E			1		10		E			Long	E	Cloudy	S. S. Miner.
Brigantine George, W. H Champlin, N. 30° 09′, W. 66° —′. .....†	30.40	772.1	79	26.1		WNW			1		2		Calm	0	0	Smooth		Clear	
Iron Cross, W. Randall, N. 34° 26′, W. 72° 30′.....*	30.16	766.1	80	26.7	93	SW			5		7		WNW	0	0	Mod'ate	WSW	Misty.	W. Randall.
British Barque Ivigtut, Adam Smith. N. 44° 13′, W. 54° 31′...,*	29.78	756.4				SSE			4		10					Mod'ate	SW	Drizzling	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.69	754.1	66	18.9	100	Calm			0		2		N	8 h'rs	8 h'rs			Fine	James S. Garvin.

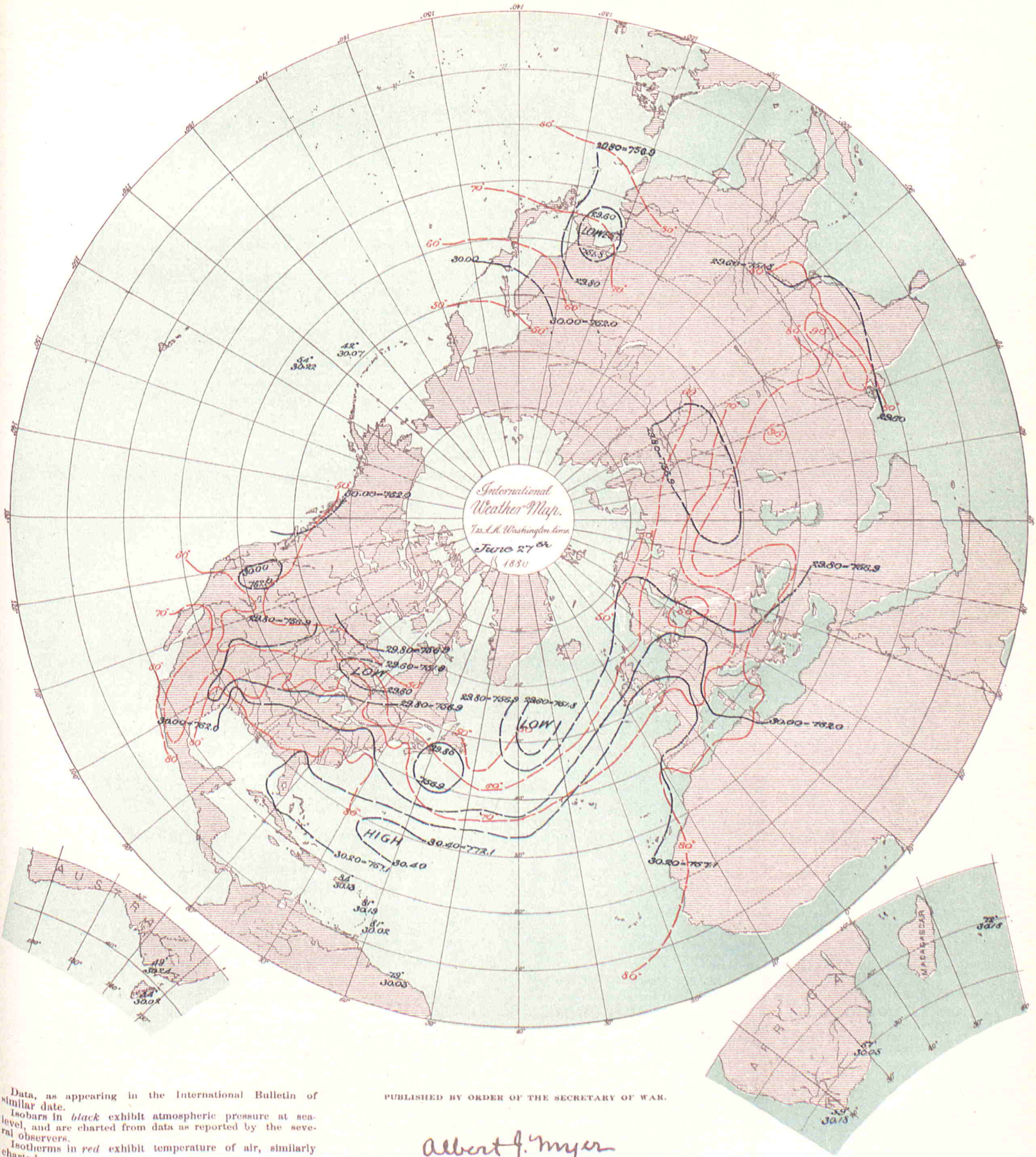
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

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BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 28, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:38 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:40 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.18	766.5	79.2	26.2	56	Calm			0		0			0	0	Clear	Metge.
Algiers			30.21	767.4	76.6	24.8	53	ENE			4		0			0	0	Clear.	Nicolas.
La Calle			30.21	767 2	75.0	23.9	73	NNW			4		4			0	0	Cloudy	Fonfrède.
Tunis			30.03	762.8															Jacques.
Sfax			30.13	765.3															Gau.
Saida			30.13	765.8															Charon.
Tobessa			30.17	766.4	74.3	23.5	30	N			3		4			0	0	Cloudy	Watrin.
Geriville			30.19	766.8	94.5	34.7	26	NE			1		0			0	0	Clear	Lonchamp.
Laghouat			30.23	767.9	85.3	29.6	10	N			2		0			0	0	Clear	Herlin.
Biskra			30.21	767.3	88.9	31.6	32	E			1		0			0	0	Clear.	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tobessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.54	750.3	30.07	763.8	72.0	22.2	39	NE			4		5			0	0		Prof. Ivan Stozir
Cracow, I. R. Observatory	29.31	744.4	30.06	763.5	65.8	18.8	68	NNW	18.0	5.8			3			0	0		Dr. Wierzbicki.
Eperies	29.09	738.8	29.94	760.5	68.0	20.0	32	N			5		2cs			0	0		Julius Mikolik.
Gratz	28.89	733.7	30.11	764.7	67.8	19.9	50	NW			4		0			0	0		Andreas Rospini.
Hermannstadt	28.42	721.9	29.81	757.2	65.5	18.6	75	NW			1		10			0.041	1.05		Prof. A. Gottschling.
Kremsmünster, Observatory	28.85	732.7	30.15	765.9	68.0	20.0	57	N			1		8			0.039	1.0		The Staff.
Lemberg	28.90	734.0	29.87	758.6	60.6	15.9	85	W			3		3			0.020	0.5		Dr. T. Stanecki.
Pola	30.00	762.0	30.11	764.7	74.3	23.5	50	WNW			4		5			0	0		I.R.Hydrographic Office.
Szathmar	29.48	748.7	29.93	760.2	68.0	20.0	63	NW			5		6			0	0		Pet. Pancsics, S. J.
Szegedin	29.67	753.5	29.94	760.4	70.9	21.6	51	N			2		7			0	0		Karl Stancel.
Trieste	30.04	763.0	30.14	765.6	73.4	23.0	66	W			1		1			0	0		P. Busin.
Vienna	29.41	747.1	30.16	766.1	71.8	22.1	40	NNW			3		2			0	0		I.R.Central Met. Obs'y

NOTE.—The originals occasionally give the weather by he Vienna symbols or in general terms, but t is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	30.06	763.4	30.25	768.4	64.4	18.0	66	WSW			4	10	10		WSW	0	0		Royal Observatory.
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed January 8, 1881.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S, E. Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

Stations.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.71	754.6	29.81	757.2	69.6	20.9		WSW	16	7.2			7			0	0	D. clouds	W. Boswell.
Ardrossan	29.92	760.0	29.94	760.5	59	15.0		SSW			5		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.78	756.4	30.01	762.2	61.6	16.4		SW	11	4.9			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			30.09	764.3	65.5	18.6		SW	31	13.9			9					Overcast	John Hartnup.
Bolton (Sharples)	29.56	750.8	30.07	763.8	61.1	16.2		SW	36	16.1			10					Squally	Thomas Mackereth.
Bradford, Yorkshire	29.68	753.9	30.08	764.0	63.0	17.2	79	NW			4		10			0.05	1.3	Overcast	J McLandsborough.*
Bridgetown, Barbadoes	30.00	762.0	30.04	763.0	78	25.6		NE			1		5					D. clouds	Pvt.G.Surgener, A.H.C
Cambridge (Observatory)	30.08	764.0	30.18	766.6	68.0	20.0		SW			1		10ks					Overcast	H. Todd.
Cardington			30.15	765.8	73.0	22.8		W			1		7					Blue sky	John McLaren.
Chatham (School M. E.)	30.08	764.0	30.20	767.1	71.9	22.2		W			1		6k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.96	761.0	30.00	762.0	65	18.3		W			4		10					Showery	J. Mac Gowan.
Dover	30.20	767.1	30.24	768.1	61	16.1		WSW			4		5					½ clouded	J. Costello.
Falmouth (Observatory)	30.09	764.3	30.32	770.1	64.7	18.2		SW			3		10					Overcast	The Staff.
Fort Napier, Natal	27.97	710.4	30.18	766.6	66.4	19.1		NE			1		0					Blue sky	Corp'l H.Coombs, A.H.C
Free Town, Sierra Leone	29.70	754.4	29.93	760.2	82	27.8		SW			1		8					D. clouds	
Galway (Queen's College)			30.03	762.7	59	15.0		SW			5		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.10	764.5	30.16	766.1	74.1	23.4		E			5		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.72	754.9	29.92	760.0	60.1	15.6		SW			3		10			Blank	Blank	Overcast	D. G. Maclean.
Great Yarmouth	30.12	765.0	30.13	765.3	71	21.7		W			3		3					Squally	G. T. Watson.
Greenwich (Royal Obs'y)	30.04	763.0	30.21	767.3	73.4	23.0		WSW			4		4					D. clouds	The Staff, for G.B.Airy.
Guernsey	30.12	765.0	30.34	770.6	64.5	18.1		WNW			2		7					D. clouds	Dr.S.E.Hoskins, F.R.S.
Helston	30.49	774.4	30.61	777.5	66	18.9		W			4	ck				0	0	Fine	M. P. Moyle.
Holyhead	30.02	762.5	30.11	764.8	58	14.4		SW			4		10					Misty	John Tilston.
Jersey	30.09	764.3	30.38	771.6	61.2	16.2		W			2		8					Gloomy	J. Fisher.
Kew (Observatory)	30.18	766.6	30.22	767.6	69.2	20.7		W	18	8.0			6					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.79	756.7	30.04	763.0	69.0	20.6		SW			1		9					D. clouds	Wm.J.Harrison, F.G.S.
Malta, Mediterranean	29.86	758.4	29.94	760.5	78.4	25.4		NW			3		1					Blue sky	A. King.
Nairn	29.67	753.6	29.76	755.9	68	20.0		WSW			4		5					¼ clouded	W. D. Penny.
Nassau, Bahamas			30.16	766.1	86.2	30.1		NE			1		7					D clouds	C. S. Duncombe.
Nottingham (Observatory)	29.94	760.5	30.13	765.3	72.1	22.3		SSW			3	c	7k		WSW	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.62	752.3	30.13	765.3	68.8	20.4		SW			5–6		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.99	761.7	30.24	768.1	67	19.4		SSW			5		5					D. clouds	The Staff, for E. J. Stone, Esq
Plymouth	30.22	767.6	30.30	769.6	63.7	17.6		SW			2		10					Overcast	John Merrifield.
*Roche's Point	30.12	765.0	30.25	768.3	63	17.2		WSW			5		10					Overcast	Wm. Kennedy.
St. Ann's Head	30.06	763.5	30.23	767.8	59	15.0		SW			4		6					Misty	John C. Walker.
Sandwick Manse, Orkneys			29.76	755.9	56.4	13.6		W	22	9.8			0					Blue sky	Rev. C.Clouston, L.L.D.
Scutari Cemetery, Turkey	29.47	748.5	29.54	750.3	78.4	25.8		SW			1		9			Blank	Blank	Misty	Serg't W. H. Lyne.
Sheffield	29.89	759.2	30.17	766.3	66.1	18.9		WSW			4		9			0	0	Overcast	W. F. Cooper.
Silloth Rectory	29.96	761.0	29.98	761.5	59.0	15.0	91	W			5		10			0.123	3.13	D. clouds	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			30.10	764.5	61.0	16.1		WSW	17	7.6			10					Raining	Rev. S. J. Perry.
Stratfield, Turgiss	30.03	762.7	30.24	768.1	69.8	21.0		W			3–4		7					Squally	Rev.C.H.Griffith, F.M.S.
Truro (Royal Institution)	30.32	770.1	30.33	770.4	66	18.9		SW			4		10					Gloomy	W. Newcombe.
Valencia (Observatory)	30.11	764.8	30.13	765.3	59.3	15.2		SSW	36	16.1						Blank	Blank	Misty	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.36	771.1	30.40	772.1	64.8	18.2	70	SSW	3.1	1.4		8	9			0	0	Cloudy	The Staff, for D. Gill.
Hobart Town, Tasmania			30.02	762.5	51.0	10.6	81	SW			1		10kn			0.06	1.5	Covered	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.92	760.0	68.0	20.0		W			4		10k			0.18	4.6	Overcast	Andrew Gibb.
Mauritius (Observatory)	29.96	761.0	30.15	765.9	73.3	22.9	70	SSE	26.0	11.6		0	2		ESE	0	0	Squally	C. Meldrum.
Melbourne (Observatory)	30.15	765.8	30.24	768.1	47.0	8.3	87	W	4	1.8			3			0.01	0.3	Very fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.78	756.4	61	16.1		SW			3		Fog			0.2	5.		J. Youngclause.
North Unst, Shetland I's			29.61	752.1				W			6	3	5	NW		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction from—		Observer.
H. M. S. Alert				Capt.J.P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 35° 25′, W. 70° 40′	3	W	Misty	Capt. W. Randall.
Ship Lochee, S. 34° 55′, E. 19° 20′			D. clouds	Capt. J.Raeburn, R.N.R.
Barque Queen of Cambria				Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 42° 13′, W. 9° 38′			Blue sky	Capt. R. J. Blackiin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.24	666.5	29.96	761.0	66.2	19.0	88	SE			1	2ck				Inap.	Inap	Clear	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.94	760.4	29.98	761.6	60.6	15.9	90	SW			2		10						
Fanöe	29.95	760.6	29.97	761.1	61.3	16.3	89	WSW			6		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.63	752.6	29.67	753.7	50.4	10.2	70	W			6		0						
Thorshavn (Faröe)	29.47	748.4	29.50	749.3	53.2	11.8	80	W			4		10						
Vestervig	29.78	756.5	29.88	758.9	60.8	16.0	90	SW			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Maseart, Director, and the respective observers.

Alençon, Normal School	29.82	757.4	30.37	771.4	69.8	21	57	SW			1		0			0	0	Clear.	Collignon, Director.
Amiens, Normal School	30.21	767.3	30.32	770.1	71.6	22	59	SW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	30.00	762.0	30.26	768.5	58.5	14.7	48	WNW			8		8s;ns	E		0	0		Klein, Commandant.
Avignon, Normal School	30.13	765.3	30.21	767.3	81.3	27.4	47	N			3		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.78	756.3	30.32	770.1	71.8	22.1	46	NE			1		2k		NE	0	0	Slightly cld'y	C. Saillard, Director.
Beauvais, Normal School	30.07	763.6	30.32	770.0	70.3	21.3	62	W			2		8		WNW	0	0	Very cloudy	Frère Eugene Marie.
Besançon, Normal School	29.47	748.4	30.30	769.5	73.2	22.9	55	NW			1		2		NE	0.067	1.7	Slightly cld'y	A. Carré, Director.
Bordeaux	30.09	764.2	30.28	769.2	78.6	25.9	46	E			1		2		E	0	0	Slightly cl'dy	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.45	748.1	30.39	771.9	75.9	24.4	46	N			2		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.84	757.8	30.37	771.4	74.3	23.5	100	W			1		c	W		0	0		M. Gence, Director.
Brest, Naval Observatory	30.10	764.6	30.34	770.7	73.0	22.8	71	SW			1		0			0	0		Ch. de Rermarec, Dir.
Caen, Normal School	30.24	768.2	30.32	770.1	69.1	20.6	77	W			1		5		W	0	0	Cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.88	757.7	30.23	767.8	81.3	27.4	40	W			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	30.00	762.1	30.32	770.0	76.6	24.8	46	SW			1		2		SW	0	0	Slightly cld'y	Jadot, Director
Chartres, Normal School	29.73	755.2	30.28	769.2	67.1	19.5	77	W			1		1		N	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.90	735.6	30.27	768.8	76.1	24.5	42	N			1		5		N	0	0		Allnard, Director.
Commercy, Normal School	29.46	748.3	30.31	769.8	69.8	21	58	NW			1	ck		NW	NW	0	0		Dr. Coullet, Director.
Commune de Gréasque*	29.11	739.4	30.25	768.4	81.7	27.6	27	SW			2		2		SW	0	0		L. Kina, Director.
Grenoble, Normal School	29.48	748.7	30.22	767.5	75.9	24.4	71	ENE			1		k		SW	0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	30.15	765.7	30.35	771.0	76.6	24.8	61	W			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	30.03	762.7	30.33	770.3	71.4	21.9	62	E			1		2		E	0	0	Slightly cld'y	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.39	746.6	30.30	769.6	73.4	23	52	N			2		2k	N	N			Slightly cld'y	M. Cadoret, Director
Lorient, Naval Observatory	30.27	768.9	30.37	771.5	67.6	19.8	66	S			2		1		S	0	0	Clear.	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.69	754.1	30.29	769.3	75.7	24.3	45	N			2		0			0	0	Clear.	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.93	760.2	30.19	766.9	82.2	27.9	27	SW			1		0			0	0	Clear.	E. Stephan, Director.
Mirecourt, Normal School	29.20	741.6	30.22	767.5	69.4	20.8	62	NW			1		k		NW	0	0		Barbier, Director.
Mont-Louis	25.13	638.3	30.37	771.3	64.0	17.8	46	E	9.4	4.2			0			0	0		M. Cave, for Dr. Fines.
Nice	30.14	765.6	30.17	766.4	77.4	25.2	69	SW			2		1	W	SW	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	30.01	762.3	30.21	767.3	81.1	27.3	29	N			4		0			0	0	Clear	M. Boyer, Director.
Perpignan	30.13	765.2	30.23	767.8	80.6	27.0	26	NE	7.5	3.3			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.85	580.4			59.2	15.2							0			0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P																			
Privas, Normal School	29.22	742.3	30.25	768.4	77.0	25	28	N			1		0			0	0	Clear.	M. Tallieu
Puy de Dome (Summit) Obs	25.50	647.7			52.0	11.1	78	NNE			2		5		NNE	0	0	Misty	Allnard, Director.
Rochefort, Naval Obs'y	30.38	771.6	30.41	772.4	78.8	26.0	62	E			1		2	E	E	0	0	¼ covered	Lt. E. Devante, Director
Rouen, Normal School	30.25	768.3	30.34	770.5	66.4	19.1	73	WNW			2		2		W	0.020	0.5	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.32	770.1	30.35	770.9	64.4	18.0	64	NNE			3		0			0	0	Clear.	Lt. Hercouet, Director.
Saint Maur (near Paris)	30.16	766.1	30.33	770.3	72.9	22.7	58	WNW			1		0?	NW	WNW	0	0		E. Renou, Director.
Tarbes, Normal School	29.20	741.6	30.26	768.5	68.0	20	55	S			1								T. Huguet, Director
Toulouse, Observatory	29.62	752.4	30.35	770.9	75.2	24.0	46	N			2		0			0	0	Clear	B. Baillaud, Dir.
Tours	30.12	765.1	30.32	770.1	78.8	26.0	48	S			1		5		N	0	0	½ covered	M. de Tastes.
Versailles, Observatory	29.84	757.8	30.33	770.3	71.2	21.8	54	NW			2		0			0	0	Clear	Dr. A. Berigny, Director
Villefranche-sur-Saone, N. S	29.58	751.4	30.27	768.8	78.4	25.8	49	ENE			1		2		NE	0	0	Slightly cl'dy	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.21	767.3	30.24	768.0	79.5	26.4										0.71	18.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	30.05	763.3			70.5	21.4	56	WSW			1		2		WNW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.65	753.0	29.67	753.7	80.8	27.1	84	SSE	6.3	2.8			0			0	0	Cloudy	Marc Dechevrens, S.J.

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,204.8 ft.; Pic du Midi, (Plantade) 2,866 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 305.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.38	746.3	30.25	768.4	67.1	19.5	75	NW			4		8n	W		0.008	0.2	Raining	Prof. Dr. Hoh.
Berlin	29.99	761.8	30.16	766.0	69.8	21.0	49	W			2		10			0	0		Prof. Dr. Arndt.
Breslau	29.61	752.2	30.15	765.7	69.4	20.8	50	NNW			3		3			Inap.	Inap.	Sprinkling	Royal University Obs'y.
Carlsruhe	29.48	748.9	29.90	759.4	72.7	22.6	62	W			1		9	NW		0	0		Albert Senz.
Cassel	29.61	752.0	30.21	767.4	65.1	18.4	88	S			2		10	SW		0.110	2.80		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.85	758.2	30.22	767.5	69.8	21.0	46	W			2		10			Inap.	Inap.		Physical Society.
Friedrichshafen	28.87	733.3	30.27	768.9	68.9	20.5	70	SSE			2		8	NE		0	0		Chief Telegrapher Wilhelm.
Hamburg	30.04	763.1	30.12	765.0	60.6	15.9	94	WSW			4		10			0.004	0.1		Dr. Reinhold Kleeman.
Kiel	30.04	763.0	30.06	763.4	62.6	17.1	81	SW			7		10			0	0		Prof. Dr. G. Karsten.
Königsberg (Prussia)	30.00	761.9	30.08	764.0	64.2	17.9	40	NW			5		0			0	0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.78	756.4	30.19	766.9	69.1	20.6	58	W			2		9	WNW				Sprinkling	Prof. Dr. Bruhns, Privy Counselo
Magdeburg	29.95	760.7	30.18	766.5	65.8	18.8	43	WNW			5		10ks	WNW		0.004	0.1		Dr. Assmann.
Memel	30.01	762.2	30.06	763.4	60.8	16.0	46	NW			4	1c							Reinbrecht & Issermann.
Munich	28.45	722.5	30.33	770.3	66.7	19.3	52	W			4		9	W				Raining	Dr. C. Lang.
Neufahrwasser	30.08	763.9	30.09	764.3	65.8	18.8	46	E			2		2			0	0		A. Lothes.
Neustadt (Palatinate)	29.73	755.1	30.26	768.6	72.1	22.3	47	NW			2		7			0	0		Reallehrer Dicknether.
Posen	29.81	757.1	30.09	764.2	70.2	21.2	46	W			4		4			0.024	0.6		Prof. Dr. Magener.
Strassburg (in Alsace)	29.78	756.3	30.31	769.9	72.7	22.6	51	N			3		8	NNW		0	0		Imp. University Observatory.
Stuttgart	29.32	744.8	30.19	766.9	71.2	21.8	49	NW					10			0	0		Prof. Dr. Schoder.
Thorn	29.88	758.9	30.07	763.7	66.4	19.1	44	NW			4		0			0	0		Dr. Cunerth.
Weissenburg (Bavaria)	28.77	730.8	30.37	771.3	68.7	20.4	55	NW	1.6	0.7			10		NW	0.004	0.1		Reallehrer J. Hopfner.
Wustrow	30.05	763.3	30.08	764.0	63.0	17.2	87	SW			3		10s			0.122	3.1		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.27	743.4	29.64	752.9	85.5	29.7		SW			4.0		0					Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.38	746.2	29.43	747.4	89.2	31.8	69	SSW	28.3	12.6			8	ESE		0	0	Misty	
Deesa	28.98	736.2	29.44	747.7	92.8	33.8	47	SE	14.3	6.4			9	SE		0	0	D. clouds	
Bombay	29.59	751.6	29.63	752.5	79.5	26.4	91	SSW	21.0	9.4			10		SW	1.73	43.9	Overcast	
Poona (Yarrowda)	27.81	706.4	29.68	753.8	72.6	22.6	91	WSW	11.0	4.9			10	WSW	WSW	0.28	7.1	Drizzling	
Belgaum	27.21	691.0	29.76	755.9	70.5	21.6	89	SW	8.0	3.6			7	E	SW	0.54	13.7	Showery	
Lahore	28.76	730.4	29.49	748.9	83.0	28.3	79	E	3.1	1.4			10		E	0.68	17.3	Raining	
Roorkee	28.60	726.5	29.48	748.8	81.8	29.3	83	NE	3.0	1.3			9			0.04	1.0		
Agra	28.93	734.7	29.48	748.7	86.7	30.4	69	W	3.6	1.6						0	0		
Nagpur	28.48	723.4	29.51	749.4	83.0	28.3	76	W	7.8	3.5			9		W	0.20	5.1		
Jubbulpore	28.11	714.1	29.47	748.4	77.8	25.4	89	W	6.1	2.7			8			0.26	6.6	Overcast	
Lucknow	29.10	739.0	29.46	748.2	95.0	35.0	46	ENE	6.8	3.0			3	NW		0	0	Blue sky	
Allahabad	29.13	739.9	29.43	747.6	93.7	34.3	51	NE	5.0	2.2			5			0	0	D. clouds	
Patna	29.29	744.0	29.47	748.5	89.7	32.1	62	E	3.2	1.4			8	E	E	0.24	6.1	Drizzling	
Hazaribagh	27.48	697.9	29.47	748.6	76.8	24.9	85	E	12.4	5.5			8		E	0.06	1.5	Thunder-storm	
Cuttack	29.36	745.6	29.44	747.6	83.2	28.4	80	SSW	2.0	0.9			10			0.73	18.5	Overcast	
Calcutta (Alipore)	29.46	748.4	29.48	748.9	79.7	26.5	96	ESE	4.0	1.8			10		SE	1.18	30.0	Drizzling	
Goalpara	29.12	739.6	29.52	749.7	87.2	30.7	76	Calm	1.7	0.8			6			0.04	1.0	D. clouds	
Chittagong	29.50	749.2	29.58	751.4	81.9	27.7	77	ESE	6.8	2.8			8			0	0	D. clouds	
Sibsagar	29.20	741.8	29.53	750.1	88.3	31.3	72	ENE	1.5	0.7			4			0	0	D. clouds	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.73	755.2	30.13	765.3	76.3	24.6	55	W	4.3	1.9			3			0	0		Prof. Giovanni Clodig.
Milan	29.62	752.3	30.12	765.0	79.5	26.4	27	W	3.1	1.4			4	W		0	0		Prof. Schiaparelli.
Padua	30.02	762.6	30.13	765.4	77.7	25.4	32	S	2.5	1.1			1			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.26	743.2	30.14	765.5	76.3	24.6	34	SSW	2.5	1.1			1			0	0		Prof. P. F. Denza.
Genoa	29.96	760.9	30.15	765.7	80.8	27.1	21	N	4.9	2.2			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.30	718.8	30.15	765.7	73.8	23.2	29	N			2		1	N		0	0		Prof. D. C. Bruno.
Pesaro	30.11	764.8	30.16	766.0	73.0	22.8	40	NE	6.9	3.1			1			0	0		Prof. Luigi Guidi.
Florence	29.87	758.8	30.13	765.2	80.6	27.0	21	N			4		1	N		0.079	2.0		Cav. F. Meucci.
Leghorn	30.08	764.1	30.17	766.2	75.6	24.2	59	W	18.1	8.1			2			0	0		Prof. P. Monte.
Rome	29.90	759.5	30.08	763.9	79.0	26 1	24	N					4			0	0		Prof. P. Tacchini.
Lecce	29.60	751.8	29.84	758.0	72.5	22.5	45	ENE	24.8	11.1			7	NE		0.571	14.5		Prof. C. De Giorgi.
Cosenza	29.02	737.2	29.87	758.8	72.0	22.2	69	NNW	4.3	1.9			6			2.244	57.0		Prof. D. Conti.
Cagliari	29.93	760.2	30.12	765.1	78.1	25.6	49	SE			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.82	757.5	30.07	763.8	74.5	23.6	47	NNW	18.6	8.3			1	N		0.004	0.1		Prof. G. Ciacciatore.
Syracuse	29.87	758.8	29.88	758.9	74.3	23.5	39	WNW	18.6	8.3			8			0	0		Prof. V.G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.50	749.3	30.01	762.2	75.2	24.0	30	SW	3.8	1.7			3			0.055	1.4		Prof. F. Brioschi.

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					68.6	18.7	96	NNE	3.1	1.4			10n			1.023	25.98	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.58	751.3	29.78	756.4	75.8	24.3	91	SW	5.0	2.2			10s			0.130	3.30	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.75	755.6	29.81	757.2	69.0	20.6	92	E	4.4	2.0			0			0.010	0.25	Clear	The Staff.
Wakayama	29.77	756.1	29.82	757.4	66.5	19.2	90	SW	0.8	0.4			10s			0.245	6.22	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the am unt of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.10	637.4	30.09	764.2	59.9	15.5	74	Calm			0	7k	0	N		0.06	1.4	Cloudy	Prof. L. Perez.
Guanaxuato	23.72	602.6			59.0	15.0	86	Calm	0	0		4c	0	NW	Calm	0.88	9.8	Clear	Vicente Fernandez.
Leon	24.47	621.4	30.10	764.4	64.0	17.8	84	SE			2	4c	0	SW		0.18	4.6		Prof. M. Leal.
Mazatlan																			F. Quijano, C. E.
Mexico, Central Observatory	23.12	587.2	30.08	764.1	56.8	13.8	87	Calm	0	0		0	7k			0.20	5.0	Cloudy	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.95	608.2	29.92	759.9	61.9	16.6	57	Calm			0	2c	0			0.13	3.3	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.50	596.9	30.26	768.5	55.4	13.0	66	Calm	0	0		1ck	0	E		1.60	40.6	Clear	Prof. P. Spina.
San Luis Potosi	24.22	615.1	30.13	765.2	62.2	16.8	49	SE			1	3	0	W		0	0	Hazy	G. Barroeta, M. D.
Tlacotalpam	29.94	760.5	29.95	760.8	78.4	25.8	85	SE			1	9	1	NE	SE	0	0	Very cloudy	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.65	575.2	30.23	767.7	55.2	12.9	88	Calm			0	0	0			Inap.	Inap.	Very clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.24	768.2	30.24	768.2	68.2	20.1		W			5					0	0		
Groningen	30.08	763.9	30.13	765.3	63.1	17.3		W			4					0.098	2.5		
Helder	30.13	765.4	30.13	765.4	62.8	17.1		SW			4					0	0		
Hellevoetsluis	30.21	767.3	30.21	767.3	67.5	19.7	70	WSW			4					0	0		
Utrecht	30.15	765.7	30.19	766.9	67.6	19.8	73	WSW			4		8			0.020	0.5	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.68	753.9	29.74	755.3	57.9	14.4	81	SW	13.4	6.0			10			0.646	16.4		
Brönö	29.59	750.9	29.60	751.9	64.8	18.2	43	E	18	8			9			0	0		
Christiania	29.63	752.6	29.77	756.2	62.2	16.8	70	SSW	18	8			10					Raining	
Tromsö	29.77	756.1	29.82	757.5	51.4	10.8	61	W	4	2			9			0.039	1.0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	30.02	762.5	30.23	767.8	72.7	22.6	91	SSW			5		4			0.157	4.0		Dr. J. A. Sampaio.
Campo Major	29.13	739.8	30.07	763.7	90.3	32.4	16	ESE	11.2	5.0			0			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.15	765.9	30.24	768.1	71.4	21.9	53	SW	3.8	1.7			6			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.77	756.2	30.11	764.9	84.2	29.0	30	E	4.9	2.2			0			0	0		The Staff.
Ponta Delgada (Azores)	30.18	766.6	30.25	768.4	76.3	24.6	71	SW	1.8	0.8			4			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st Lt
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, St. Paul de Loando			29.89	759.1	71.6	22.0		NW			1		4		NW	1	NW		D. clouds	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello. Mossamedes, Benguela			30.03	762.7	63.0	17.2		WNW			3		7		WNW	2	WNW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.87	758.7	29.89	759.2	59.0	15.0	91	NNW	4	2			10						Capt. Sseliwerstow.
Astrakhan	29.87	758.8	29.79	756.7	70.3	21.3	74	Calm	0	0			10s;n			Blank	Blank		Capt. Wisganow.
Barnaul	29.12	739.6	29.60	751.9	59.9	15.5	51	NW	2	1			9						Meteorological Obs.
Dorpat	29.72	754.9	29.96	760.9	64.0	17.8	38	N	9	4			5ck						Prof. Dr. Weihrauch.
Ekaterinburg	28.84	732.5	29.78	756.3	60.4	15.8	83	NE	4	2			7cks,n;					Thunder	Meteorological Obs.
Irkutsk																			
Kasan	29.54	750.2	29.78	756.5	83.3	28.5	32	N	2	1		2ck							Physical Cabinet.
Kertch	29.78	756.5	29.80	757.0	72.5	22.5	82	SSE	4	2			4						Lagorio.
Kieff	29.05	737.9	29.66	753.3	69.1	20.6	52	W	9	4		ck	5ks						Physical Cabinet.
Krotkowo*	29.35	745.5	29.79	756.7	81.5	27.5	37	S	9	4			10						Cand. Fatjanow.
Lugan	29.50	749.3	29.70	754.3	77.2	25.1	48	WSW	13	6			8			Blank	Blank		Meteorological Obs.
Moscow	29.26	743.2	29.80	756.8	63.1	17.3	87	S	4	2			7ks					Raining	Meteorological Obs.
Nertchinsk																			Meteorological Obs.
Nikolaiev	29.70	754.3	29.77	756.1	77.2	25.1	55	Calm	0	0			8cs;ks						Kurdakof.
Nikolaievsk, on the Amoor	30.04	763.0	30.12	765.2	54.5	12.5	85	NE	7	3			10n						
Nukuss	29.42	747.2	29.64	752.8	87.4	30.8	29	NNE	3.6	1.6			2ks						
Orenburg																			
Pekin (China)	29.52	749.7	29.66	753.3	70.5	21.4	86	Calm	0	0			8n						Physical Observatory.
St. Petersburg	29.87	758.8	29.89	759.2	55.5	12.9	94	N	11	5			10n					Light rain	Central Physical Obs.
Tashkend	28.05	712.4	29.48	748.8	87.1	30.6		Calm	0	0			0						Teich, A. M.
Tiflis	28.41	721.6	29.74	755.4	82.6	28.1	32	NW	13	6			1k						Physical Observatory.
Vladivostock																			
Warsaw	29.60	751.9	30.01	762.3	65.7	18.7	40	NNW	16	7			0						Astronomical Obs.
Wilna	29.49	749.1	29.91	759.6	59.2	15.1	65	NNE	11	5			8						Astronomical Obs.
Yeniseisk	29.48	748.9	29.76	756.0	55.4	13.0	64	S	2	1			1						Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	30.12	765.1	30.23	767.7	77.7	25.4	51	SSE	4.4	1.97			0			0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	30.17	766.3	30.23	767.7	84.2	29.0	47	SE	2.1	0.94		0	0			0	0	Clear	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.32	693.8			79.2	26.2	42	SE	5.8	2.59			0			0	0	Clear	Domingo Martinez Peres.
Madrid, Royal Observatory	28.04	712.1	30.15	765.8	86.0	30.0	27	SE	8.2	3.67		0	0			0	0	Clear	The Staff.
Murcia, Met. Obs'y	30.13	765.4	30.28	769.1	82.2	27.9	38	SSE	3.4	1.56		0	0			0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.24	742.7	30.09	764.3	84.9	29.4	42	SW	2.5	1.1			0			0	0	Clear	R. Gil Villanueva, Dir.
SUB-SERIES.																			
Havana, Cuba, W. I.	30.07	763.9	30.14	765.5	81.5	27.5	73	E	7.6	3.4		1c	0	ESE		0	0	Fair	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.2	29.90	759.5	84.5	29.2	70	S	1.5	0.7			2s		E	0	0	Clear	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.01	762.4	30.11	764.8	79.2	26.2	37	ESE	31.1	13.9		0	0			0	0		Capt. C. Pujazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.5	30.11	764.8	82.8	28.2	84	E	14.9	6.67		5cs	4k	E	E	0.079	2.00	D. clouds	Enrique Cadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.90	759.5	29.95	760.6	59.0	15.0		S			2		0			0	0		
Umea	29.91	759.8	29.97	761.1	59.4	15.2	41	SW			4		0			0	0		
Hernosand	29.86	758.4	29.91	759.7	59.9	15.5	53	S			6		2			0	0		
Stockholm	29.72	754.8	29.89	759.3	70.9	21.6	41	SW			2		5			0	0		
Wisby	29.89	759.1	29.95	760.6	68.7	20.4	59	SW			4		0			0	0		
Sub-Series.																			
Upsala	29.75	755.7	29.84	757.9	70.3	21.3	50	SSW	8.9	4.0			4		W	0.067	1.70		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall		
Barque Australia					J. P. Pählson.
H. M. Corvette Balder					Capt. A. C. Schonmeyr
Saga, N. 38° 07′, W. 20° 10′				Misty	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.88	733.5	30.26	768.6	69.1	20.6	52	NNE			2		2			0.047	1.2	Clear.	The Observatory.
Zurich	28.69	728.8	30.26	768.7	75.0	23.9	51	W			2		4			0	0	Lightly cld'y	The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +6.4 mm.; Thermometer, —1.2 Cent. Relative Humidity, —2 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.59	751.6	88.0	31.1	40	WSW	6	2.5			8		SW	0	0		The Observatory.
Fao, Persian Gulf																			
Valona			29.91	759.6	70.2	21.2		N			6		10			1.18	30.	Covered	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y			29.78	756.3	81.1	27.3	72	NW			1		0			0	0		Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					65.0	18.3		Calm	0	0			7ks			0	0	Fair	Hon. J. Ferguson.
Chatham, N. B.	29.75	755.6	29.81	757.2	65.2	18.4	84	Calm	0	0		6k	1ks	W		0	0	Fair	G. A. Blair.
Charlottetown, P. E. Island	29.79	756.7	29.83	757.7	65.1	18.4	83	S	5	2.2		1c	9s			0	0	Fair	H. J. Cundall, C. E.
Cornwall, Ontario	29.48	748.8	29.66	753.4	67.7	19.8	98	E			1		10n			0.507	12.88	Cloudy	James Smith, M. A.
Dalhousie, N. B.	29.63	752.6	29.79	756.7	62.5	16.9	73	N			1		9s			0	0	Cloudy	H. A. Johnson.
Father Point, Quebec	29.76	755.9	29.78	756.4	69.6	20.9	68	SW	5	2.2		0	8ks			0	0	Fair	J. McWilliams.
Fredericton, N. B.	29.77	756.1	29.84	757.9	66.8	19.3	80	Calm	0	0			10s			0	0	Cloudy	Prof. Harrison.
Fort Garry, Manitoba	29.02	737.1	29.82	757.4	58.7	14.8	86	NW	6	2.7		1c	Haze	NW		0	0	Hazy	James Stewart.
Granton, Ontario	28.61	726.7	29.65	753.1	70.0	21.1	100	SW			2		10n			0.30	7.6	Cloudy	James Grant.
Halifax, N. S.	29.77	756.1	29.90	759.4	67.7	19.8	80	SE	3	1.3		7cs	0			0	0	Cloudy	A. Allison.
Hamilton, Ontario	29.31	744.5	29.68	753.9	73.7	23.2	91	SW			2	10cs	0	SW		0.43	10.9	Cloudy	Geo. Dickson, B. A.
Heart's Content, N. F.																			E. Weedon.
Kingston, Ontario	29.40	746.7	29.72	754.9	69.9	21.1	85	SW	6	2.7			10ks			0.13	3.3	Cloudy	S. Woods, M. A.
Little Glace Bay, N. S.	29.87	758.7	29.91	759.7	67.6	14.2	84	S	4	1.8		5c	0	SW		0	0	Fair	C. H. Rigby.
Montreal, Quebec	29.54	750.3	29.73	755.1	66.9	19.4	89	S	6	2.7			10n			0.16	4.1	Light rain	C. H. McLeod, C. E.
Moose Factory, Ontario	29.68	753.9	29.72	754.9	65.0	18.3	77	W			1	5ck	4n			0	0	Cloudy	J. R. Nason.
Norwood, Ontario	29.00	736.6	29.66	753.4	72.8	22.7	78	SW	4	1.8			9s			0.02	0.5	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	28.96	735.6	29.61	752.1	69.2	20.7	92	S	10	4.5			10n			0	0	Cloudy	Rev. R. Mosley.
Peterboro, Ontario	28.98	736.1	29.68	753.9	76.7	24.8	77	SW			1	0	8ks			0	0	Fair	J. F. Jeffers, M. A.
Port Dover, Ontario	29.04	737.6	29.70	754.4	68.1	20.1	100	S	5	2.2		10k	0	S		0.02	0.5	Cloudy	H. Morgan.
Port Stanley, Ontario	29.08	738.6	29.69	754.1	68.5	20.3	98	SW	4	1.8			Fog			1.16	29.5	Foggy	M. Payne.
Quebec, Quebec	29.44	747.8	29.75	755.6	70.0	21.1	80	W			1	7k	1s	W		0	0	Fair	Capt. Ashe, R. N.
Rockliffe, Ontario	29.21	741.9	29.65	753.1	65.0	18.3	89	Calm	0	0			10s			0	0	Cloudy	W. H. McIntyre.
St. John, N. B.	29.70	754.4	29.87	758.7	60.0	15.6	82	S	3	1.3		10ck	0			0	0	Cloudy	G. Murdock, C. E.
Saugeen, Ontario	28.94	735.1	29.62	752.3	69.2	20.7	96	S	7	3.1			10ks			Inap.	Inap.	Light rain	K. Stewart.
Stratford, Ontario	28.42	721.9	29.63	752.6	69.8	21.0	93	SW	8	3.6			10n			1.248	31.70	Cloudy	C. J. MacGregor, M. A.
Sydney, C. B.	29.86	758.4	29.90	759.4	67.3	19.6	65	Calm	0	0		9c	0	NW		0	0	Fair	T. C. Hill, C. E.
Toronto, Ontario	29.33	745.0	29.69	754.1	70.5	21.4	89	S	12	5.4			10ks			1.24	31.5	Cloudy	Magnetic Observatory.
Windsor, N. S.																			Prof. John E. Oram, M. A
Woodstock, Ontario	28.62	726.9	29.63	752.6	71.5	21.9	93	S	13	5.8			10s			0.13	3.3	Cloudy	Professor Wolverton.
Yarmouth, N. S.	29.82	757.4	29.88	758.9	65.1	18.4	76	SW	3	1.3		9k	0	SW		0	0	Cloudy	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.69	754.1	29.94	760.5	54	12.2	93	S				10k	10s			0.32	8.1	Cloudy	John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.80	756.9	59.0	15.0		SW			2					0	0		The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the **SECRETARY OF WAR.**

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 1-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.72	754.9	29.80	756.9	81	27.2	67	S	7	3.1		2k	0	W		0	0	Fair	
Alpena, Michigan	28.94	735.1	29.55	750.6	67	19.4	95	S	2	0.9			10s		SW	0.55	14.0	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.98	736.1	30.06	763.5	80	26.7	61	SW	10	4.5		0	0			0	0	Clear	
Atlantic City, New Jersey	29.89	759.2	29.90	759.4	79	26.1	82	W	4	1.8		5k	0	NW		0.58	22.4	Fair	
Augusta, Georgia	29.92	760.0	30.12	765.0	81	27.2	67	S			1	2ck	Haze	S	Calm	0	0	Fair	
Baltimore, Maryland	29.88	758.9	29.93	760.2	81	27.2	63	W	4	1.8		8cs	0	Calm		0.01	0.3	Fair	
Barnegat, New Jersey	29.86	758.4	29.88	758.9	85	29.4	64	W	9	4.0		8c;ck	0	W;SW		0	0	Fair	
Bismarck, Dakota	28.21	716.5	30.06	763.5	53	11.7	79	NW	10	4.5		0	0			0	0	Clear	
Boerne, Texas	28.51	724.1	29.76	755.9	75	23.9	86	SW	12	5.4			10ks		SW	0	0	Cloudy	
Boise City, Idaho	27.25	692.1	30.20	767.1	58	14.4	48	SW	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.69	754.1	29.84	757.9	78	25.6	73	S	4	1.8		5ck	2s	SW	Calm	0	0	Fair	
Brackettville, Texas	28.77	730.7	29.79	756.1	77	25.0	77	SE	11	4.9		0	8s		S	0	0	Cloudy	
Breckenridge, Minnesota	28.87	733.3	29.84	757.9	56	13.3	81	Calm	0	0		5k	0	W		0	0	Fair	
Brownsville, Texas	29.90	759.4	29.94	760.5	82	27.5	79	SE	8	3.6		8cs	0	Calm		0	0	Fair	
Buffalo, New York	29.04	737.6	29.68	753.9	74	23.3	86	SW	8	3.6			10s		SW	0.34	8.6	Cloudy	
Burkes, Arizona					68	20.0	42	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.47	748.5	29.74	755.4	74	23.3	72	SW	3	1.3		2ck	8s	W	SW	0.02	0.5	Cloudy	
Cairo, Illinois	29.62	752.3	29.99	761.7	74	23.3	90	SW	13	5.8			10s		SW	0.06	1.5	Threatening	
Campo, California	27.39	695.7	29.96	761.0	41	5.0	82	S	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.04	763.0	30.05	763.3	81	27.2	87	SW	13	5.8		0	0			0	0	Clear	
Cape Henry, Virginia	29.96	761.0	29.98	761.5	80	26.7	70	SW	14	6.3		5cs	0	Calm		0	0	Fair	
Cape Lookout, N. Carolina	30.04	763.0	30.06	763.5	81	27.2	87	SW	15	6.7		5c	Haze	W	Calm	0	0	Fair	
Cape May, New Jersey	29.88	758.9	29.91	759.7	78	25.6	77	W	12	5.4		2c	0	SW		0	0	Fair	
Castroville, Texas	29.16	740.7	29.83	757.7	79	26.1	74	SE	8	3.6			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.15	765.8	30.18	766.6	83	28.3	71	NW	6	2.7		5cs	0	Calm		0	0	Fair	
Charleston, South Carolina	30.04	763.0	30.09	764.3	85	29.4	64	W	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.19	741.4	29.96	761.0	81	27.2	63	SW	6	2.7		5c	Haze	Calm	Calm	0.02	0.5	Fair	
Chattanooga, Tennessee	29.28	743.7	30.05	763.3	77	25.0	77	SW	16	7.2		0	2ks		SW	0.04	1.0	Fair	
Cheyenne, Wyoming	24.24	615.7	30.18	766.6	40	4.4	82	NW	2	0.9		5k	0	NW		0	0	Fair	
Chicago, Illinois	29.04	737.6	29.68	753.9	68	20.0	84	W	9	4.0			10ks		SW	0.14	3.6	Cloudy	
Chincoteague, Virginia	29.94	760.5	29.96	761.0	81	27.2	78	W	20	8.9		8cs	0	W		0	0	Cloudy	
Cincinnati, Ohio	29.23	742.4	29.84	757.9	75	23.9	77	SW	13	5.8			10ks		SW	0.07	1.8	Cloudy	
Cleveland, Ohio	29.02	737.1	29.70	754.4	75	23.9	77	S	18	8.0		1c	2ks	SW	SW	0.31	7.9	Fair	
Coleman City, Texas	28.30	718.8	29.94	760.5	63	17.2	100	NE	12	5.4			10n		Calm	1.40	35.6	Heavy rain.	
Columbus, Ohio	28.97	735.8	29.70	755.6	74	23.3	81	S	7	3.1			10ks		SW	0.06	1.5	Cloudy	
Concho, Texas	28.14	714.7	29.78	756.4	64	17.8	94	NE	32	14.3			10n		NE	0.02	0.5	Light rain	
Corsicana, Texas	29.55	750.6	30.00	762.0	76	24.4	91	SE	4	1.8			10ks		Calm	0.50	12.7	Cloudy	
Davenport, Iowa	29.17	740.9	29.78	756.4	66	18.9	74	NW	13	5.8		10cs	0	W		0.17	4.3	Cloudy	
Dayton, Washington T'y					53	11.7	54	NE			1	0	0			0	0	Clear	
Deadwood, Dakota	25.54	648.7			43	6.1	83	Calm	0	0		0	0			0.38	9.7	Clear	
Decatur, Texas	28.87	733.3	30.00	762.0	68	20.0	84	NE	4	1.8			10n		NE	1.42	36.1	Heavy rain.	
Delaware Breakwater, Del.	29.92	760.0	29.94	760.5	80	26.7	74	W	12	5.4		5c	0	W		0	0	Fair	
Denison, Texas	29.19	741.4	29.96	761.0	67	19.4	95	NE	2	0.9			10n		NE	0.12	3.0	Heavy rain.	
Denver, Colorado	25.00	635.0	30.22	767.6	50	10.0	79	S	2	0.9			10s		Calm	0.05	1.3	Cloudy	
Des Moines, Iowa	29.04	737.6	29.90	759.4	62	16.7	72	NW	8	3.6		0	0			0.14	3.6	Clear	
Detroit, Michigan	28.99	736.3	29.62	752.3	69	20.6	95	SW	4	1.8			10n		SW	0.62	15.7	Heavy rain.	
Dodge City, Kansas	27.56	700.0	29.85	758.2	52	11.1	86	N	12	5.4		5cs	5s	N	Calm	0.08	2.0	Cloudy	
Dubuque, Iowa	29.09	738.9	29.76	755.9	63	17.2	78	W	9	4.0		8k	0	W		0.25	6.3	Fair	
Duluth, Minnesota	29.08	738.6	29.74	755.4	59	15.0	88	NW	16	7.2		10cs	0	Calm		Inap.	Inap.	Cloudy	
Eagle Pass, Texas	29.09	738.9	29.78	756.4	80	26.7	59	SE	8	3.6		0	0			0	0	Clear	
Eastport, Maine	29.75	755.6	29.82	757.4	57	13.9	81	S	8	3.6			10s		Calm	0	0	Cloudy	
Edinburg, Texas					80	26.7	87	SE			1	5c	0	Calm		0	0	Fair	
El Paso, Texas	26.15	664.2			75	23.9	19	NW	6	2.7		0	0			0	0	Clear	
Erie, Pennsylvania	29.04	737.6	29.80	756.9	77	25.0	73	S	14	6.3		8ck	0	W		0.45	11.4	Fair	
Escanaba, Michigan	28.97	735.8	29.59	751.6	64	17.8	89	N	6	2.7			10s		N	0.12	3.0	Cloudy	
Florence, Arizona	28.41	721.6	30.01	762.2	67	19.4	42	N	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.09	637.3	30.54	775.7	50	10.0	45	SE	6	2.7		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	28.04	712.2	29.85	758.2	52	11.1	79	W	10	4.5		0	2s		W	0.07	1.8	Clear	
Fort Custer, Montana	27.02	686.3			56	13.3	68	W	4	1.8		0	0			0	0	Clear	
Fort Davis, Texas	25.19	639.8	30.15	765.8	72	22.2	46	SW	1	0.4		0	0			0	0	Clear	
Fort Elliot, Texas	27.00	685.8	29.18	741.1	58	14.4	82	NE	20	8.9			10s		NE	0.80	20.8	Cloudy	
Fort Gibson, Indian Ter.	29.48	747.5	29.95	760.7	68	20.0	95	SW	4	1.8			10s		W	0.72	18.3	Cloudy	
Fort Grant, Arizona	25.25	641.3	30.05	763.3	70	21.1	13	NE	4	1.8		0	0			0	0	Clear	
Fort Griffin, Texas	28.76	730.5	30.01	762.2	65	18.3	94	E	6	2.7			10n		Calm	0.23	5.8	Light rain	
Fort Keogh, Montana	27.42	696.5			54	12.2	53	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.78	705.6	29.80	751.8	76	24.4	69	NE	12	5.4			10s		NE	0	0	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.81	731.8	29.88	758.9	66	18.9	95	N	4	1.8			10s		Calm	1.21	30.7	Cloudy	
Fort Stevenson, Dakota	28.19	716.0			52	11.1	79	NW	12	5.4		2k	0	W		0.01	0.3	Fair	
Fort Verde, Arizona					57	13.9	25	SW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	82	27.8	75	S	15	6.7		2ck	2ks	SW	S	Inap.	Inap.	Fair	
Grand Haven, Michigan	29.01	736.8	29.62	752.3	72	22.2	76	SW	8	3.6		5k	0	SW		0.04	1.0	Fair	
Helena, Montana																			
Henrietta, Texas																			
Indianapolis, Indiana	29.05	737.9	29.78	756.4	72	22.2	85	SW	6	2.7			10ks		SW	1.25	31.7	Cloudy	
Indianola, Texas	29.97	761.2	30.00	762.0	81	27.2	78	S	14	6.3		5k	0	S		0	0	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.14	765.5	30.17	766.3	85	29.4	64	SW	4	1.8		0	0			0	0	Clear	
Keokuk, Iowa	29.23	742.4	29.82	757.4	65	18.3	84	NW	8	3.6			10s		NW	0	0	Cloudy	
Key West, Florida	30.14	765.5	30.17	766.3	83	28.3	75	E	8	3.6		2k	0	E		0	0	Fair	
Kittyhawk, North Carolina	30.02	762.5	30.04	763.0	81	27.2	74	W	13	5.8		2c	0	W		0	0	Clear	
Knoxville, Tennessee	29.08	738.6	30.04	763.0	71.6	21.9	83	SW	11	4.9		5cs	1ks	W	Calm	0.08	2.0	Fair	
La Crosse, Wisconsin	29.04	737.6	29.74	755.4	65	18.3	68	N	12	5.4			10s		N	0.66	16.8	Cloudy	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	60	15.6	20	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.46	748.0	29.78	756.4	82	27.8	63	SE	8	3.6		0	0			0	0	Clear	
Leavenworth, Kansas	29.14	740.1	29.96	761.0	60	15.6	77	NW	12	5.4		0	7s		NW	0.07	1.8	Fair	
Lewiston, Idaho	29.23	742.9	29.89	759.2	57	13.9	57	NE	1	0.4		0	0			0	0	Clear	
Little Rock, Arkansas	29.66	753.4	29.98	761.5	72	22.2	100	S	3	1.3			10s		Calm	0.31	7.9	Cloudy	
Los Angeles, California	29.64	752.8	29.97	761.2	59	15.0	88	S	3	1.3			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.31	745.2	29.88	758.9	71	21.7	90	SW	12	5.4			10n		Calm	0.02	0.5	Light rain	
Lynchburg, Virginia	29.28	743.7	29.92	760.0	80	26.7	66	SW	3	1.3		5c	0	Calm		1.00	25.4	Fair	
Madison, Wisconsin	28.72	729.5	29.66	753.4	62	16.7	89	NW	18	8.0			10n		Calm	0.18	4.6	Light rain	
Marquette, Michigan	28.95	735.3	29.62	752.3	61	16.1	77	NW	8	3.6			10s		NW	0.76	19.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.34	719.8	30.02	762.5	78	25.6	78	NE	6	2.7			10ks		SE	0	0	Cloudy	
Memphis, Tennessee	29.71	754.6	30.03	762.7	73	22.8	95	SW	8	3.6			10s		SW	0.47	11.9	Cloudy	
Milwaukee, Wisconsin	28.94	735.1	29.63	752.6	68	20.0	90	SW	13	5.8			10s		SW	0.13	3.3	Cloudy	
Mobile, Alabama	30.12	765.0	30.16	766.1	82	27.8	82	S	3	1.3		0	0			0	0	Clear	
Montgomery, Alabama	29.93	760.2	30.16	766.1	78	25.6	86	SW	6	2.7			10ks		SW	0	0	Cloudy	
Morgantown, West Virginia	28.91	734.3	29.83	757.7	81	27.2	67	SW	11	4.9		5cs	2ks	SW	SW	0.24	6.1	Fair	
Mt Washington, N. H.	23.83	605.3	30.19	766.8	54	12.2	93	NW	30	13.4			Fog		NW	0	0	Foggy	
Nashville, Tennessee	29.51	749.5	30.02	762.5	72	22.2	85	SW	9	4.0			10n		SW	0.35	8.9	Light rain	
New Haven, Connecticut	29.74	755.4	29.84	757.9	78	25.6	78	S	4	1.8		0	5s;fg		S	0	0	Fair	
New London, Connecticut	29.80	756.9	29.85	758.2	75	23.9	77	W	3	1.3			Fog		Calm	0	0	Foggy	
New Orleans, Louisiana	30.08	764.0	30.13	765.3	79	26.1	82	Calm	0	0		0	8s		W	0.04	1.0	Fair	
Newport, Rhode Island	29.81	757.2	29.86	758.4	74	23.3	83	SE	6	2.7		5k	0	NE		0	0	Fair	
New River, North Carolina																			
New York, New York	29.70	754.4	29.87	758.7	76	24.4	81	SW	5	2.2		3c;cs	0	Calm		0	0	Fair	
Norfolk, Virginia	29.94	760.5	30.00	762.0	85	29.4	61	SW	10	4.5		0	Sm'e		SW	0.03	0.8	Clear	
North Platte, Nebraska	27.26	692.4	29.86	758.4	47	8.3	88	W	8	3.6		2k	0	W		0	0	Clear	
Olympia, Washington Ter.	29.88	758.9	29.92	760.0	58.0	14.4	94	NE	1	0.4		0	0			0	0	Clear	
Omaha, Nebraska	28.89	733.8	29.97	761.2	59	15.0	70	NW	14	6.3		0	1s		Calm	0.02	0.5	Clear	
Oswego, New York	29.46	748.3	29.76	755.9	77	25.0	73	SW	6	2.7		0	8ks		W	0.17	4.3	Fair	
Pembina, Dakota	29.00	736.6	29.80	756.9	56	13.3	84	NW	6	2.7		2k	0	NW		0	0	Clear	
Pensacola, Florida	30.14	765.5	30.17	766.3	82	27.8	79	S	9	4.0		1ck	0	S		0	0	Clear	
Philadelphia, Pennsylvania	29.86	758.4	29.90	759.4	79	26.1	66	W	8	3.6		5c	Sm'e	Calm	Calm	0	0	Fair	
Phœnix, Arizona	28.71	729.2	30.39	771.9	86	30.0	42	E	3	1.3		0	0			0	0	Clear	
Pike's Peak, Colorado	17.95	455.9	30.16	766.1	31	− 0.6	58	NW	14	6.3		0	0			0.02	0.5	Clear	
Pilot Point, Texas	29.23	742.4	30.05	763.3	66	18.9	100	E	5	2.2			10n		Calm	0.66	16.8	Heavy rain	
Pioche, Nevada	24.12	612.6	29.89	759.2	64	17.8	21	W	5	2.2		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.05	737.9	29.81	757.2	75	23.9	86	SW	14	6.3		8k;cs	0	SW		0.09	2.3	Clearing	
Port Huron, Michigan	28.99	736.3	29.61	752.1	68	20.0	95	S	12	5.4			10n		Calm	0.19	4.8	Light rain	
Portland, Maine	29.76	755.9	29.81	757.2	69	20.6	75	Calm	0	0		5k	5s	Calm	Calm	0	0	Cloudy	
Portland, Oregon	29.84	757.9	29.92	760.0	60.5	15.8	80	S	2	0.9		0	0			0	0	Clear	
Portsmouth, North Carolina																			
Prescott, Arizona	24.83	630.7	30.19	766.8	55	12.8	33	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.16	766.1	30.17	766.3	82	27.8	79	NE	5	2.2		8c	0	Calm		0.08	2.0	Fair	
Red Bluff, California																			
Rio Grande City, Texas	29.73	755.1	29.94	760.5	79	26.1	82	SE	15	6.7		0	2s		S	0	0	Clear	
Rochester, New York	29.13	739.9	29.71	754.6	75	23.9	81	SW	8	3.6		5k	0	W		0.25	6.3	Fair	
Roseburg, Oregon	29.39	746.5	29.95	760.7	58	14.4	88	Calm	0	0		2ck	0	SW		0	0	Clear	
Sacramento, California	29.85	758.2	29.93	760.2	54	12.2	87	S	9	4.0		0	Fog			0	0	Clear	
St. Louis, Missouri	29.33	745.0	29.88	758.9	69	20.6	90	SW	11	4.9		0	3ks		SW	1.04	26.4	Fair	
St. Paul, Minnesota	28.97	735.8	29.77	756.1	61	16.1	77	NW	7	3.1			10ks		NW	0.19	4.8	Cloudy	
Salt Lake City, Utah	25.69	652.5	30.02	762.5	65	18.3	26	NE	2	0.9		0	0			0	0	Clear	
San Antonio, Texas	29.27	743.4	29.94	760.5	81	27.2	70	S	10	4.5			10s		S	0.03	0.8	Cloudy	
San Diego, California	29.95	760.7	30.02	762.5	59	15.0	88	NW	2	0.9			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.03	737.3	29.66	753.4	76	24.4	73	S	23	10.3		2c	0	SW		0.01	1.0	Fair	
Sandy Hook, New Jersey	29.83	757.7	29.86	758.4	84	28.9	64	SW	15	6.7		2c	0	Calm		0	0	Fair	
San Francisco, California	29.97	761.2	30.04	763.0	51	10.1	93	W	6	2.7			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.33	592.6	29.77	756.1	59	15.0	22	NE	3	1.3		1k	0	NE		0	0	Clear	
Savannah, Georgia	30.04	763.0	30.12	765.0	88	31.1	62	SW	8	3.6		1cs	Haze	Calm	Calm	0	0	Clear	
Shreveport, Louisiana	29.80	756.9	30.01	762.2	77	25.0	86	Calm	0	0		0	5s		Calm	0.24	6.1	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.07	763.8	30.10	764.5	82	27.8	83	SW	8	3.6		1k	0	SW		0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.20	741.7	29.84	757.9	69.5	20.8	87	W	12	5.4			10s		W	0.20	5.1	Cloudy	
Springfield, Massachusetts	29.70	754.4	29.83	757.7	75	23.9	81	S	5	2.2		0	8s		S	0	0	Cloudy	
Stockton, Texas	26.81	681.7	29.84	757.9	73	22.8	67	S	8	3.6		0	1s		Calm	0	0	Fair	
Thatcher's Island, Mass.	29.78	756.4	29.83	757.7	75	23.9	77	SW	10	4.5		0	0			0	0	Clear	
Toledo, Ohio	29.03	737.3	29.67	753.6	73	22.8	85	SW	20	8.9			10ks		SW	1.30	33.0	Threatening	
Tucson, Arizona	27.50	698.5	30.04	763.0	78	25.6	22	SE	3	1.3		0	0			0	0	Clear	
Umatilla, Oregon	29.64	752.8	30.12	765.0	62.5	16.9	51	SE	3	1.3		0	0			0	0	Clear	
Uvalde, Texas	29.02	737.1	29.80	756.9	79	26.1	78	SE	7	3.1			10s		SE	0	0	Cloudy	
Vicksburg, Mississippi	29.86	758.2	30.10	764.5	77	25.0	91	S	8	3.6		2ck	5s	W	SW	0.48	12.2	Fair	
Virginia City, Montana	24.45	621.0	29.93	760.2	44	6.7	60	SE	4	1.8		0	0			0	0	Clear	
Visalia, California	29.51	749.5	29.87	758.7	64	17.8	73	NW	3	1.3		0	0			0	0	Clear	
Washington, D. C.	29.82	757.4	29.93	760.2	81	27.2	67	S	6	2.7		5cs	0	W		Inap.	Inap.	Fair	
Wickenburg, Arizona					67	19.4	29	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.00	762.0	30.08	764.0	85	29.4	64	W	8	3.6		0	0			0	0	Clear	
Winnemucca, Nevada	25.67	652.0	30.03	762.7	52	11.1	29	N	12	5.4		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.82	757.4	29.86	758.4	76	24.4	82	S	10	4.5		5ck	0	SW		0	0	Fair	
Yankton, Dakota	28.76	730.5	30.02	762.5	62	16.7	61	W	6	2.7		0	0			0.10	2.5	Clear	
Yuma, Arizona	29.67	753.6	29.81	757.2	69	20.6	70	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogota, U. S. Colombia	22.04	559.8			54.5	12.5	79	Calm	0	0			10n			0.12	3.0	Cloudy	Thomas Herran.
§ Havana, Cuba, W. I.	30.11	764.8	30.16	766.1	81	27.2	78	SE	1.2	0.5		4c	0	Calm		0	0	Fair	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I.	30.05	763.3	30.06	763.5	78.2	25.7	83	Calm	0	0		0	0			0	0	Fine	Maxwell Hall.
Navassa, W. I.	29.95	760.7	30.03	762.7	81	27.2	78	NE	2	0.9		5ck	5s	E	NE	Inap.	Inap.	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.03	762.7	30.03	762.7	79	26.1	87	SE			2	3c	8s	SE		0	0	Fair	C. J. Hering.
Puerto Berrio, U.S. Col'bia ‖	29.47	748.5	30.03	762.7	76	24.4	94	Calm			0		10ks			0.85	21.6		Francesco J. Cisneros.
§ Rivas, Nicaragua					73	23		NNE					8k		NNE	0	0	Covered	Earl Flint.
Santiago de Cuba, W. I.	30.08	764.0	30.10	764.5	81	27.2	78	N	8.4	3.8		8c	0			0.91	23.1		Robert Mason
St. Thomas, W. I.																			G. O. Gyllich.
York Factory, B. A.	29.81	757.2	29.86	758.4	44.0	6.7	96	NW	10	4.5		1c	0	NW		0	0	Fair	J. Fortescue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Bracketville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472(?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,156.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,696 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,056 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; La Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the **SECRETARY OF THE NAVY.**

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

Stations and Vessels.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.21	767.3	80	26.7	87	SW	5	2.2			8d		SW					Fair	
Navy Yard, Portsmouth, N. H.	29.87	758.7	71	21.7	80	S	5	2.2			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.83	757.7	71.5	21.9	95	Calm			0		2s;hz		WNW	0	0			Fair	
§ Adams, Chimbote, Peru	30.07	763.8	67	19.4	84	NE			0-1		10		NE					Cloudy	
§ Alaska, S 16° 51′, W. 73° 27′ *	29.97	761.2	62	16.7	83	SE			3		10					Long	SW	Cloudy	
§ Alert, N. 28° 22′, E. 140° 32′	29.81	757.2	78	25.6	78	Calm			0		8		Calm	0	0	Smooth		Cloudy	
§ Alliance, Virgin Rocks, N. 46° 25′, W. 50° 50′	29.82	757.4	47	8.3	92	E			2		10		Calm	0	0	Smooth	E	Cloudy	
§ Ashuelot, Kobe, Japan	29.88	758.9	69	20.6	85	NE			1		10		NE			None		Cloudy	
§ Colorado, New York, N. Y.	29.86	758.4	75	23.9	86	SW	2	0.9			8		Calm					Cloudy	
§ Constellation, Navy Yard, Brooklyn, N. Y.	29.77	756.1	77	25.0	82	SW			2		2		SW					Fair	
§ Constitution, Navy Yard, Brooklyn, N. Y.	29.86	758.4	78	25.6	78	WSW	2	0.9			2		Calm					Clear	
§ Franklin, Off Navy Yard, Norfolk, Va	29.98	761.5	79	26.1	78	SW	8	3.6			2		SW	0.2	5.			Fair	
§ Independence, Mare I'd, Navy Yard, Cal	30.00	762.0	52	11.1	??	SW	2.4	1.1			10		SW	0	0			Overcast	
§ Jamestown, Sitka, Alaska *	30.12	765.0	51	10.6	93	N			1		10					Smooth		Foggy	
§ Kearsarge, Boston, Mass	29.86	758.4	76	24.4	73	SE			1		5					Smooth		Hazy	
§ Lackawana, N. 3° 31′, W. 79° 51′ †	30.10	764.5	78	25.6	91	SW			2		8		SW			Smooth	SW	Fair	
§ Marion, S 37° 00′, W. 55° 28′	30.19	766.8	49	9.4	78	SSE			5		10		S	0	0	Mod'ate	S	Cloudy	
§ Michigan, Erie, Pa.	29.68	753.9	75	23.9	81	S			4		2		S					Clear	
§ Minnesota, Poughkeepsie, N. Y. *	29.85	758.2	77	25.0	86	SSE			1		8		SSE					Cloudy	
§ Monocacy, Chefoo, China	29.59	751.6	64	17.8	100	NW			2-3		10					Long	NE	Foggy	
§ New Hampshire, Port Royal, S. C.	30.14	765.5	81	27.2	78	SW	5	2.2			5?		Calm	0	0			Cloudy?	
Nipsic, Alexandria, Egypt	29.80	756.9	82	27.8	67	NNW			3		0							Hazy	
§ Onward, Chimbote, Peru †	30.03	762.7	67	19.4	74	Calm			0		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.71	754.6	80	26.7	82	SE			2		2							Clear	
§ Passaic, Washington, D. C.	29.94	760.5	78	25.6	91	SW			1		5			0	0			Fair	
§ Pensacola, Vallejo, Cal.	29.95	760.7	54	12.2	87	WSW			3		10		WSW			Smooth		Overcast	
§ Portsmouth, N. 37° 38′, W. 39° 59′	30.01	762.2	69	20.6	75	WSW			2		8		WSW			Mod'ate	W	Cloudy	
§ Powhatan, New York, N. Y.	29.88	758.9	78	25.6	82	WSW			2		2							Clear	
§ Quinnebaug, Stockholm, Sweden	29.91	759.7	60	15.6	94	SSE			3		8		Calm			Smooth		Fair	
§ Richmond, Kobe, Japan	29.87	758.7	67	19.4	100	S			1		2?			0	0	Smooth		Cloudy?	
§ Saratoga Naples, Italy	29.99	761.7	80	26.7	27	N			6		5		N	Light	Light			Hazy	
§ Shenandoah, Buenos Ayres, Argentine Republic	30.29	769.4	50	10.0	72	S			6		10					Rough	S	Cloudy	
§ St. Louis, League Island, Pa.	29.91	759.7	78	25.6	86	WSW	10	4.5			2		NW	0	0			Fair	
Swatara, Amoy, China			81	27.2	87	S			2		10		S			Smooth		Cloudy	
§ Tennessee, New York, N. Y.	29.89	759.2	87	30.6	62	WSW			6		2		Calm	0	0			Clear	
§ Ticonderoga, Nagasaki, Japan	29.78	756.4	78	25.6	100	Calm			0		10		Calm			Smooth		Rainy	
§ Trenton, N. 49° 19′, W. 6° 16′	30.33	770.4	65	18.3	68	SSW			3		10			0	0	None		Cloudy	
§ Vandalia, Boston, Mass.			70	21.1	100	WSW			1		2		W					Fair	
§ Wabash, Boston, Mass.	29.87	758.7	75	23.9	81	SSW	4	1.8			8			0	0			Cloudy	
§ Wachusett, Coquimbo, Chili	30.23	767.8	58	14.4	94	ENE			1		5		E			Smooth	E	Fair	
Wyoming, N. 37° 54′, W. 14° 20′	30.17	766.3	63	17.2	89	NNW			4		5		N			Mod'ate	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 50° 08′, W. 40° 38′	29.88	758.9	53	11.7		NNW			2		10		WSW			Smooth	NE	Cloudy	
S. S. Moravian, J. Graham																			
S. S. Peruvian																			John France.
S. S. Sardinian, J. E. Dutton																			
S. S. Sarmatian, A. D. Air																			A. Christie & F. W. Erskine A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, jr
S. S. Indiana, R. W. Sargent N. 39° 40′, W. 68° 08′	29.94	760.5	69	20.6	75	WNW			4		4		WNW	0	0	Mod'ate	WNW	Fair	
S. S. Ohio, Henry Morrison N. 50° 15′, W. 13° 52′	30.20	767.1	65	18.3	94	SW			3		10		SW	3 h'rs	2 h'rs	Mod'ate	SW	Cloudy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 39° 07′, W. 64° 30′	29.97	761.2	60	15.6	82	Calm			0		10			0	0	Smooth	NW	Foggy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Rislus.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			
NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.																			
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley. Hong Kong, China	29.62	752.3	88	31.1	84	SE			3		10n		SW	Light	Light	Smooth		Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 42° 55′, W. 170° 55′ *	30.28	769.1	52	11.1	79	NW			3		9			0	0	Slight	NW	Overcast	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Otterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan. Astoria, Oregon †	29.88	757.7	50	10.0	96	SSE			4		Fog		SSE			Smooth		Fair	J. M. Lachlan.
S. S. Oregon, E. Polemann																			L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander N. 36° 04′, W. 121° 42′ †	30.04	763.0	52	11.1		NW			4	Fog						Mod'ate	NW	Foggy	
S. S. Orizaba, C. B. Johnson, N. 35° 15′, W. 120° 46′ †	29.96	761.0	48	8.9		NW			2	Fog			NW	0	0	Smooth	NW	Foggy	Harrison & Marshall.
S. S. State of California, G. Debney, N. 43° 05′, W. 124° 30′ †	29.95	760.7	56	13.3		S			2	8			Calm			Smooth		Cloudy	
S. S. Victoria, H. M. Haywood, Nanaimo Harbor, Vancouver I'd †	30.01	762.2	54	12.2	100	WSW			3	2			SW					Fair	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Sea-swell. Character.	Direction from—	Weather.	Observer.
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§S. S. Alaska, D. S. Austin, Panama, Panama.....†	29.91	759.7	77	25.0	95	NW			2		8		NW			Smooth		Cloudy	F. A. Johnston.
§S. S. Australia, S. 10° 36′ W. 170° 22′....†	29.90	759.4				ENE			4		10					Mod'ate	E	Drizzling	Banneman.
§S. S. China, W. B. Seabury.																			
§S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§S. S. City of New York, W. B. Cobb, Sydney, N. S. W.....†	30.12	765.0	54	12.2	61	NW			2		0							Clear	W. H. Hawes.
§S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§S. S. City of Peking, G. G. Berry, N. 47° 36′, W. 166° 54′...†	30.13	765.3	46	7.8	92	SW			3		10		WSW	0	0	Smooth		Cloudy	
§S. S. City of Sidney, B.C. Dearborn.																			E. LeSack.
§S.S. City of Tokio, J. Maury																			F. S. Doane.
§S. S. Colima, R. R. Searle, Panama, Panama. ....†	29.96	761.0	80	26.7	100	NNW			1		10		NW	0.15	3.8			Cloudy	
§S.S. Dakota, H. G. Morse. Seattle, Washington Ty..†	29.95	760.7	58	14.4	82	Var.			1		0			0	0	None		Clear	
§S.S. Granada, J. M. Cavarly N. 17° 22′, W. 101° 50′...†	30.05	763.3	78	25.6	95	ESE			3		10m		ESE	Mod'ate	Mod'ate	Long	S	Sprinkling	C. T. Rode.
§S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.00	762.0	56	13.3		WNW			1		5?		WNW	0	0			Overcast?	E. Alexander.
§S.S. Zealandia, R. C. Ghest, Auckland, Victoria.....	29.79	756.7	60	15.6		N			2		2		N					Clear	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N 49° 18′ W. 33° 02′....†	29.90	759.5	58	14.4	88	Calm			0		10		W			Mod'ate	W	Drizzling	J. Jones.
S. S. Celtic. B. Gleadell..																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.13	765.3	85	29.4		W			1		1		Calm	0	0			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, Off Block Island, R. I...	29.87	758.7	72	22.2	76	SSE	7	3.1			Fog			0	0			Foggy	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 25° 30′, W. 34° 05′.....*†	30.28	769.1	78	25.6		NE			1		2		NE			Smooth	NW	Fair	B. F. Woodbury.
Schr. Delia Hodgkins, N. 57° 05′, W. 43° 34′.....†	29.81	757.2				E			4		10		E			Long	E	Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 28° 30′, W. 65° 48′ .....†	30.35	770.9	82	27.8		W			1		0			0	0	Long Swell	SE	Clear	
Iron Cross, W. Randall, N. 35° 25′, W. 70° 40′.....*	30.03	762.7	78.5	25.8	92	W			4		6		WNW	0	0	Mod'ate	W	Misty	W. Randall.
British Barque Ivigtut, Adam Smith N. 45° 15′, W. 52° 09′...,*	24.82	757.4				NE			2		8		SW			Smooth	W	Fair	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.86	758.4	62	16.7	94	Calm			0		2		N	0	0			Very fine	James S. Garvin.

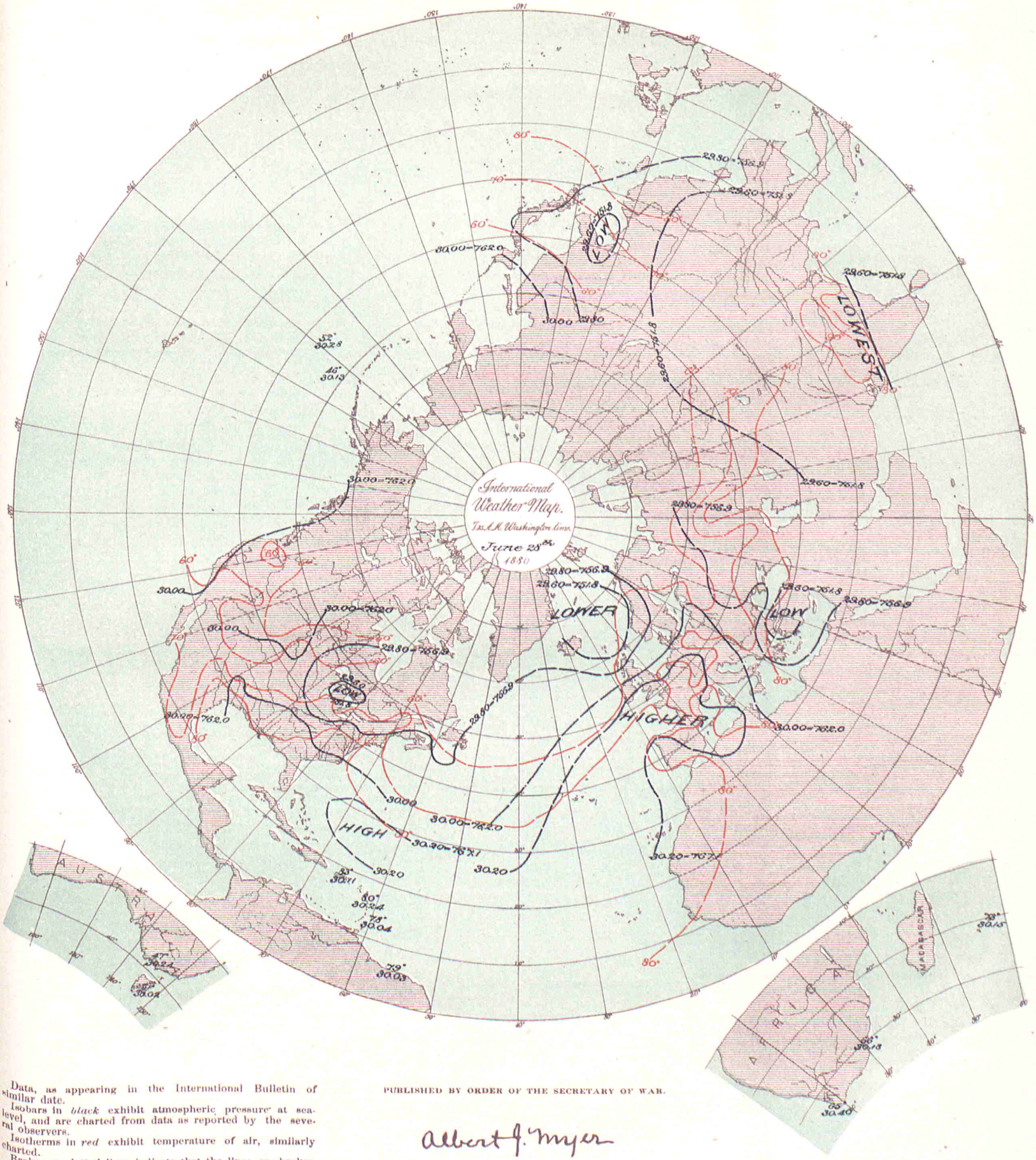
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co 211 Tremont St. Boston

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 29, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 1—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Mogador, Marocco																			Dr. Ollive.
Nemours			30.07	763.8	76.6	24.8	63	Calm			0		0			0	0	Clear.	Metge.
Algiers			30.05	763.2	77.0	25.0	56	NNW			2		0			0	0	Clear	Nicolas.
La Calle			30.03	762.8	71.4	21.9	72	NE			4		0			0	0	Clear.	Fonfrède.
Tunis			30.04	763.1															Jacques.
Sfax			30.17	766.2															Gau.
Saida			30.03	762.8															Charon.
Tebessa			30.05	763.3	80.6	27.0	19	NW			3		0			0	0	Clear.	Watrin.
Geriville			30.08	764.1	93.6	34.2	37	S			4		5			0	0	Cloudy	Lonchamp.
Laghouat			30.09	764.3	90.0	32.2	28	E			2		0			Inap.	Inap.	Clear.	Herlin.
Biskra			30.07	763.8	92.8	33.8	32	E			1		0			0	0	Clear	Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4.462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.49	749.1	30.02	762.6	72.5	22.5	47	E			3		5			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.24	742.6	29.99	761.7	64.4	18.0	84	WNW	7.2	3.2			10			0.039	1.0		Dr. Wierzbicki.
Eperies	29.05	737.9	29.90	759.4	70.3	21.3	56	NW			4		8ks			0	0		Julius Mikolik.
Gratz	28.82	732.1	30.04	762.9	68.0	20.0	67	NW			2		7			0	0		Andreas Rospini.
Hermannstadt	28.48	723.3	29.86	758.4	68.0	20.0	62	N			3		10			0	0		Prof. A. Gottschling.
Kremsmünster, Observatory	28.74	729.9	30.04	763.1	65.8	18.8	83	WNW			1		6			0.161	4.1		The Staff.
Lemberg	28.89	733.7	29.84	757.9	67.3	19.6	46	NW			3		7			0	0		Dr. T. Stanecki.
Pola	29.94	760 4	30.05	763.2	81.0	27.2	46	SSW			1		0			0	0		I.R. Hydrographic Office.
Szathmar	29.48	748.7	29.92	760.0	73.8	23.2	45	NW			3		5			0	0		Pet. Pancsics, S. J.
Szegedin	29.07	738.6	29.94	760.4	72.5	22.5	40	NE			1		5			0	0		Karl Stancel.
Trieste	29.96	761.0	30.07	763.6	77.2	25.1	64	W			1		4			0	0		P. Busin.
Vienna	29.34	745.2	30.09	764.2	68.7	20.4	71	W			3		5			0.354	9.0		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.89	759.1	30.08	764.1	65.8	18.8	68	W			2		8		WSW	0	0		Royal Observatory.
Furnes																			M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead o 1:6 p. m., local time.

This Paper is furnished by the Government of the United States, without charge, to the Co-operating Observers acting with the Signal Office in the collection of Simultaneous Reports.

Entered at the Post Office at Washington, D. C., as Second Class Matter. Printed January 4, 1881.

BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.68	753.9	29.78	756.4	55.2	12.9		E	12	5.4			9			0.730	18.54	Gloomy	W. Boswell.
Ardrossan	29.80	756.9	29.82	757.4	58	14.4		SW			4		8					Overcast	G. Carrick.
Armagh, (Observatory)	29.66	753.4	29.88	758.9	61.3	16.3		SW	11	4.9			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			29.97	761.2	66.5	19.2		SW	20	8.9			9					Overcast	John Hartnup.
Bolton (Sharples)	29.43	747.5	29.92	760.2	62.8	17.1		WSW	9	4.0			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.55	750.6	29.94	760.5	66.0	18.9	72	SW			2		10			0.01	0.3	Overcast	J. McLandsborough.
Bridgetown, Barbadoes	30.08	764.0	30.11	764.8	79	26.1		NE			2		6					Gloomy	Pvt. G. Surgener, A.H.C.
Cambridge (Observatory)	29.91	759.7	30.00	762.0	74.0	23.3		SW			1		1					Blue sky	H. Todd.
Cardington			30.00	762.0	76.0	24.4		W			1		1					Blue sky	John McLaren.
Chatham (School M. E.)	29.92	760.0	30.04	763.0	74.9	23.8		Calm			0		5k					D. clouds	Lance Crp'l Hocker, R.E.
Donaghadee	29.83	757.7	29.87	758.7	64	17.8		SW			3		10					Showery	J. Mac Gowan.
Dover	30.04	763.0	30.07	763.8	60	15.6		SW			2		7					Misty	J. Costello.
Falmouth (Observatory)	29.87	758.7	30.10	764.5	65.8	18.8		SW			1		1					D. clouds	The Staff.
Fort Napier, Natal	28.12	714.2	30.35	770.9	66.8	19.3		NE			1		0					Blue sky	Corp'l H. Coombs, A.H.C.
Free Town, Sierra Leone	29.68	753.9	29.91	759.7	83	28.3		W			1		10					D. clouds	
Galway (Queen's College)			29.88	758.9	58	14.4		SW			3		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	30.04	763.0	30.09	764.3	79.0	26.1		SW			3		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.60	751.8	29.80	756.9	61.9	16.6		SW			4		10					Overcast	D. G. Maclean.
Great Yarmouth	30.00	762.0	30.00	762.0	71	21.7		W			2		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.86	758.4	30.02	762.5	76.6	24.8		SW			1		1					Blue sky	The Staff, for G. B. Airy.
Guernsey	29.87	758.7	30.08	764.0	59.5	15.3		NE			2		0					Blue sky	Dr. S. E. Hoskins, F.R.S.
Helston	30.31	769.9	30.43	772.9	67	19.4		SW			4	ck				0	0	Fine	M. P. Moyle.
Holyhead	29.96	761.0	29.99	761.7	61	16.1		SSW			4		10					Overcast	John Tilston.
Jersey	29.84	757.9	30.12	765.0	71.0	21.7		E			1	2c						D. clouds	J. Fisher.
Kew (Observatory)	30.00	762.0	30.03	762.7	71.0	21.7		SW	12	5.4			3					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.72	754.9	29.96	761.0	71.4	21.9		SW			1		1					Blue sky	Wm. J. Harrison, F.G.S.
Malta, Mediterranean	29.88	758.9	29.95	760.7	76.8	24.9		N			2		1					Blue sky	A. King.
Nairn	29.65	753.1	29.74	755.4	63	17.2		Calm			0		5					½ clouded	W. D. Penny.
Nassau, Bahamas			30.14	765.5	86.0	30.0		SE			1		5					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.80	756.9	29.98	761.5	76.5	24.7		WSW			2	2c		W		0	0	Blue sky	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.48	748.8	29.98	761.5	71.7	22.1		SW			5		2					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.82	757.4	30.07	763.8	65	18.3		SW			2		5					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	30.02	762.5	30.09	764.3	65.5	18.6		S			3		0					Blue sky	John Merrifield.
*Roche's Point	29.94	760.5	30.06	763.5	64	17.2		WSW			4		10					Overcast	Wm. Kennedy.
St. Ann's Head	29.90	759.4	30.06	763.5	57	13.9		WSW			2		10					Overcast	John C. Walker.
Sandwick Manse, Orkneys			29.79	756.7	55.8	13.2		NNW	8	3.6			8					D. clouds	Rev. C. Clouston, L.L.D.
Scutari Cemetery, Turkey	29.66	753.4	29.72	754.9	69.8	21.0		NNE			3		9			Blank	Blank	Gloomy	Serg't W. H. Lyne.
Sheffield	29.70	754.4	29.97	761.2	72.4	22.4		SW			3		3			0	0	D. clouds	W. F. Cooper.
Silloth Rectory	29.85	758.2	29.88	758.9	57.9	14.4	95	W			3		10			0.769	18.01	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.98	761.5	60.0	15.6		W	18	8.0			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.85	758.2	30.06	763.5	70.5	21.4		SW			2		3					D. clouds	Rev. C. H. Griffith, F.M.S.
Truro (Royal Institution)	30.09	764.3	30.10	764.5	67	19.4		W			2		5					D. clouds	W. Newcombe.
Valencia (Observatory)	29.94	760.5	29.97	761.2	58.0	14.9		S	30	13.4			10					Drizzling	The Met'g'l Office.
SUB-SERIES.																			
Beaufort West, Cape Colony					68.1	20.1	60	S	7.2	3.2		0	0			0	0	Clear	The Staff, for D. Gill.
Cape Town (C. G. H. Obs'y)	30.43	772.9	30.47	773.9															
Hobart Town, Tasmania			30.02	762.5	47.0	8.3	87	S			1		10kn			0.10	2.5	Raining	Francis Abbott, F.R.A.S.
Leith (Restairig Park) Sc'tl'd			29.82	757.4	65.0	18.3		W			4		10k			0.02	0.5	Overcast	Andrew Gibb.
Mauritius (Observatory)	30.00	762.0	30.19	766.7	72.0	22.2	70	SSE	19.0	8.5		0	4		ESE	0.02	0.5	Squally	C. Meldrum.
Melbourne (Observatory)	30.02	762.5	30.11	764.8	51.4	10.8	83	N	7	3.1			7			0	0	Fine	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.75	755.6	62	16.7		SSW			2		10			0	0		J. Youngclause.
North Unst, Shetland I's			29.73	755.1				NW			4		10			0	0		Robert Barnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Weather.	Observer.
H. M. S Alert				Capt. J. P. Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Tommewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 30° 45′, W. 68° 30′	3	W	Misty	Capt. W. Randall.
Ship Lochee, S. 34° 35′, E. 17° 40′			Misty	Capt. J. Raeburn, R.N.R.
Barque Mertola, N. 52 37′, W. 5° 48′			D. clouds	Capt. E. W. Turner.
Barque Queen of Cambria				Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 43° 16′, W. 8° 03′			Blue sky	Capt. R. J. Blackiln.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.22	666.0	29.94	760.5	68.4	20.2	93	SE			1	9s				1.46	37.	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known: the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.80	756.9	29.85	758.1	70.9	21.0	61	NW			4		10						
Fanöe	29.87	758.7	29.89	759.2	63.9	17.7	83	W			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.63	752.7	29.68	753.8	51.4	10.8	77	W			2		8						
Thorshavn (Faröe)	29.69	754.0	29.72	754.9	54.3	12.4	78	W			3		8						
Vestervig	29.73	755.1	29.82	757.5	63.0	17.2	85	WSW			4		9						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.57	751.1	30.12	765.1	77.0	25	47	E			1		5ks		NE	0	0	Cloudy	Collignon, Director.
Amiens, Normal School	30.00	762.1	30.11	764.8	78.1	25.6	49	NW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.74	755.4	29.99	761.8	63.7	17.6	65	NW			1		2s	E		0	0		Klein, Commandant.
Avignon, Normal School	29.96	760.9	30.04	762.9	85.5	29.7	49	N			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.54	750.3	30.07	763.8	76.8	24.9	58	SE			1		0			0	0	Clear.	C. Saillard, Director.
Beauvais, Normal School	29.84	757.9	30.10	764.4	73.9	23.3	49	S			1		5			0	0	Cloudy	Frère Eugene Marie.
Besançon, Normal School	29.23	742.4	30.12	765.0	76.8	24.9	55	SW			1		2		SW	0	0	Slightly cld'y	A. Carré, Director.
Bordeaux	29.76	755.8	29.95	760.8	82.8	28.2	42	SE			1		0			0	0	Clear.	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.22	742.1	30.15	765.7	80.6	27	52	N			1		0			0	0	Clear	Mariot, Director.
Bourges, Normal School	29.58	751.2	30.10	764.6	75.9	24.2	72	N			3		s		N	0	0		M. Gence, Director.
Brest, Naval Observatory	29.83	757.6	30.07	763.7	81.3	27.4	58	Calm			0		1			0	0		Ch. de Rermaree, Dir.
Caen, Normal School	29.99	761.7	30.07	763.6	73.6	23.1	65	SW					5		W	0	0	Cloudy	M. Bletrix, Director.
Carcassonne, N. School	29.57	751.0	29.95	760.8	84.2	29	36	ENE			1		0			0	0	Clear	September, Director.
Châlons-sur-Marne, N. Sch'	29.80	757.0	30.11	764.9	80.6	27.0	43	NE			1		1		SW	0	0	Clear.	Jadot, Director
Chartres, Normal School	29.51	749.5	30.05	763.3	76.6	24.8	59	SW			1		5		NW	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28.71	729.3	30.00	762.0	80.2	26.8	45	N			1		0			0	0		Alluard, Director.
Commercy, Normal School	29.26	743.1	30.08	764.1	78.8	23.2	45	W			1		2k		W	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.96	735.5	30.10	764.5	83.3	28.5	30	S			3		0			0	0		L. Kina, Director.
Grenoble, Normal School	29.27	743.4	30.04	762.9	78.4	25.8	69	W			1		2k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'l	29.81	757.2	30.02	762.4	80.6	27.0	56	ENE			1		0			0	0	Clear	Moullot, Director.
Le Mans, Normal School	29.78	756.4	30.04	763.0	77.0	25	55	SSE			1		2		SSE	0	0	Slightly cld'y	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.13	739.8	30.17	766.3	78.1	25.6	50	NNW			1		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	29.98	761.6	30.09	764.2	75.2	24.0	68	S			1		2		SE	0	0	¼ covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.56	750.8	30.06	763.4	78.4	25.8	48	NW			1		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.77	756.2	30.04	762.9	80.1	26.7	51	S			1		0			0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	29.01	736.8	29.98	761.5	72.0	22.2	58	NE			1		s		NE	0	0		Barbier, Director.
Mont-Louis	24.95	633.7	30.19	766.7	64.4	18.0	66	E	5.6	2.5			0			0	0		M. Cave, for Dr. Fines.
Nice	30.02	762.8	30.06	763.5	78.8	26.0	69	W			1		1	W	W	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.82	757.3	30.02	762.4	86.5	30.3	44	S			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.90	759.5	30.00	762.1	79.5	26.4	38	SE	13.0	5.8			0			0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.70	576.5			58.5	14.7							1	S	N	0	0	Clear	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	29.03	737.4	30.04	763.1	82.0	27.8	30	N			1		0			0	0	Clear.	M. Tallieu
Puy de Dome (Summit) Obs	25.30	642.6			59.9	15.5	81	E			3		0			0	0	Misty	Alluard, Director.
Rochefort, Naval Obs'y	30.00	761.9	30.03	762.7	83.7	28.7	65	E			1		0			0	0	Clear.	Lt. E. Decante, Director
Rouen, Normal School	30.03	762.7	30.11	764.9	74.3	23.5	57	SW			1		2		SW	0	0	Slightly cld'y	Platrier, Director.
Saint Malo (Port) Obs'y	30.04	763.1	30.08	763.9	67.1	19.5	76	NNE			3		1	NNE	NNE	0	0	Clear	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.93	760.1	30.09	764.3	79.5	26.4	48	NNE			1		3	WNW	S	0	0		E. Renou, Director.
Tarbes, Normal School	28.96	735.5	30.00	762.0	73.4	23	59	E			1								T. Huguet, Director
Toulouse, Observatory	29.32	744.7	30.04	763.1	80.6	27.0	42	SSE			3		0			0	0	Clear	B. Baillaud, Dir.
Tours	29.86	758.4	30.06	763.4	79.5	26.4	52	E			1		1		E	0	0	Clear	M. de Tastes.
Versailles, Observatory	29.60	751.9	30.10	764.4	79.5	26.4	45	W			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.35	745.4	30.02	762.5	82.8	28.2	50	ENE			1		0			0	0	Clear	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.26	768.5	30.28	769.2	77.7	25.4										1.02	26.		L'Abbé Marchésl.
Paris, Montsouris Obs'y	29.82	757.3			79.0	26.1	53	S			1		6k		W	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.61	752.1	29.64	752.8	76.1	24.5	96	S	9.6	4.3			10n			0.421	10.7	Raining	Marc Dechevrens, SJ, Dir

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,586.40 m., or 5,205.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 138 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Hamberg	29.22	742.2	30.09	764.2	70.2	21.2	63	NW			4		2s			0	0		Prof. Dr. Hoh.
Berlin	29.82	757.3	29.98	761.5	69.4	20.8	70	NW			2		9			0.059	1.5	Raining	Prof. Dr. Arndt.
Breslau	29.48	748.9	30.02	762.4	69.8	21.0	60	W			3		8			0.029	0.74	Raining	Royal University Obs'y
Carlsruhe	29.64	752.9	30.06	763.4	75.2	24.0	62	S			0		1	NW		0	0		Albert Senz.
Cassel	29.46	748.2	30.07	763.7	74.5	23.8	58	NW			2		8	SW		0.043	1.08		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.74	755.5	30.11	764.8	73.9	23.3	87	W			1		4			0	0		Physical Society.
Friedrichshafen	28.67	728.3	30.07	763.6	70.9	21.6	65	SSW			3		2	W		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.91	759.8	29.99	761.7	67.3	19.6	80	W			3		10			0.079	2.0		Dr. Reinhold Kleeman.
Kiel	29.93	760.1	29.94	760.5	65.3	18.5	88	W			3		10			0.068	1.72		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.82	757.5	29.91	759.6	64.4	18.0	78	NW			4		10	NW		0.276	7.0		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.65	753.1	30.06	763.5	69.4	20.8	72	WSW			2		9	W		0.071	1.8		Prof. Dr. Bruhns, Privy Counsello
Magdeburg	29.80	757.0	30.03	762.8	71.8	22.1	64	SW			4		10ks	WNW		0.024	0.6		Dr. Assmann.
Memel	29.83	757.6	29.87	758.8	66.6	18.9	76	W			3		10					Foggy	Reinbrecht & Issermann.
Munich	28.29	718.6	30.16	766.1	73.6	23.1	37	NW			3		8			0.146	3.7		Dr. C. Lang.
Neufahrwasser	29.90	759.4	29.91	759.8	65.8	18.8	77	NNE			2		10	WSW		0.197	5.0		A. Lothes.
Neustadt (Palatinate)	29.55	750.6	30.08	764.0	77.7	25.4	54	SSW			1		5	W		0	0		Reallehrer Dicknether.
Posen	29.68	753.9	29.96	761.0	68.4	20.2	71	W			2		10			0.020	0.5		Prof. Dr. Magener.
Strassburg (in Alsace)	29.57	751.0	30.10	764.4	76.1	24.5	44	ESE			2		1			0	0		Imp. University Observatory.
Stuttgart	29.12	739.7	29.98	761.5	74.3	23.5	47	NW					1	N		0	0		Prof. Dr. Schoder.
Thorn	29.72	755.0	29.91	759.7	68.2	20.1	71	NW			3		7			0.134	3.4		Dr. Cunerth.
Weissenburg (Bavaria)	28.62	726.9	30.20	767.1	71.8	22.1	55	NW	1.1	0.5		7ck		S	N	0.012	0.3		Reallehrer J. Hopfner.
Wustrow	29.94	760.5	29.97	761.2	66.2	19.0	85	WSW			4		10s			0.024	0.6		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.34	745.2	29.72	754.8	77.4	25.2		N			1.0		5					½ Clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.39	746.5	29.44	747.8	86.5	30.3	82	SSW	16.2	7.2			3	ESE		0	0	Misty	
Deesa	28.98	736.0	29.44	747.7	89.4	31.9	59	S	13.4	6.0			8	E		0.02	0.5	D. clouds	
Bombay	29.60	751.8	29.64	752.7	81.8	27.7	93	WSW	18.0	8.0			10		WSW	1.46	37.1	Overcast	
Poona (Yarrowda)	27.80	706.2	29.66	753.2	75.3	24.1	81	WSW	17.0	7.6			10	W	W	0.40	10.2	Drizzling	
Belgaum	27.21	691.2	29.78	756.4	68.3	20.2	97	WSW	2.0	0.9			10		SW	1.15	29.2	Showery	
Lahore	28.68	728.5	29.41	747.0	85.0	29.4	76	NE	2.6	1.2			6		E	0.06	1.5	D. clouds	
Roorkee	28.54	725.0	29.43	747.6	77.8	25.4	88	Calm	3.0	1.3			8			1.38	35.0		
Agra	28.87	733.4	29.42	747.2	93.6	34.2	57	E	3.7	1.6						0	0		
Nagpur	28.47	723.1	29.50	749.4	79.0	26.1	85	Calm	8.0	3.6			9		W	1.54	39.1		
Jubbulpore	28.11	713.9	29.46	748.3	77.8	25.4	87	SW	5.9	2.6			4			0.19	4.8	D. clouds	
Lucknow	29.10	739.1	29.46	748.3	93.0	33.9	39	ESE	4.8	2.2						0	0	Blue sky	
Allahabad	29.06	738.5	29.37	746.1	96.6	35.9	43	E	4.4	2.0			2		E	0	0	D. clouds	
Patna	29.24	742.6	29.41	747.1	90.3	32.4	62	E	5.0	2.2			6	E	E	0	0	D. clouds	
Hazaribagh	27.43	696.8	29.41	747.0	80.3	26.8	77	E	12.2	5.4			4		E	0.01	0.3	Drizzling	
Cuttack	29.40	746.8	29.48	748.8	80.0	26.7	76	W	3.4	1.5			10			0.07	1.8	Drizzling	
Calcutta (Alipore)	29.43	747.5	29.45	748.0	81.4	27.4	81	SSW	6.0	2.7			6	SSW	SSW	0	0	D. clouds	
Goalpara	29.04	737.7	29.44	747.8	89.5	31.9	68	Calm	1.8	0.6			0			0	0	Blue sky	
Chittagong	29.43	747.6	29.52	749.9	80.7	27.1	89	S	5.9	2.6			9			0.05	1.3	D. clouds	
Sibsagar	29.14	740.2	29.47	748.5	87.9	31.1	73	NE	3.6	1.6			0			1.76	44.7	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,361 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit.	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Udine	29.70	754.3	30.10	764.4	78.1	25.6	45	W	3.1	1.4			3			0	0		Prof. Giovanni Clodig.
Milan	29.52	749.8	30.02	762.5	75.2	24.0	57	E	3.8	1.7			0			0	0		Prof. Schiaparelli.
Padua	29.92	759.9	30.08	762.7	79.2	26.2	41	E	4.3	1.9			0			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.10	739.2	29.98	761.5	81.7	27.6	33	S	3.1	1.4			1			0	0		Prof. P. F. Denza.
Genoa	29.88	759.0	30.07	763.8	74.8	23.8	57	SW	6.3	2.8			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.15	714.9	29.99	761.7	80.2	26.8	31	NE			4		0			0	0		Prof. D. C. Bruno.
Pesaro	30.00	762.0	30.05	763.2	76.3	24.6	43	E	9.8	4.4			0			0	0		Prof. Luigi Guidi.
Florence	29.77	756.2	30.02	762.6	82.4	28.0	27	W			2		0			0	0		Cav. F. Meucci.
Leghorn	29.99	761.8	30.08	763.9	74.5	23.6	59	WNW	3.1	1.4			0			0	0		Prof. P. Monte.
Rome	29.82	757.5	30.00	761.9	84.0	28.9	22	NNE					2			0	0		Prof. P. Tacchini.
Lecce	29.65	753.2	29.90	759.4	72.7	22.6	40	NNW	29.8	13.3			0			0	0		Prof. C. De Giorgi.
Cosenza	29.07	738.3	29.92	759.9	78.1	25.6	67	NW	6.3	2.8			0			0	0		Prof. D. Conti.
Cagliari	29.84	757.9	30.03	762.8	76.1	24.5	57	S			4		0			0	0		Prof. A. Pacinotti.
Palermo	29.79	756.6	30.04	762.9	75.7	24.3	36	NNE	9.8	4.4			0			0	0		Prof. G. Giacciatore.
Syracuse	29.88	759.0	29.93	760.1	79.7	26.5	51	S	4.9	2.2			2	SW		0	0		Prof. V. G. Guliano
SUB-SERIES.																			
Naples, S. R.	29.47	748.6	29.98	761.5	78.6	25.9	22	SW	0	0			8			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Aral, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					69.7	20.9	94	WSW	1.4	0.6			10ks			0.660	16.76	Cloudy	K. Sasaki.
Nagasaki, I. M. Obs'y	29.57	751.1	29.76	755.9	74.5	23.6	94	WSW	0.9	0.4			10s			0.210	5.33	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.70	754.4	29.77	756.1	69.3	20.7	91	SSW	1.8	0.8		3cs				0	0	Fair	The Staff.
Wakayama	29.70	754.4	29.75	755.6	70.5	21.4	85	SSW	0.4	0.2			10s			0.015	0.38	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.08	637.0	30.12	765.1	55.4	13.0	72	NE			1		9ks			0.62	15.8	Very cloudy	Prof. L. Perez.
Guanaxuato																Inap.	Inap.		Vicente Fernandez.
Leon	24.43	620.6	30.07	763.7	63.0	17.2	89	SW			3	6c	1k	SW		0.51	13.0	Cloudy	Prof. M. Leal.
Mazatlan																			F. Quijano, C. E.
Mexico, Central Observatory	23.08	586.1	30.06	763.5	54.9	12.7	85	NW	3.6	1.6			10k			0.06	1.6	Threatening	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.95	608.4	29.92	760.1	59.7	15.4	78	SW			2	3c	0			0.11	2.9	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.47	596.2	30.22	767.5	55.4	13.0	58	Calm	0	0		3k	0	S		1.20	30.5	Clear	Prof. P. Spina.
San Luis Potosi	24.26	616.1	30.11	764.7	67.5	19.7	52	E			1		10		E	0.02	0.5	Covered	G. Barroeta, M. D.
Tlacotalpam	29.93	760.2	29.94	760.5	75.4	24.1	80	W			2	5	5	SW	SE	0.18	4.6	Raining	Prof. M. M. Chazaro.
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.63	574.7	30.22	767.5	56.1	13.4	82	Calm			0	2c	1s	E	E	0	0	Clear	J. C. Castrillon.

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.34 m., or 6,756.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.3 ft.; Puebla, Catholic Institute, 2,167.8 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	30.09	764.3	30.09	764.3	66.9	19.4		W			3					0	0		
Groningen	29.96	761.0	30.02	762.4	68.0	20.0		WSW			4					0	0		
Helder	30.02	762.5	30.02	762.5	63.5	17.5		SW			4					0	0		
Hellevoetsluis	30.07	763.7	30.07	763.7	66.2	19.0	73	W			3					0	0		
Utrecht	30.03	762.7	30.08	763.9	68.2	20.1	72	SW			3		8			0	0	Very cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.66	753.3	29.71	754.7	57.2	14.0	76	S	5.4	2.4	.....	.....	8	.....	.....	0	0	.....	
Brönö	29.56	750.9	29.60	751.9	53.6	12.0	76	W	18	8	.....	.....	8	.....	.....	0.567	14.4	.....	
Christiania	29.46	748.2	29.60	751.7	70.9	21.6	39	SW	18	8	.....	.....	10	.....	.....	0.051	1.3	.....	
Tromsö	29.59	751.6	29.65	753.0	56.3	13.5	62	NNE	4	2	.....	.....	9	.....	.....	0	0	.....	

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Angra (Azores)	30.06	763.5	30.27	768.8	71.2	21.8	94	WSW	.....	.....	4	.....	8	.....	.....	0	0	Foggy	Dr. J. A. Sampaio.
Campo Major	29.09	738.8	30.04	763.1	81.0	27.2	42	WNW	6.3	2.8	.....	.....	8	.....	.....	0	0	.....	Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.18	766.5	30.26	768.7	70.9	21.6	59	SW	6.3	2.8	.....	.....	8	.....	.....	0	0	.....	Capt. D. A. de Cunha.
Lisbon Observatory	29.78	756.5	30.13	765.3	77.0	25.0	47	NNW	11.2	5.0	.....	.....	0	.....	.....	0	0	.....	The Staff.
Ponta Delgada (Azores)	30.21	767.4	30.28	769.2	74.5	23.6	83	SW	10.5	4.7	.....	.....	3	.....	.....	0	0	.....	

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 9 h. 6 m., p. m.

Portuguese Naval Series. Vessels and Captains.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Sea or swell. Height scale 0-9	Direction from—	Rain-fall.	Weather.	Observer.
Bartholomew Dias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. G. da Silva Costa, Com'd't.
D. Fernando	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. M. de Sande, Com'd't
Duque da Terceira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. C. M. Cabrate, 1st Lt
Mindello [Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva. St. Paul de Loando	.....	.....	29.90	759.5	72.0	22.2	.....	NW	.....	.....	1	.....	0	.....	.....	1	NW	.....	Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Antonio Sarmento, Q. M.
Sà da Bandeira	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. Teixeira da Silva, Comd't.
Sado, J. A. de Brito Capello	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tejo, J. M. T. Guimaraes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Tito da Silva, Q. M.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. G. Felgos, 2nd Lieut.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
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.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirà gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Archangel	29.80	757.0	29.82	757.5	62.6	17.0	72	Calm	0	0	.....	.....	6n	.....	.....	.....	.....	.....	Capt. Sseliwerstow.
Astrakhan	29.90	759.5	29.82	757.4	83.3	28.5	48	S	11	5	.....	.....	1ks	.....	.....	.....	.....	.....	Capt. Wisganow.
Barnaul	29.02	737.1	29.50	749.4	56.3	13.5	91	Calm	0	0	.....	.....	10	.....	.....	.....	.....	.....	Meteorological Obs.
Dorpat	29.62	752.3	29.85	758.2	70.7	21.5	38	SSE	2	1	.....	2ck	.....	.....	.....	.....	.....	.....	Prof. Dr. Weihrauch.
Ekaterinburg	28.87	733.4	29.79	756.6	74.8	23.8	35	NW	4	2	.....	ck	4k	.....	.....	.....	.....	.....	Meteorological Obs.
Irkutsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kasan	29.51	749.6	29.76	756.0	79.7	26.5	47	NNE	4	2	.....	9ck	.....	.....	.....	.....	.....	.....	Physical Cabinet.
Kertch	29.69	754.2	29.71	754.7	74.3	23.5	81	SSE	2	1	.....	.....	2	.....	.....	.....	.....	Hazy	Lagorio.
Kieff	29.06	738.2	29.67	753.5	75.9	24.4	47	Calm	0	0	.....	ck	4ks	.....	.....	.....	.....	.....	Physical Cabinet.
Krotkowo*	29.36	745.7	29.80	757.0	77.7	25.4	47	W	0:2	0.1	.....	.....	7	.....	.....	.....	.....	.....	Cand. Fatjanow.
Lugan	29.46	748.3	29.66	753.3	77.9	25.5	47	SE	2	1	.....	.....	7	.....	.....	.....	.....	.....	Meteorological Obs.
Moscow	29.21	741.8	29.72	754.9	76.5	24.7	50	SE	4	2	.....	.....	7ks	.....	.....	.....	.....	.....	Meteorological Obs.
Nertchinsk	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Meteorological Obs.
Nikolaiev	29.70	754.4	29.77	756.2	67.5	19.7	80	NNW	4	2	.....	.....	10n	.....	.....	.....	.....	.....	Kurdakof.
Nikolaievsk, on the Amoor	29.93	760.2	30.02	762.4	61.7	16.5	73	E	2	1	.....	.....	0	.....	.....	.....	.....	.....	.....
Nukuss	29.45	747.9	29.67	753.5	88.0	31.1	33	NNE	2.5	1.1	.....	.....	1k	.....	.....	.....	.....	.....	.....
Orenburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pekin (China)	29.42	747.2	29.56	750.8	77.5	25.3	77	Calm	0	0	.....	.....	2k	.....	.....	.....	.....	.....	Physical Observatory.
St. Petersburg	29.82	757.3	29.83	757.7	66.0	18.9	52	WNW	11	5	.....	c	2ks	.....	.....	.....	.....	.....	Central Physical Obs.
Tashkend	28.06	712.6	29.53	750.1	79.2	26.2	.....	Calm	0	0	.....	.....	6	.....	.....	.....	.....	Heavy clouds	Teich, A. M.
Tiflis	28.47	723.2	29.80	757.0	86.7	30.4	37	SE	4	2	.....	.....	0	.....	.....	.....	.....	.....	Physical Observatory.
Vladivostock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warsaw	29.50	749.4	29.91	759.8	67.6	19.8	72	WSW	11	5	.....	.....	9ks	.....	.....	.....	.....	.....	Astronomical Obs.
Wilna	29.46	748.3	29.87	758.6	69.3	20.7	44	N	4	2	.....	.....	2	.....	.....	.....	.....	Light clouds	Astronomical Obs.
Yeniseisk	29.39	746.6	29.67	753.6	64.4	18.0	52	S	4	2	.....	.....	1	.....	.....	.....	.....	.....	Marks.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. * N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Stations.	Barometer. Corrected for instru-m'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Barcelona, Met. Obs'y	29.97	761.2	30.07	763.8	79.7	26.5	47	SSW	4.2	1.89	.....	.....	0	.....	.....	0	0	Clear	Antonio Rave, Director.
Bilbao, Met. Obs'y	29.96	761.0	30.02	762.4	84.6	29.2	54	NW	2.2	0.97	.....	1	0	W	.....	0	0	Almost clear	Prof. Manuel de Naveran.
Burgos, Met. Obs'y	27.11	688.6	.....	.....	83.8	28.8	44	SE	2.6	1.17	.....	.....	1	.....	.....	0	0	Almost clear	Domingo Martin y Perez.
Madrid, Royal Observatory	27.82	706.6	29.90	759.4	89.4	31.9	31	NE	2.2	1.00	.....	0	3	.....	.....	0	0	Light clouds	The Staff.
Murcia, Met. Obs'y	29.90	759.5	30.04	763.1	85.6	29.8	35	E	3.2	1.44	.....	0	0	.....	.....	0	0	Clear	Olayo Diaz, Director.
Santiago, Met. Obs'y	29.15	740.5	30.01	762.3	78.4	25.8	56	W	6.3	2.8	.....	.....	0	.....	.....	0	0	Clear	R. Gil Villanueva, Dir.
Sub-Series.																			
Havana, Cuba, W. I.	30.05	763.2	30.11	764.9	81.5	27.5	71	ENE	4.9	2.2	.....	10ck;cs	0	SW	.....	0	0	Cloudy	Benito Vines, S. J.
Manilla, Philippine Islands	29.85	758.3	29.91	759.6	81.5	27.5	87	ESE	6.6	3.0	.....	.....	10n	.....	.....	0.31	8.0	Raining	Federico Faura, S. J.
San Fernando, Naval Obs'y	30.09	764.3	30.19	766.7	71.6	22.0	58	W	3.7	1.7	.....	0	1	.....	W	0	0	.....	Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.02	762.5	30.11	764.8	82.4	28.0	88	S	4.8	2.15	.....	5ck	8kn	S	S	0.256	6.50	Cloudy	Enrique Jados, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following: at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.78	756.3	29.82	757.3	66.2	19.0		S			2		0			0	0		
Umea	29.69	754.2	29.71	755.5	55.4	13.0	87	SW			6		10			0.425	10.8		
Hernosand	29.63	752.6	29.68	753.9	53.6	12.0	96	SE			2		10			0.035	0.9		
Stockholm	29.52	749.9	29.70	754.4	70.2	21.2	57	WSW			2		9			0.016	0.4		
Wisby	29.71	754.6	29.77	756.1	65.8	18.8	68	W			2		3			0.024	0.6		
Sub-Series.																			
Upsala	29.56	750.7	29.64	752.9	69.4	20.8	69	SSW	6.9	3.1			7	SW	WSW	0.031	0.80		Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0–9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia																				J. P. Pahlson.
H. M. Corvette Balder																				Capt. A. C. Schonmeyr
Saga, N. 39° 03′, W. 19° 55′			30.20	769.4	70.2	21.2		WSW			2		4						D clouds	M. von Krusenstierna.

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.67	728.2	30.04	763.1	72.9	22.7	51	N			1		0			0	0	Clear		The Observatory.
Zurich	28.49	723.6	30.04	763.0	80.6	27.0	50	W			2		1			0	0	Clear.		The Observatory.

Note.—At Geneva the corresponding departures from the normal values are: Barometer, +1.1 mm.; Thermometer, +0.8 Cent. Relative Humidity, —3 per cent.
Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople			29.76	756.0	69.1	20.6	68	N	34	15.0			10		N	0	0			The Observatory.
Fao, Persian Gulf																				
Valona			29.93	760.3	74.8	23.8		N			6		0			0	0	Clear.		A. Bertrand.
Sub-Series.																				
Beirut, (Syria) Lee Obs'y			29.61	752.0	83.8	29.0	70	NNW			1	1ck		SE		0	0			Prof. C. V. A. van Dyck

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.					67.0	19.4		SW	9	4.0			10n			0	0	Cloudy		Hon. J. Ferguson.
Chatham, N. B.	29.60	751.8	29.66	753.4	68.7	20.4	90	SW	6	2.7			10ks			Inap.	Inap.	Cloudy		G. A. Blair.
Charlottetown, P. E. Island	29.72	754.9	29.76	755.9	67.0	19.8	85	S	2	0.9		2ck	3s			0	0	Fair		H. J. Cundall, C. E.
Cornwall, Ontario	29.49	749.0	29.67	753.6	69.3	20.7	82	NW			4		9s			0.240	6.10	Cloudy		James Smith, M. A.
Dalhousie, N. B.																				H. A. Johnson.
Father Point, Quebec	29.45	748.0	29.48	748.8	73.6	23.1	68	SW	10	4.5			10n			0.08	2.0	Cloudy		J. McWilliams.
Fredericton, N. B.	29.64	752.8	29.70	754.4	65.2	18.4	87	SE	4	1.8			10s			0	0	Cloudy		Prof. Harrison.
Fort Garry, Manitoba	29.00	736.6	29.80	756.9	58.3	14.6	86	NW	1	0.4		0	0			0.150	3.81	Clear		James Stewart.
Granton, Ontario	28.80	731.5	29.84	757.9	62.0	16.7	89	NW			1	4ck	0	NW		0.50	12.7	Fair		James Grant.
Halifax, N. S.	29.73	755.1	29.86	758.4	57.4	14.1	97	SE	8	3.6			Fog			0	0	Foggy		A. Allison.
Hamilton, Ontario	29.46	748.8	29.86	758.4	66.1	18.9	78	SW			1	3c	0			0	0	Clear		Geo. Dickson, B. A.
Heart's Content, N. F.																				E. Weedon.
Kingston, Ontario	29.47	748.5	29.79	756.7	69.0	20.6	83	SW	8	3.6		0	0			0.28	7.1	Clear		S. Woods, M. A.
Little Glace Bay, N. S.	29.82	757.4	29.86	758.4	74.5	23.6	59	W	8	3.6		5ck	0	W		0	0	Fair		C. H. Rigby.
Montreal, Quebec	29.47	748.5	29.66	753.4	70.8	21.6	82	SW	11	4.9			10ks			0.43	10.9	Cloudy		C. H. McLeod, C. E.
Moose Factory, Ontario	29.71	754.6	29.75	755.6	53.5	11.9	92	Calm			0		10n			0.06	1.5	Cloudy		J. R. Nason.
Norwood, Ontario	29.10	739.1	29.77	756.1	65.0	18.3	71	NW	6	2.7		2c	0	W		0.58	14.7	Fair		Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.14	740.1	29.81	757.2	62.4	16.9	80	W	20	8.9		0	2ks			0	0	Fair		Rev. R. Mosley.
Peterboro, Ontario	29.14	740.1	29.86	758.4	66.7	19.3	77	E			2*	0	3ks			0.24	6.1	Fair		J. F. Jeffers, M. A.
Port Dover, Ontario	29.20	741.7	29.87	758.7	61.1	16.2	94	W	3	1.3		3ck	0	W		0.06	1.5	Fair		H. Morgan.
Port Stanley, Ontario	29.24	742.7	29.86	758.4	66.0	18.9	79	W	6	2.7		1ck	0	W		0.50	12.7	Clear		M. Payne.
Quebec, Quebec	29.29	744.0	29.60	751.8	73.0	22.8	85	W			3		8s			0.04	1.0	Fair		Capt. Ashe, R. N.
Rockliffe, Ontario	29.29	744.0	29.72	754.9	64.0	17.8	83	NW	5	2.2			8ks			0.32	7.9	Cloudy		W. H. McIntyre.
St. John, N. B.	29.58	751.3	29.74	755.4	59.0	15.0	100	S	6	2.7			Fog			0.040	1.02	Dense fog		G. Murdock, C. E.
Saugeen, Ontario	29.16	740.7	29.85	758.2	63.3	17.4	76	W	10	4.5		1cs	0			0.18	4.6	Clear		R. Stewart.
Stratford, Ontario	28.59	726.2	29.83	757.7	60.7	15.9	77	NW	5	2.2		1cs	0			0.318	8.07	Clear		C. J. MacGregor, M. A.
Sydney, C. B.	29.85	758.2	29.88	758.9	71.5	21.9	62	S	8	3.6		7c	0	N		0	0	Fair		T. C. Hill, C. E.
Toronto, Ontario	29.50	749.3	29.87	758.7	64.0	17.8	72	W	7	3.1		0	0			0.59	15.0	Clear		Magnetic Observatory.
Windsor, N. S.																				Prof. John E. Oram, M. A
Woodstock, Ontario	28.82	732.0	29.85	758.2	65.1	18.4	79	W	7	3.1		1k	0	W		0.71	18.0	Clear		Professor Wolverton.
Yarmouth, N. S.	29.60	751.1	29.76	755.9	64.6	18.1	86	S	12	5.4		6k	Fog	S		0	0	Cloudy		Lt. F. E. Wilmot, R. N.
Sub-Series.																				
St. Johns, Newfoundland	29.78	756.4	30.02	762.5	70	21.1	61	W			1	0	0			0	0	Clear		John Delany.
St. Pierre, N. F., l'Hopital Maritime			29.84	757.9	59.0	15.0		SW			3*					0	0			The Commandant.

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

UNITED STATES SERIES.

By authority of the **SECRETARY OF WAR.**

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0-10.	Clouds. Amount. Up'er 0-10.	Clouds. Amount. Lo'er 0-10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Albany, New York	29.73	755.1	29.81	757.2	80	26.7	55	W	7	3.1		5k	0	W		0.03	0.8	Fair	
Alpena, Michigan	29.19	741.4	29.81	757.2	60	15.6	77	W	7	3.1		0	0			0.10	2.5	Clear	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.90	734.0	29.99	761.7	80	26.7	65	W	12	5.4		1c	0	Calm		0	0	Clear	
Atlantic City, New Jersey	29.87	758.7	29.88	758.9	80	26.7	78	W	5	2.2		0	Haze		Calm	0	0	Clear	
Augusta, Georgia	29.90	759.4	30.10	764.5	82	27.8	60	SW			1	Haze	Haze	Calm	Calm	0	0	Light haze	
Baltimore, Maryland	29.87	758.7	29.91	759.7	79	26.1	66	W	4	1.8		2ck	Haze	Calm	Calm	0.01	0.3	Clear	
Barnegat, New Jersey	29.84	757.9	29.86	758.4	84	28.9	61	W	8	3.6		0	0			0.03	0.8	Clear	
Bismarck, Dakota	28.15	715.0	30.01	762.2	51	10.6	86	W	4	1.8		0	0			0.13	3.3	Clear	
Boerne, Texas	28.59	726.2	29.86	758.4	74	23.3	95	SE	2	0.9		8k	0	S		0	0	Fair	
Boise City, Idaho	27.05	687.1	30.01	762.2	56	13.3	57	W	6	2.7		5k	0	NW		0	0	Fair	
Boston, Massachusetts	29.60	751.8	29.75	755.6	80	26.7	66	W	14	6.3		5c	0	Calm		Inap.	Inap.	Fair	
Brackettville, Texas	28.86	733.0	29.88	758.9	77	25.0	86	SE	8	3.6		2k	0	SE		0.01	0.3	Fair	
Breckenridge, Minnesota	28.87	733.3	29.84	757.9	56	13.3	75	Calm	0	0		0	0			0.60	15.2	Clear	
Brownsville, Texas	29.92	760.0	29.97	761.2	84	28.9	87	SE	1	0.4		0	0			0	0	Clear	
Buffalo, New York	29.08	738.6	29.74	755.4	67	19.4	74	SW	6	2.7		2k	0	W		0.08	2.0	Fair	
Burkes, Arizona					67	19.4	21	W			1	0	0			0	0	Clear	
Burlington, Vermont	29.43	747.5	29.70	754.4	76	24.4	73	SW	9	4.0		2ck	8ks	SW	W	0.20	5.1	Cloudy	
Cairo, Illinois	29.64	752.8	30.02	762.5	69	20.6	80	Calm	0	0		0	8s		NW	0.73	18.5	Clearing	
Campo, California	27.41	696.2	29.98	761.5	41	5.0	82	SW	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.00	762.0	30.00	762.0	82	27.8	83	SW	14	6.3		0	0			0	0	Clear	
Cape Henry, Virginia	29.90	759.4	29.92	760.0	82	27.8	56	SW	10	4.5		0	0			0	0	Clear	
Cape Lookout, N. Carolina	30.01	762.2	30.02	762.5	82	27.8	83	SW	14	6.3		0	0			0	0	Clear	
Cape May, New Jersey	29.85	758.2	29.88	758.9	77	25.0	73	W	10	4.5		0	0			0.02	0.5	Clear	
Castroville, Texas	29.25	742.9	29.92	760.0	81	27.2	74	SE	3	1.3			10s		S	0	0	Cloudy	
Cedar Keys, Florida	30.12	765.0	30.14	765.5	84	28.9	75	S	7	3.1		2c	1ks	Calm	S	0	0	Fair	
Charleston, South Carolina	30.01	762.2	30.06	763.5	84	28.9	68	SW	4	1.8		0	0			0	0	Clear	
Charlotte, North Carolina	29.19	741.4	29.96	761.0	80	26.7	59	SW	2	0.9		0	Haze		Calm	0	0	Clear	
Chattanooga, Tennessee	29.26	743.2	30.03	762.7	68	20.0	90	SW	4	1.8			10n		SW	0.31	7.9	Light rain	
Cheyenne, Wyoming	24.14	613.1	30.08	764.0	44	6.7	68	NW	4	1.8		0	0			0.01	0.3	Clear	
Chicago, Illinois	29.21	741.9	29.87	758.7	66	18.9	74	W	4	1.8		8k	0	SW		Inap	Inap.	Fair	
Chincoteague, Virginia	29.90	759.4	29.92	760.0	78	25.6	87	SW	9	4.0		0	0			0	0	Clear	
Cincinnati, Ohio	29.32	744.7	29.95	760.7	71	21.7	80	SW	3	1.3			10ks		SW	0.59	15.0	Cloudy	
Cleveland, Ohio	29.21	741.9	29.90	759.4	69	20.6	70	NW	7	3.1		2ck;cs	2ks	SW	NW	0.50	12.7	Fair	
Coleman City, Texas	28.26	717.8	29.87	758.7	71	21.7	85	SE	4	1.8			10s		Calm	0.21	5.3	Cloudy	
Columbus, Ohio	29.10	739.1	29.90	759.4	70	21.1	80	SW	5	2.2		8ck	0	S		0.22	5.6	Fair	
Concho, Texas	28.14	714.7	29.75	755.6	74	23.3	81	NE	10	4.5		10k	0	SE		0.01	0.3	Cloudy	
Corsicana, Texas	29.62	752.3	30.08	764.0	71	21.7	90	Calm	0	0		0	8ks		Calm	0.67	17.0	Cloudy	
Davenport, Iowa	29.28	743.7	29.90	759.4	65	18.3	73	W	5	2.2		0	0			0	0	Clear	
Dayton, Washington T'y					62	16.7	71	NE			2		10ks		Calm	0	0	Cloudy	
Deadwood, Dakota	25.45	646.4			48	8.9	78	Calm	0	0		0	0			0	0	Clear	
Decatur, Texas	28.91	734.3	30.04	763.0	70	21.1	85	NE	7	3.1			10s		Calm	0.01	0.3	Cloudy	
Delaware Breakwater, Del.	29.88	758.9	29.90	759.4	78	25.6	79	SW	5	2.2		Haze	0	Calm		0	0	Clear	
Denison, Texas	29.28	743.7	30.05	763.3	69	20.6	90	NW	1	0.4		0	0			0.50	12.7	Clear	
Denver, Colorado	24.86	631.4	30.08	764.0	50	10.0	79	S	1	0.4		0	0			0	0	Clear	
Des Moines, Iowa	29.06	738.1	29.92	760.0	61	16.1	71	NW	4	1.8		0	0			0	0	Clear	
Detroit, Michigan	29.24	742.7	29.88	758.9	61	16.1	88	W	4	1.8		5cs	0	W		0.42	10.7	Fair	
Dodge City, Kansas	27.50	698.5	29.74	755.4	60	15.6	65	SW	3	1.3		5ck	5s	SW	Calm	0	0	Cloudy	
Dubuque, Iowa	29.21	741.9	29.88	758.9	64	17.8	63	W	2	0.9		0	0			0	0	Clear	
Duluth, Minnesota	29.12	739.6	29.77	756.1	60	15.6	82	NW	4	1.8		2k	0	W		Inap.	Inap.	Fair	
Eagle Pass, Texas	29.22	742.2	29.91	759.7	79	26.1	82	SE	8	3.6			10s		S	0	0	Cloudy	
Eastport, Maine	29.64	752.8	29.70	754.4	55	12.8	100	S	5	2.2			Fog		Calm	0.01	0.3	Dense fog	
Edinburg, Texas					82	27.8	91	SE			1	2k	0	SE		0	0	Fair	
El Paso, Texas	26.21	665.1			75	23.9	4	NW	3	1.3		0	0			0	0	Clear	
Erie, Pennsylvania	29.18	741.1	29.85	758.2	72	22.2	62	NW	8	3.6		0	5ks		W	0.10	2.5	Fair	
Escanaba, Michigan	29.14	740.7	29.76	755.9	63	17.2	72	W	6	2.7		0	0			0.17	4.3	Clear	
Florence, Arizona	28.38	720.8	29.98	761.5	66	18.9	36	S	1	0.4		0	0			0	0	Clear	
Fort Apache, New Mexico	25.10	637.5	30.55	776.0	45	7.2	46	SE	3	1.3		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.94	609.7	29.75	755.6	53	11.7	80	Calm	0	0		0	0			0	0	Clear	
Fort Custer, Montana	26.84	681.7			55	12.8	68	SE	5	2.2		0	0			0	0	Clear	
Fort Davis, Texas	25.28	642.1	30.24	768.1	66	18.9	79	W	1	0.4		0	0			0	0	Clear	
Fort Elliot, Texas	27.02	686.3	29.19	741.4	63	17.2	89	E	2	0.9			10s		E	0.01	0.3	Cloudy	
Fort Gibson, Indian Ter.	29.52	749.8	30.05	763.3	68	20.0	79	N	2	0.9		0	0			0	0	Clear	
Fort Grant, Arizona	25.20	640.1	30.00	762.0	73	22.8	7	N	8	3.6		0	0			0	0	Clear	
Fort Griffin, Texas	28.82	732.0	30.05	763.3	72	22.2	90	Calm	0	0			10s		Calm	0.13	3.3	Cloudy	
Fort Keogh, Montana	27.28	692.9			54	12.2	68	Calm	0	0		0	0			0	0	Clear	
Fort McKavett, Texas	27.79	705.8	29.63	752.6	75	23.9	77	E	6	2.7			10s		SE	0.03	0.8	Cloudy	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.86	733.0	29.94	760.5	68	20.0	84	N	6	2.7		5cs	0	Calm		0	0	Fair	
Fort Stevenson, Dakota	28.11	714.0			55	12.8	62	W	6	2.7		8k	0	W		Inap.	Inap.	Cloudy	
Fort Verde, Arizona					57	13.9	36	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	30.04	763.0	30.03	764.0	77	25.0	86	S	9	4.0		0	8s		Calm	0.24	6.1	Cloudy	
Grand Haven, Michigan	30.23	767.8	29.84	757.9	71	21.7	66	SW	2	0.9		0	0			Inap.	Inap.	Clear	
Helena, Montana																			
Henrietta, Texas																			
Indianapolis, Indiana	29.17	740.9	29.92	760.0	66	18.9	84	SW	1	0.4			10s		Calm	0.21	5.3	Cloudy	
Indianola, Texas	30.03	762.7	30.06	763.5	80	26.7	78	S	7	3.1		2c	1ks	Calm	Calm	0.11	2.8	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.12	65.0	30.14	765.5	81	27.2	74	SW	8	3.6		5k	0	SW		0.07	1.8	Fair	
Keokuk, Iowa	29.30	744.2	29.89	759.2	69	20.6	61	W	2	0.9		1cs	0	Calm		0	0	Clear	
Key West, Florida	30.12	765.0	30.15	765.8	83	28.3	64	E	9	4.0		2k	0	E		0	0	Fair	
Kittyhawk, North Carolina	29.97	761.2	29.99	761.7	82	27.8	63	W	12	5.4		0	0			0	0	Clear	
Knoxville, Tennessee	29.04	737.6	30.01	762.2	67.5	19.7	93	NE	3	1.3			10ks		SW	1.38	35.1	Threatening	
La Crosse, Wisconsin	29.12	739.6	29.83	757.7	61	16.1	77	SW	8	3.6		0	2s		W	0.19	4.8	Fair	
La Mesilla, New Mexico	26.09	662.7	30.24	768.1	63	17.2	47	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.54	750.3	29.87	758.7	81	27.2	74	SE	7	3.1		0	0			0	0	Clear	
Leavenworth, Kansas	29.15	740.4	29.97	761.2	65	18.3	58	W	3	1.3		2ck	0	NW		0	0	Clear	
Lewiston, Idaho	29.05	737.9	29.86	758.4	65	18.3	57	NE	4	1.8			10s		Calm	0	0	Cloudy	
Little Rock, Arkansas	29.72	754.9	30.03	762.7	69	20.6	95	W	4	1.8		2k	5ks	W	W	0.38	9.7	Fair	
Los Angeles, California	29.65	753.1	29.99	761.7	57	13.9	94	S	3	1.3			Fog		S	0	0	Light fog	
Louisville, Kentucky	29.39	746.5	29.93	760.2	65	18.3	89	N	4	1.8			10n		Calm	0.81	20.6	Light rain	
Lynchburg, Virginia	29.29	744.0	29.93	760.2	81	27.2	55	W	5	2.2		0	0			0	0	Clear	
Madison, Wisconsin	28.89	733.8	29.84	757.9	62	16.7	77	W	6	2.7		1ck	0	W		0.10	2.5	Clear	
Marquette, Michigan	29.06	738.1	29.72	754.9	63	17.2	67	W	10	4.5		0	0			Inap.	Inap.	Clear	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.42	721.9	30.10	764.5	78	25.6	82	SE	2	0.9			10ks		SE	0.10	2.5	Cloudy	
Memphis, Tennessee	29.76	754.4	30.03	762.7	70	21.1	95	W	3	1.3			10s		W	0.97	24.6	Cloudy	
Milwaukee, Wisconsin	29.13	739.9	29.83	757.7	62	16.7	77	NW	11	4.9		2ck	0	NW		0.13	3.3	Fair	
Mobile, Alabama	30.06	763.5	30.10	764.5	79	26.1	82	S	2	0.9		0	Haze		Calm	0	0	Clear	
Montgomery, Alabama	29.88	758.9	30.11	764.8	77	25.0	86	SW	6	2.7		2k	5ks	SW	SW	0	0	Cloudy	
Morgantown, West Virginia	28.96	735.6	29.90	759.4	69	20.6	85	SW	6	2.7			10n		SW	0.27	6.9	Light rain	
Mt Washington, N. H	23.71	602.2	30.07	763.8	52	11.1	100	NW	32	14.3			Fog		NW	0.30	7.6	Dense fog	
Nashville, Tennessee	29.45	748.0	29.97	761.2	71	21.7	77	W	4	1.8		5cs;ck	2ks	Calm; SW	SW	1.76	44.7	Fair	
New Haven, Connecticut	29.72	754.9	29.82	757.4	85	29.4	61	W	4	1.8		0	0			0.01	0.3	Clear	
New London, Connecticut	29.76	755.9	29.80	756.9	81	27.2	66	W	5	2.2		0	Haze		Calm	0	0	Clear	
New Orleans, Louisiana	30.04	763.0	30.09	764.3	78	26.1	82	W	2	0.9		8c	Sm'e	W	Calm	0.23	5.8	Fair	
Newport, Rhode Island	29.75	755.6	29.79	756.7	76	24.4	77	SW	6	2.7		0	0			0	0	Clear	
New River, North Carolina					82	27.8	70	SW			1	0	0			0	0	Clear	
New York, New York	29.68	753.9	29.85	758.2	74	23.3	76	SW	5	2.2		0	Haze		Calm	0.01	0.3	Clear	
Norfolk, Virginia	29.80	759.2	29.94	760.5	86	31.7	47	SW	5	2.2		0	Haze			0	0	Clear	
North Platte, Nebraska	27.17	690.1	29.73	755.1	50	10.0	82	W	4	1.8		0	0			0	0	Clear	
Olympia, Washington Ter	29.97	761.2	30.01	762.2	62.5	16.9	94	SW	4	1.8			10s		Calm	0	0	Cloudy	
Omaha, Nebraska	28.86	733.0	29.93	760.2	62	16.7	69	W	4	1.8		0	0			0	0	Clear	
Oswego, New York	29.54	750.3	29.85	758.2	68	20.0	74	W	12	5.4		5ck	0	W		0.08	14.7	Fair	
Pembina, Dakota	28.97	735.8	29.78	756.4	53	11.7	86	NW	6	2.7		0	0			0.25	6.3	Clear	
Pensacola, Florida	30.08	764.0	30.11	764.8	81	27.2	78	SW	7	3.1		0	0			0	0	Clear	
Philadelphia, Pennsylvania	29.82	757.4	29.87	758.7	78	25.6	69	SW	6	2.7		0	Haze		Calm	0	0	Clear	
Phœnix, Arizona	28.74	730.0	30.44	773.2	85	29.4	44	E	5	2.2		0	0			0	0	Clear	
Pike's Peak, Colorado	17.97	456.4	30.18	766.6	35	1.7	36	W	20	8.9		2k	0	W		0	0	Clear	
Pilot Point, Texas	29.30	744.2	30.13	765.3	69	20.6	90	N	3	1.3		5cs	0	Calm		0	0	Fair	
Pioche, Nevada	24.04	610.6	29.81	757.2	67	19.4	33	S	15	6.7		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.12	739.6	29.89	759.2	68	20.0	84	SW	8	3.6			10s		Calm	0.40	10.2	Cloudy	
Port Huron, Michigan	29.22	742.2	29.86	758.4	65	18.3	73	W	4	1.8		2c	0	W		0.02	0.5	Fair	
Portland, Maine	29.64	752.8	29.68	753.9	78	25.6	73	NW	8	3.6		2cs	0	Calm		0.03	0.8	Clear	
Portland, Oregon	29.98	761.5	30.05	763.3	57	13.9	84	S	3	1.3			10ks		SW	Inap.	Inap.	Cloudy	
Portsmouth, North Carolina					83	28.3	71	SW	11	4.9		0	0			0	0	Clear	
Prescott, Arizona	24.82	630.4	30.18	766.6	56	13.3	35	S	2	0.9		0	0			0	0	Clear	
Punta Rassa, Florida	30.13	765.3	30.15	765.8	81	27.2	74	E	6	2.7		2c;k	1ks	Calm	SE	0	0	Fair	
Red Bluff, California																			
Rio Grande City, Texas	29.81	757.2	30.02	762.5	79	26.1	87	E	7	3.1		0	8s		SE	0	0	Fair	
Rochester, New York	29.25	742.9	29.83	757.7	67	19.4	74	W	11	4.9		4c	1s	W	Calm	0.23	5.8	Fair	
Roseburg, Oregon	29.49	749.0	30.06	763.5	51.5	10.8	89	Calm	0	0		1k	0	SW		0	0	Clear	
Sacramento, California	29.89	759.2	29.96	761.0	52.5	11.4	89	S	8	3.6		0	0			0	0	Clear	
St. Louis, Missouri	29.42	747.3	29.97	761.2	66	18.9	89	W	11	4.9		1cs	0	Calm		0	0	Clear	
St. Paul, Minnesota	29.00	736.6	29.70	756.7	60	15.6	77	SW	3	1.3		8c	0	W		0.07	1.8	Fair	
Salt Lake City, Utah	25.54	648.7	29.87	758.7	64	17.8	30	SE	4	1.8		0	0			0	0	Clear	
San Antonio, Texas	29.36	745.7	30.03	762.7	78	25.6	82	E	2	0.9			10s		S	0	0	Cloudy	
San Diego, California	29.96	761.0	30.03	762.7	59	15.0	88	N	3	1.3			Fog		Calm	0	0	Foggy	
Sandusky, Ohio	29.25	742.9	29.89	759.2	68	20.0	65	NW	11	4.9		5ck	0	W		0.53	13.5	Fair	
Sandy Hook, New Jersey	29.81	757.2	29.84	757.9	84	28.9	61	SW	12	5.4		0	0			0	0	Clear	
San Francisco, California	30.00	762.0	30.07	763.8	51	10.6	89	W	8	3.6			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.33	592.6	29.87	758.7	62	16.7	61	SE	6	2.7		0	0			0	0	Clear	
Savannah, Georgia	30.01	762.2	30.10	764.5	87	30.6	65	W	7	3.1		1cs	0	Calm		0	0	Clear	
Shreveport, Louisiana	29.34	757.9	30.05	763.3	76	24.4	86	Calm	0	0		0	0			Inap.	Inap.	Clear	
Silver City, New Mexico																			
Smithville, North Carolina	30.03	762.7	30.06	763.5	83	28.3	79	SW	8	3.6		0	Haze		Calm	0	0	Clear	
Socorro, New Mexico																			
Springfield, Illinois	29.30	744.2	29.94	760.5	68	20.0	67	W	5	2.2		0	1s		W	0	0	Clear	
Springfield, Massachusetts	29.67	753.6	29.79	756.7	83	28.3	64	S	3	1.3		0	0			Inap	Inap.	Clear	
Stockton, Texas	27.01	686.0	30.01	762.2	74	23.3	81	SE	5	2.2		0	0			0	0	Clear	
Thatcher's Island, Mass	29.72	754.9	29.76	755.9	76	24.4	77	W	20	8.9		5c	Haze	W		0.85	20.3	Fair	
Toledo, Ohio	29.23	742.4	29.89	759.2	77	25.0	79	W	4	1.8		2c	0	W		0.19	4.8	Clear	
Tucson, Arizona	27.50	698.5	30.05	763.3	77	25.0	23	S	4	1.8		0	0			0	0	Clear	
Umatilla, Oregon	29.53	750.0	30.00	762.0	70.5	21.4	60	W	7	3.1			10s		W	0	0	Cloudy	
Uvalde, Texas	29.11	739.4	29.89	759.2	80	26.7	78	SE	3	1.3			10ks		SE	0	0	Cloudy	
Vicksburg, Mississippi	29.81	757.2	30.06	763.5	77	25.0	86	SW	12	5.4			10s		SW	0	0	Cloudy	
Virginia City, Montana	24.28	616.7	29.76	755.9	53	11.7	42	Calm	0	0		8cs	0	W		0	0	Fair	
Visalia, California	29.56	750.8	29.92	760.0	61	16.1	55	NW	2	0.9		0	0			0	0	Clear	
Washington, D. C	29.79	756.7	29.90	759.4	82	27.8	63	W	4	1.8		1k	0	NW		Inap.	Inap.	Clear	
Wickenburg, Arizona					65	18.3	31	W			1	0	0			0	0	Clear	
Wilmington, North Carolina	29.95	760.7	30.03	762.7	84	28.9	71	SW	6	2.7		0	0			0.11	2.8	Clear	
Winnemucca, Nevada	25.64	651.2	30.00	762.0	60	15.6	29	SW	10	4.5		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.75	755.6	29.78	756.4	74	23.3	81	W	18	8.0		1c	0	Calm		0	0	Clear	
Yankton, Dakota	28.70	729.0	29.95	760.7	62	16.7	72	W	6	2.7		5c	0	W		0	0	Fair	
Yuma, Arizona	29.66	753.4	29.80	756.9	72	22.2	38	W	1	0.4		0	0			0	0	Clear	
Sub-Series.																			
Bogota, U. S. Colombia	22.05	560.1			54.5	12.5	79	Calm	0	0		2cs;k	2ks			Inap.	Inap.	Fair	Thomas Herran.
§ Havana, Cuba, W. I	30.09	764.3	30.14	765.5	81	27.2	74	E	1.2	0.5		8cs	0	Calm		0	0	Cloudy	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.04	763.0	30.05	763.3	79.6	26.4	75	Calm	0	0		0	0			0	0	Fine	Maxwell Hall.
Navassa, W. I	29.94	760.5	30.02	762.5	81	27.2	77	Calm	0	0		5ck	5s	SE	E	0	0	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A	30.07	763.8	30.07	763.8	78	25.6	86	E			2	5k	8ks	E		0.840	21.34	½ cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.41	747.0	29.97	761.2	79	26.1	89	S			1		Fog			0	0		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		SE					8k		SE	0	0	Covered	Earl Flint.
Santiago de Cuba, W. I	30.07	763.8	30.09	764.3	82	27.8	70	NNE	6	2.7		8c	4n		E	0.15	3.8		Robert Mason
St. Thomas, W. I																			G. O. Gyllich.
York Factory, B. A	29.77	756.1	29.82	757.4	62.0	16.7	91	S	15	6.7		1c	0	S		0	0	Fair	J. Fortescue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?) ft., or 472 (?) m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100 (?) ft., or 335 (?) m.; Fredericksburg, 1,614 (?) ft., or 492 (?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m., Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.8 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.858 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.38 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.50 in., or 63.5 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.11	764.8	80	26.7	78	SW	11	4.9			5d		SW					Fair	
Navy Yard, Portsmouth, N. H.	29.71	754.6	75	23.9	77	WNW	7	3.1			0			0	0			Clear	
Naval Hospital, Yokohama, Japan	29.76	755.9	71.5	21.9	92	Calm			0		Haze		Calm	0	0			Clear	
§ Adams, Chimbote, Peru	30.02	762.5	67	19.4	84	ESE			1		10		SE					Cloudy	
§ Alaska, S 15° 23′, W. 75° 25′ *	29.98	761.5	62	16.7	77	ENE			2		10					Long	SW	Cloudy	
§ Alert, Port Lloyd, Bonin I'd	29.81	757.2	82	27.8	77	Calm			0		8		S	0	0	Smooth		Cloudy	
§ Alliance, Eastern Shoals N. 46° 25′, W. 50° 29′	30.00	762.0	48	8.9	92	NNE			1		10		Calm	0	0	Smooth	E	Cloudy	
§ Ashuelot, N. 35° 29′, E. 135° 58′	29.77	756.1	74	23.3	81	ENE			1		10		Calm			None		Cloudy	
§ Colorado, New York, N. Y.	29.82	757.4	76	24.4	73	WSW	2	0.9			0							Clear	
§ Constellation, Navy Yard, Brooklyn, N. Y.	29.72	754.9	76	24.4	82	W			1		0							Clear	
§ Constitution, Navy Yard, Brooklyn, N. Y.	29.83	757.7	77	25.0	73	WSW	5	2.2			1		Calm					Hazy	
§ Franklin, Off Navy Yard, Norfolk, Va	29.89	759.2	80	26.7	70	S	8.4	3.8			0			0.45	11.4			Clear	
§ Independence, Mare I'd, Navy Yard, Cal.	30.06	763.5	58	14.4	76	W	2.4	1.1			10		W	0	0			Overcast	
§ Jamestown, Sitka, Alaska *	30.11	764.8	50	10.0	93	W			5		10					Mod'ate	S	Misty	
§ Kearsarge, Boston, Mass	29.74	755.4	80	26.7	74	WSW			2		2					Smooth		Clear	
§ Lackawana, N. 1° 03′, W. 80° 05′ †	30.05	763.3	78	25.6	86	SW			3		10		SW			Smooth	SW	Cloudy	
§ Marion, S. 35° 03′, W. 55° 20′	30.32	770.1	48	8.9	85	S			5		10			0	0	Mod'ate	S	Cloudy	
§ Michigan, Erie, Pa	29.79	756.7	69	20.6	80	NW			3		8		W					Cloudy	
§ Monocacy, Chefoo, China	29.62	752.3	66	18.9	94	SE			1		10							Foggy	
§ New Hampshire, Port Royal, S. C.	30.15	765.8	80	26.7	52	S	11	4.9			1		Calm	0	0			Clear	
Nipsic, Alexandria, Egypt	29.72	754.9	80	26.7	74	NW			4		2							Hazy	
§ Onward, Chimbote, Peru †	29.99	761.7	66	18.9	79	SSE			2		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.65	753.1	78	25.6	91	NE			1		10							Drizzling	
§ Passaic, Washington, D. C.	29.89	759.2	77	25.0	86	SW			1		2			0	0			Fair	
§ Pensacola, Vallejo, Cal	29.99	761.7	54	12.2	87	SW			1–3		10		SW			Smooth		Cloudy	
§ Portsmouth, N. 37° 40′, W. 41° 04′	30.05	763.3	72	22.2	95	W			3		10		WNW			Mod'ate	W	Cloudy	
§ Powhatan, New York, N. Y.	29.82	757.4	78	25.6	82	SW			2		2							Fair	
§ Quinnebaug, Stockholm, Sweden	29.70	754.4	61	16.1	88	SSW			3		10		SW			Smooth		Fair	
§ Richmond, Kobe, Japan	29.78	756.4	72	22.2	90	W			1		10		W	0.57	14.5	Smooth		Cloudy	
§ Saratoga, Naples, Italy	30.06	763.5	70	21.1	90	E			1		0			0	0			Clear	
§ Shenandoah, Buenos Ayres, Argentine Republic	30.43	772.9	49	9.4	78	S			2		8		S			Smooth		Fair	
§ St. Louis, League Island, Pa	29.85	758.2	77	25.0	91	SW	8	3.6			2			0	0			Clear	
Swatara, N 24° 51′, E 119° 01′			81	27.2	87	SSE			4		2		SE			Mod'ate	SE	Clear	
§ Tennessee, New York, N. Y.	29.84	757.9	80	26.7	66	WSW			1–2		0			0.25	6.3			Hazy	
§ Ticonderoga, Nagasaki, Japan	29.76	755.9	78	25.6	95	SW			2		10		Calm			Smooth		Drizzling	
§ Trenton, N. 59° 28′, W. 1° 00′	30.12	765.0	61	16.1	77	WSW			1		8			0	0	None		Cloudy	
§ Vandalia, Boston, Mass	29.75	755.6	75	23.9	77	W			2		2		W					Fair	
§ Wabash, Boston, Mass	29.73	755.1	77	25.0	73	W	7	3.1			2			0	0			Clear	
§ Wachusett, Coquimbo, Chili	30.04	763.0	54	12.2	93	ESE			0–1		2		E			Smooth		Clear	
Wyoming, N. 38° 28′, W. 12° 07′	30.20	767.1	63	17.2	83	NNW			4		5		N			Mod'ate	N	Fair	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, N. 48° 53′, W. 47° 06′	30.00	762.0	45	7.2		SSE			2		10		S			Smooth	SSE	Light fog	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth, Jr
S. S. Indiana, R. W. Sargent, N. 39° 46′, W. 65° 09′	29.95	760.7	76	24.4	91	S			4		2		SSW	0	0	Smooth		Clear	
S. S. Ohio, Henry Morrison, Off Tuskar Light, Ireland†	30.08	764.0	64	17.8		SW			2		5		SW	1 h'r	1 h'r	Smooth		Fair	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge.
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newburn, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undütsch, N. 38° 17′, W. 70° 26′	29.88	758.9	81	27.2	78	WSW			3		0			0	0	Smooth	WSW	Clear	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Bistus
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heimbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level. Inches.	Barometer reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Sea-swell. Character.	Sea-swell. Direction from—	Weather.	Observer.
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, N. 22° 21′, E. 115° 08′	29.56	750.8	88	31.1	88	S			5		n		SW	Heavy	Heavy	Rough	SW	Raining	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 42° 53′, W. 17° 33′ *	30.20	767.1	53	11.7	86	NNE			2		1			0	0	Slight	NW	Blue sky	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon†	29.92	760.0	55.5	13.1	84	S			2		10ks		NW			Smooth		Cloudy	J. M. Lachlan.
S. S. Oregon, E. Polemann																			L. Augerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander, San Francisco, Cal.	30.09	764.3	52	11.1		W			2		10		W					Cloudy	
S. S. Orizaba, C. B. Johnson, N. 38° 48′, W. 118° 30′ †	29.94	760.5	57	13.9		NW			3		Fog		W	0	0	Smooth	NW	Light fog	Harrison & Marshall.
S. S. State of California, G. Debney, N. 38° 14′, W. 123° 10′ †	30.03	762.7	50	10.0		NW			2		8		W			Smooth		Cloudy	
S. S. Victoria, H. M. Haywood, Canal de Fuaro, N 48° W. 123° †	30.03	762.7	52	11.1	86	S			5		5		SW					Fair	James C. Hunter.

NOTE.—With some exceptions the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Panama, Panama.....†	29.90	759.4	79	26.1	95	NNW			2		2		N			Smooth		Clear	F. A. Johnston.
§ S. S. Australia, S. 5° 58′, W. 168° 58′.....†	29.94	760.5				NE			3		5					Mod'ate	E	Cloudy	Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	29.85	758.2	54	12.2	55	NNW			2		0							Clear.	W. H. Hawes.
§ S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 47° 05′, W. 159° 58′...†	30.22	767.6	48	8.9	92	S			3		10		SE	0	0	Smooth		Misty & foggy	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§ S. S. City of Tokio, J. Mahry																			F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama..... †	29.91	759.7	80	26.7	100	NNW			1		2		NW	0	0			Clear.	
§ S. S. Dakota, H. G. Morse. Esquimalt, Vancouver's I'd....†	29.92	760.0	60	15.6	82	Calm			0		0			0	0	None		Clear	
§ S. S. Granada, J. M. Cavarly N. 16° 01′, W. 98° 20′.....†	29.99	761.7	78	25.6	91	NE			3		10n		NE	Heavy	Heavy	Light	SSW	Sprinkling	C. T. Rode.
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†	30.04	763.0	56	13.3		NW			4		1		NW	0	0			Clear	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, S. 34° 21′, E. 172° 56′.....	29.69	754.1	61	16.1		W			6		2		W			High	Confused	Clear	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N. 46° 15′ W. 40° 07′....†	30.16	766.1	58	14.4	100	SE			4		10		SE			Mod'ate	S	Showery	J. Jones.
S. S. Celtic, B. Gleadell.																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.10	764.5	82	27.8		SW			5		1		S	0.10	2.5			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, N. 40° 31′, W. 71° 25′.....	29.83	757.7	74	23.3	76	W	6	2.7			0			0	0			Clear.	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 27° 20′, W. 35° 15′.....*†	30.32	770.1	79	26.1		ESE			1		0					Smooth	ESE	Clear	B. F. Woodbury.
Schr. Delia Hodgkins, N. 59° 13′, W 40° 05′.....†	29.81	757.2				NW			7		10		W			Cross	NW	Cloudy	S. S. Miner.
Brigantine George, W. H. Champlin, N. 27° 27′, W. 65° 35′.....†	30.37	771.4	83	28.3		W			1		0			0	0	Mod'ate	SE	Clear	
Iron Cross, W. Randall, N. 36° 46′, W. 68° 28′.....*	30.00	762.0	80	26.7	91	SW			5		4		WSW	0	0	Mod'ate	W	Misty.	W. Randall.
British Barque Ivigtut, Adam Smith. N. 46° 01′, W. 51° 20′....*	30.00	762.0				SW			0		0					Smooth long	WSW	Clear.	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.85	758.2	62	16.7	94	SSW			1		5		E	0	0			Very fine	James S. Garvin.

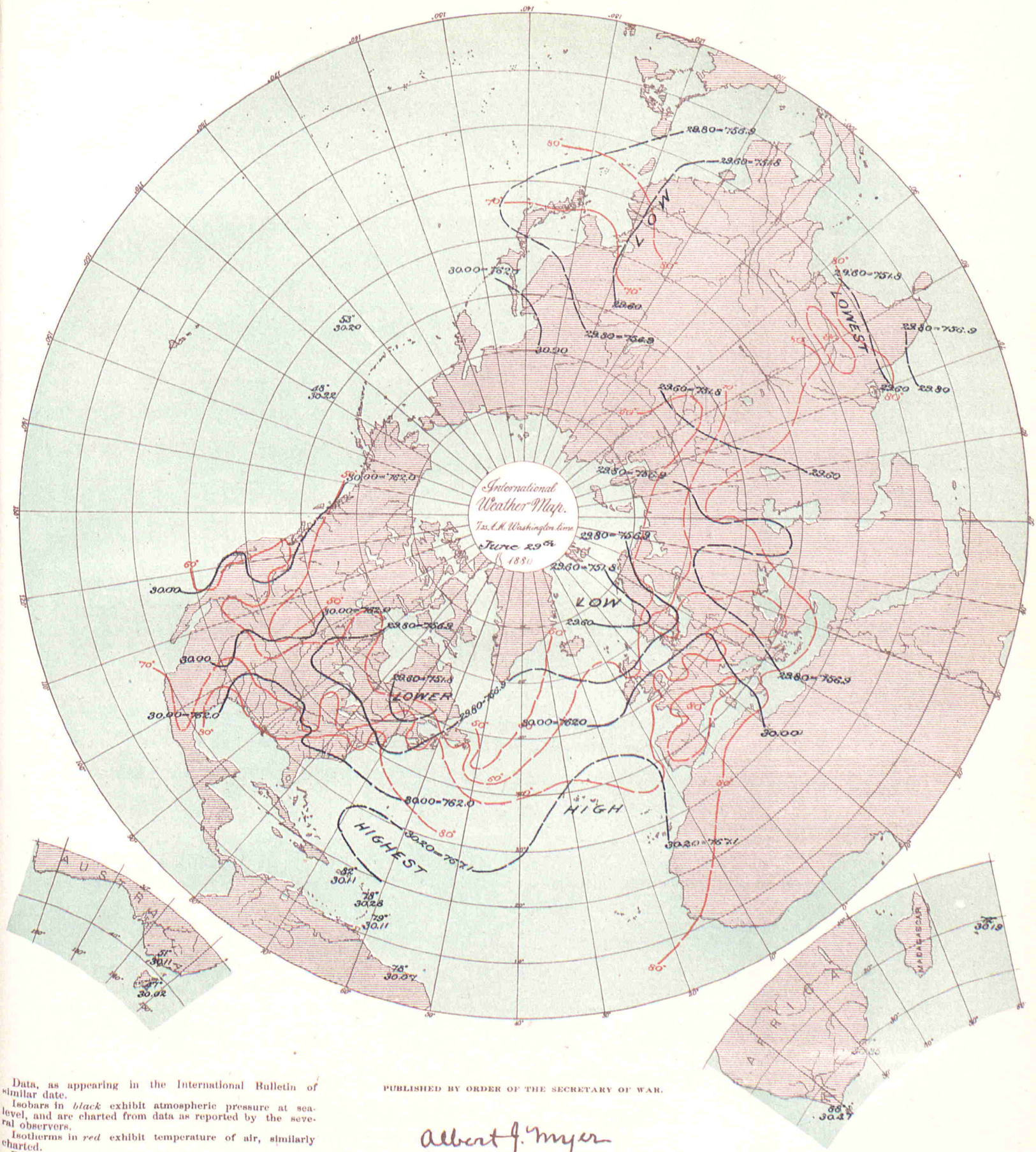
NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *Instrumental error not known.

COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

PUBLISHED BY ORDER OF THE SECRETARY OF WAR.

Albert J. Myer

BRIG. GEN., (BVT. ASSG'D,) CHIEF SIGNAL OFFICER, U. S. A.

The Heliotype Printing Co. 211 Tremont St. Boston.

BULLETIN

OF

INTERNATIONAL METEOROLOGICAL OBSERVATIONS,

TAKEN SIMULTANEOUSLY ON JUNE 30, 1880.

7:35 A. M. WASHINGTON Mean Time.

2:12 A. M. HONOLULU mean time.
6:7 A. M. MEXICO mean time.
7:7 A. M. SAN JOSE mean time.
7:25 A. M. TORONTO mean time.
9:2 A. M. PARAMARIBO mean time.
0:6 P. M. LISBON mean time.
0:28 P. M. MADRID mean time.
0:43 P. M. GREENWICH mean time.
0:53 P. M. PARIS mean time.
1:1 P. M. BRUSSELS mean time.
1:4 P. M. UTRECHT mean time.
1:13 P. M. BERNE mean time.
1:26 P. M. CHRISTIANIA mean time.
1:33 P. M. COPENHAGEN mean time.
1:33 P. M. ROME mean time.
1:37 P. M. BERLIN mean time.
1:49 P. M. VIENNA mean time.
1:55 P. M. STOCKHOLM mean time.
1:57 P. M. CAPE TOWN, C. G. H., mean time.
2:18 P. M. ATHENS mean time.
2:39 P. M. CONSTANTINOPLE mean time.
2:44 P. M. ST. PETERSBURG mean time.
4:33 P. M. MAURITIUS mean time.
6:36 P. M. CALCUTTA mean time.
8:49 P. M. ZI-KA-WEI mean time.
10:2 P. M. TOKEI (YEDDO) mean time.
10:23 P. M. MELBOURNE mean time.

On and after January 1st, 1881, the times for simultaneous international meteorological observations will be 35 minutes earlier than the above; meanwhile any such early observations will be published with a §.

ALGERIAN SERIES.

Furnished by the co-operation of General Maritz, Commandant Supérieur du Génie in Algeria.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the air. Fahrenheit.	Temperature of the air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 1—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mogador, Marocco																			
Nemours			29.96	760.9	83.7	28.7	43	WNW			1		0						Dr. Ollive.
Algiers			29.98	761.5	73.4	23.0	68	NNW			3		0			0	0	Clear	Metge.
La Calle			29.92	759.9	76.1	24.5	67	NW			4		6			0	0	Clear	Nicolas.
Tunis			29.97	761.1												Inap.	Inap.	Cloudy	Fonfrède.
Sfax			30.08	763.9															Jacques.
Saida			29.98	761.6															Gau.
Tebessa			29.94	760.5	86.0	30.0	21	SW			4		4			Inap.	Inap.	Cloudy	Charon.
Geriville			30.00	762.0	84.2	29.0	19				2		3			0	0	Pretty fair	Watrin.
Laghouat			29.98	761.5	87.6	30.9	28				3		0			0	0	Clear	Lonchamp.
Biskra			29.95	760.8	94.6	34.8	25				1		0			Inap.	Inap.	Clear	Herlin.
																			Baudasse.

NOTE.—The originals give no distinction between upper and lower clouds. The weather is published as given. The rain-fall is measured at 7 a. m., local time. The elevation of Saida is 890? meters, or 2,920? feet; Tebessa, 1,088? m., or 3,570? feet; Geriville 1,360? m., or 4,462? feet.

AUSTRO-HUNGARIAN SERIES.

Furnished by the co-operation of Professor Dr. Julius Hann, Director of the Imperial and Royal Central Meteorological Institute at Vienna.

Agram	29.36	745.8	29.88	759.0	79.7	26.5	53	SE			3		3			0	0		Prof. Ivan Stozir.
Cracow, I. R. Observatory	29.11	739.5	29.86	758.4	68.0	20.0	78	W	7.8	3.5			10			0.102	2.6		Dr. Wierzbicki.
Eperies	28.95	735.2	29.78	756.4	74.5	23.6	56	NW			3		5cs;s			0	0		Julius Mikolik.
Gratz	28.67	728.1	29.87	758.6	72.7	22.6	67	SSW			2		0			0	0		Andreas Rospini.
Hermannstadt	28.43	722.1	29.78	756.5	74.5	23.6	43	NW			2		6			0.018	0.45		Prof. A. Gottschling.
Kremsmünster, Observatory	28.55	725.1	29.82	757.4	76.1	24.5	55	Calm			0		2			0.020	0.5		The Staff.
Lemberg	28.82	732.1	29.78	756.3	65.7	18.7	78	W			2		7			0.870	22.1		Dr. T. Stanecki.
Pola	29.84	757.9	29.95	760.6	79.2	26.2	40	SSW			1		1			0	0		I.R. Hydrographic Office.
Szathmar	29.43	747.4	29.87	758.8	68.0	20.0	78	W			3		10			0	0		Pet. Pancsics, S. J.
Szegedin	29.57	751.1	29.84	757.9	74.7	23.7	52	W			1		5			0	0		Karl Stancel.
Trieste	29.85	758.3	29.96	760.9	78.4	25.8	63	Calm			0		0			0	0		P. Busin.
Vienna	29.18	741.1	29.92	760.0	66.6	19.2	54	NE			1		1			0.016	0.4		I.R. Central Met. Obs'y

NOTE.—The originals occasionally give the weather by the Vienna symbols or in general terms, but it is not always certain that they refer to the moment of simultaneous observation. The distinction between upper and lower clouds is not made. The rain-fall is measured at Vienna at 2 p. m., local time; at Lemberg at 7 p. m., local time; at Trieste at 7 a. m. of the following day. The elevation of Gratz is 357 meters, or 1,171 feet; Hermannstadt, 411.6 meters, or 1,350.4 feet; Kremsmünster, 384 meters or 1,260 feet. At Eperies the observations have been taken at 2, instead of 2:8 p. m., local time.

BELGIAN SERIES.

Furnished by the co-operation of J. C. Houzeau, Director of the Royal Observatory at Brussels.

Arlon																			Prof. M. Passau
Brussels	29.59	751.6	29.78	756.4	77.5	25.3	55	SSW			1	9	1		SSW	0.161	4.10		Royal Observatory.
Furnes	29.81	757.1	29.83	757.7	72.1	22.2	62	NNW			2		10			0.398	10.1	Thunder-storm.	M. E. de Cae.
Maeseyck																			M. Pierrot.

NOTE:—The originals occasionally give the weather by the Vienna symbols. Except for Brussels, the distinction between upper and lower clouds is not made. The elevation of Arlon is 418 meters, or 1,371 feet. At Arlon the observations have been taken at 1:0, instead of 1:6 p. m.; Furnes, 1:0 instead of 0:54 p. m.; Maeseyck, 1:0, instead of 1:6 p. m., local time.

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BRITISH SERIES.

Furnished by the co-operation of the Meteorological Council, London, Robert H. Scott, Esq., F. R. S., Secretary; and Alexander Buchan, M. A., F. R. S. E., Secretary of the Scottish Meteorological Society, Edinburgh, and the respective Observers.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lw'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Aberdeen	29.55	750.6	29.64	752.8	58.6	12.0		ENE	11	4.9			10			0.590	14.99	Raining	W. Boswell.
Ardfossa	29.61	752.1	29.63	752.6	61	16.1		WNW			1		7					D. clouds	G.Carrick.
Armagh, (Observatory)	29.49	749.0	29.72	754.9	60.9	16.1		WNW	6	2.7			10					Gloomy	S. Call.
Bidston (Liverpool Obs)			29.73	755.1	62.4	16.9		W	10	4.5			9					Overcast	John Hartnup.
Bolton (Sharples)	29.20	741.7	29.70	754.4	59.8	15.4		SW	5	2.2			10					Gloomy	Thomas Mackereth.
Bradford, Yorkshire	29.32	744.7	29.71	754.6	61.2	16.4	76	W			2		10			0.02	0.5	Overcast	J. McLandsborough.*
Bridgetown, Barbadoes	30.08	764 0	30.11	764.8	83	28.3		NE			3		5					D. clouds	Pvt.G.Surgener, A.H.C.
Cambridge (Observatory)	29.67	753.6	29.76	755.9	72.0	22.2		SW			1		2k					D. clouds	H. Todd.
Cardington			29.75	755.6	72.0	22.2		W			0.4		5					D. clouds	John McLaren.
Chatham (School M. E.)	29.67	753.6	29.80	756.9	67.0	19.4		Calm			0		9k					D. clouds	Lance Crp'l Hocker,R.E.
Donaghadee	29.65	753.1	29.69	754.1	60	15.6		W			4		10					Overcast	J. Mac Gowan.
Dover	29.75	755.6	29.78	756.4	62	16.7		WSW			1		5					½ clouded	J. Costello.
Falmouth (Observatory)	29.60	751.8	29.83	757.7	61.2	16.2		S			1		10					Foggy	The Staff.
Fort Napier, Natal	28.24	717.3	30.45	773.4	66.6	19.2		SE			1		8					Overcast	Corp'l H.Coombs,A.H.C.
Free Town, Sierra Leone	29.68	753.9	29.90	759.4	85	29.4		SE			1		10					D. clouds	
Galway (Queen's College)			29.73	755.1	59	15.0		NW			1		10					Raining	J. O'Donaghadue.
Gibraltar, Mediterranean.‖	29.97	761.2	30.02	762.5	76.6	24.8		SW			6		0					Blue sky	Pvt. O. Baldwin.
Glasgow, (Observatory)	29.41	747.0	29.62	752 3	59.9	15.5		W			4		9k					Gloomy	D. G. Maclean.
Great Yarmouth	29.76	755.9	29.77	756.1	72	22.2		W			2		3					Blue sky	G. T. Watson.
Greenwich (Royal Obs'y)	29.61	752.1	29.78	756.4	73.8	23.2		SW			1		8					D. clouds	The Staff, for G.B.Airy.
Guernsey	29.63	752.6	29.85	758.2	61	16.1		WNW			1		7					D. clouds	Dr.S.E Hoskins, F.R.S.
Helston	30.02	762.5	30.14	765.5	64	17.8		S			2					0	0	Misty	M. P. Moyle.
Holyhead	29.71	754.6	29.74	755.4	61	16.1		SSW			4		10					Misty	John Tilston.
Jersey	29.69	754.1	29.88	758.9	62.7	17 1		WNW			2		8					Gloomy	J. Fisher.
Kew (Observatory)	29.75	755.6	29.78	756.4	68.7	20.4		SW	6	2.7			6					D. clouds	The Met'g'l Office.
Leicester (Museum)	29.50	749.3	29.74	755.4	67.5	19.7		SW			1		9					D. clouds	Wm.J.Harrison,F.G.S.
Malta, Mediterranean	29.85	758.2	29.92	760.0	75.6	24.2		NE			2		0					Blue sky	A. King.
Nairn	29.51	749.5	29.60	751.6	60	15.6		NE			1		10					Overcast	W. D. Penny.
Nassau, Bahamas			30.18	766.6	84.2	29.0		SE			2		6					D. clouds	C. S. Duncombe.
Nottingham (Observatory)	29.57	751.1	29.75	755.6	71.1	21.7		WSW			3		7ks		W	0	0	D. clouds	E. J. Lowe, F. R. S.
Oscott (St. Mary's College)	29.24	742.7	29.75	755.6	65.6	18.6		WSW			3		9					D. clouds	Rev. Stephen J. Whitty
Oxford (Radcliffe Obs'y)	29.55	750.6	29.81	757.2	68	20.0		W			1		5					D. clouds	The Staff, for E. J. Stone, Esq.
Plymouth	29.76	755.9	29.83	757.7	61.8	16.6		S			1		10					Misty	John Merrifield.
*Roche's Point	29.70	754.4	29.84	757.9	64	17.8		WSW			3		10					Raining	Wm. Kennedy.
St. Ann's Head	29.62	752.3	29.79	756.7	59	15.0		SW			2		10					Foggy	John C. Walker.
Sandwick Manse, Orkneys			29.70	754.4	57.2	14.0		E	11	4.9			10					Overcast	Rev. C.Clouston,L.L.D.
Scutari Cemetery, Turkey	29.71	754.6	29.77	756.1	69.8	21.0		NNE			2		9					D. clouds	Serg't W. H. Lyne.
Sheffield	29.69	754.1	29.97	761.2	66.1	18.9		SW			1		4			0.07	1.8	D. clouds	W. F. Cooper.
Silloth Rectory	29.64	752.8	29.67	753.6	59.6	15.3	94	W			3		10			0.094	2.39	Raining	Rev. F. Redford, A. M.
Stonyhurst (Observatory)			29.74	755.4	59.3	15.2		WSW	13	5.8			10					Overcast	Rev. S. J. Perry.
Stratfield Turgiss	29.59	751.6	29.80	756.9	71.3	21.8		W			3		5					D. clouds	Rev.C.H.Griffith,F.M.S.
Truro (Royal Institution)	29.84	757.9	29.85	758.2	68	20.0		SW			2		9					Gloomy	W. Newcombe.
Valencia (Observatory)	29.79	756 7	29.82	757.4	60.8	16.0		NW	12	5.4			7					D. clouds	The Met'g'l Office.
Sub-Series.																			
Beaufort West, Cape Colony																			
Cape Town (C. G. H. Obs'y)	30.35	770.9	30.39	771.9	69.9	21.1	52	NNW	2.1	0.9		0	0			0	0	Clear	The Staff, for D. Gill.
Hobart Town, Tasmania			29.93	760.2	46.0	7.8	74	SW			1		10kn			0.85	21.6	Raining	Francis Abbott, F.R.A.S.
Leith (Restalrig Park) Sc'tl'd			29.62	752.3	68.0	20.0		W			4		7k			0	0	Cloudy	Andrew Gibb.
Mauritius (Observatory)	29.98	761.5	30.17	766.4	70.4	21.3	73	SE	9.5	4.2			10			0.04	1.0	Cloudy	C. Meldrum.
Melbourne (Observatory)	29.85	758.2	29.94	760.5	45.0	7.2	85	WNW	12	5.4			10			0.47	11.9	Showery	R. L. J. Ellery.
Monach Lt-house, Hebrides			29.65	753.1	61	16.1		NW			2	5	5	N		0.1	3.		J. Youngclause.
North Unst, Shetland I's			29.72	754.9				NW			2	2	7	W		0	0		Robert Burnet.

NOTE.—Generally, the originals do not give the relative humidity, rain-fall, or distinction between upper and lower clouds. They give the wind direction to 32 points; the weather by the Beaufort notation; the barometer, for Cardington, Galway, Oxford, Sandwick, Leith, Monach, and North Unst, as read off; Freetown reduced to freezing, but not to sea-level. *Second barometer is corrected for index error, but the first is not. The wind-force is given by the scale 0 to 12 in the official series, and by 0 to 6 in the sub-series; except in lbs. per square foot for Greenwich and Hobart Town. The rain-fall is measured at Bradford at 9 a. m.; Hobart Town, 7:30 a. m.; Nottingham, 6 p. m.; Mauritius, 9 a. m., and on the following day at Aberdeen at 10 a. m., Helston, 9 a. m.; Sheffield, 8 a. m. The elevation of Fort Napier is 2,200 feet, or 670 meters. ‖ These observations are taken at 1 h. 9 m., instead of 12 h. 43 m., p. m., Greenwich time.

British Marine Series. Vessels.	Sea or swell. Height scale 0—9	Sea or swell. Direction 16m—	Weather.	Observer.
H. M. S Alert				Capt.J.P Maclear, R.N.
City of Agra				Capt. Thos. Young.
City of Cashmere				Capt. W. M. Grieve.
Barque Commewyne				Capt. Jas. Buchan.
Ship British Commodore				Capt. J. W. Thorne.
Barque Decapolis				Capt. T. M. Almond.
Barque Dochra				Capt. H. Spalding.
Barque Elissa, Off Brandy Pots, Quebec	8	smooth	Gloomy	Capt. A. Watson.
S. S. Ethiopia				Capt. A. Campbell.
Barque Fedalma				Capt. H. L. Fox.
Brig. Fylde				Capt. L. C. Dart.
S. S. German				Capt. C. D. Coxwell.
S. S. Gordon Castle				Capt. Wm. Waring.
Barque Hope				Capt. Jas. Campbell.
Iron Cross, N. 37° 40′, W. 66° 10′	2	W	D. clouds	Capt. W. Randall.
Ship Lochee, S. 33° 05′, E. 15° 30′			Blue sky	Capt. J.Raeburn, R.N.R.
Barque Mertola, N. 52° 41′, W. 5° 35′			Foggy	Capt. E. W. Turner.
Barque Queen of Cambria				Capt. M. Parry.
S. S. Richmond				Capt. W. H. Stuart.
Barque Royal Alexandra				Capt. W. P. Hughes.
S. S. Strathleven				Capt. C. W. Pearson.
S. S. Sunbeam				Capt. C. M. Dobson.
S. S. Wyberton, N. 48° 22′, W. 5° 51′			Drizzling	Capt. R. J. Blacklin.

NOTE.—The originals give the wind-directions to 32 points, which have been corrected for magnetic variation at this office, when necessary; the force by the Beaufort scale 0 to 12; the distinction between upper and lower clouds is made as to direction, but not as to amount; the height of sea-disturbance by the scale 0 to 9; weather by the Beaufort notation. The barometers and thermometers used on these vessels have generally been carefully compared with English standards and corrected.

COSTA RICA SERIES.

By authority of the MINISTER OF FOREIGN AFFAIRS.

Furnished by the co-operation of Senor Federico Maison, Director of the Central Office of Statistics and Meteorology.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. L'w'r 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer
San José	26.33	668.8	29.95	760.7	66.6	19.2	98	SE			1	10s				0	0	Cloudy	Federico Maison.

NOTE.—For San José the barometer is given as read off; it is reduced to sea-level by the use of a constant 3.72 inches or 94.5 mm., for an altitude of 1,145 meters, or 3,757 feet; its instrumental error is not known; the rain-fall is apparently measured at following midnight.

DANISH SERIES.

Furnished by the co-operation of Captain N. Hoffmeyer, Director of the Royal Danish Meteorological Institute at Copenhagen.

Copenhagen	29.71	754.5	29.75	755.7	64.0	17.8	84	WSW			2		10					Foggy	
Fanöe	29.70	754.4	29.72	754.9	63.9	17.7	85	WSW			4		10						
Godthaab (Greenland)																			
Stykkisholm (Iceland)	29.55	750.6	29.60	751.7	54.7	12.6	77	SE			2		8						
Thorshavn (Faröe)	29.65	753.0	29.68	753.9	55.6	13.1	68	W			3		10						
Vestervig	29.59	751.6	29.69	754.0	61.5	16.4	87	SW			4		10						

NOTE.—The originals give the wind-force by the scale 0 to 6; occasionally, the weather by the Vienna symbols, but it is not certain that they always refer to the moment of simultaneous observation; no distinction between the amount of upper and lower clouds.

FRENCH SERIES.

Furnished by the co-operation of the Central Meteorological Bureau of France, Prof. E. Mascart, Director, and the respective observers.

Alençon, Normal School	29.28	743.6	29.83	757.6	79.7	26.5	55	SW			1		8ks		SW	0	0	Very cloudy	Collignon, Director.
Amiens, Normal School	29.69	754.0	29.79	756.6	84.6	29.2	55	SW			1		0			0	0	Clear	Vaillant, Director.
Arras, Engineer School	29.51	749.5	29.76	755.9	63.0	17.2	12	N			2		10	E		0	0	Covered	Klein, Commandant.
Avignon, Normal School	29.88	759.0	29.96	761.0	83.3	28.5	44	S			1		0			0	0	Very clear	Giraud, Director.
Bar-sur-Seine	29.26	743.2	29.78	756.5	81.7	27.6	52	SW			1		8k		W	0	0	Cloudy	C. Saillard, Director.
Beauvais, Normal School	29.53	750 1	29.78	756.4	82.9	28.3	50	S			1		10			0	0	Covered	Frère Eugene Marie.
Besançon, Normal School	29.02	737.0	29.85	758.2	81.5	27.5	81	S			1		0			0	0	Clear	A. Carré, Director.
Bordeaux	29.75	755.7	29.95	760.7	66.6	19.2	80	W			1		10		WSW	0	0	Covered	M. Rayet, Director.
Bourg-en-Bresse, N. School	29.03	737.4	29.96	760.9	87.1	30.6	44	SE			1		0			0	0	Clear	Marlot, Director.
Bourges, Normal School	29.35	745.4	29.87	758.7	81.1	27.3	68	WSW			3		cs		WSW	0	0		M. Gence, Director.
Brest, Naval Observatory	29.65	753.0	29.89	769.1	65.8	18.8	84	Calm			0		10			0	0	Misty	Ch. de Rermaree, Dir.
Caen, Normal School	29.74	755.3	29.81	757.1	60.8	16	54	W					10		W	0	0	Covered	M. Bietrix, Director.
Carcassonne, N. School	29.54	750.2	29.93	760.3	75.6	24.2	60	W			1		2	E	W	0	0	Slightly, cld'y	September, Director.
Châlons-sur-Marne, N. Sch'	29.49	749.0	29.79	756.6	86.0	30.0	50	SSE			1		2		SW	0	0	Slightly cl'dy	Jadot, Director
Chartres, Normal School	29.22	742.1	29.75	755.6	81.0	27.2	87	SW			1		9		NE	0	0		E. Lequint, Director.
Clermont-Fd, Puy de D. Obs	28 53	724.7	29.80	756.9	83.7	28.7	36	W			2		5			0	0		Alluard, Director.
Commercy, Normal School	28.99	736.3	29.80	756.9	77.4	25.2	42	SE			1		2k		SE	0	0		Dr. Coullet, Director.
Commune de Gréasque*	28.89	733.7	30.03	762.7	81.5	27.5	23	SW			2		2		S	0	0		L. Kina, Director.
Grenoble, Normal School	29.10	739.0	29.82	757.5	80.2	26.8	56	NW			2		2k			0	0		Ablard, Director.
La Roche-sur-Yon, N. Sch'	29.71	754.5	29.91	759.7	72.7	22.6	69	SW			1		0			0	0	Clear	Mouillot, Director.
Le Mans, Normal School	29.52	749.9	29.82	757.4	78.8	26	61	W			4		5		SW	0	0	Cloudy	Poirrier, Director.
Lons-Le-Saulnier, N. School	29.00	736.7	29.89	759.2	79.5	26.4	53	SW			1		0					Clear	M. Cadoret, Director
Lorient, Naval Observatory	29.79	756.6	29.89	759.2	65.5	18.6	78	W			2		10		W	0	0	Covered	Lt. T. Carré, Director.
Lyons Obs'y (Park Station)	29.37	746.1	29.85	758.2	82.9	28.3	44	S			2		0			0	0	Clear	Ch. André, Director.
Mâcon, Normal School																			Galzin, Director.
Marseilles, Observatory	29.71	754.7	29.97	761.3	76.6	24.8	59	WSW			1		0			0	0	Clear	E. Stephan, Director.
Mirecourt, Normal School	28.78	731.1	29.77	756.2	77.7	25.4	33	SW			1		2s		SW	0	0		Barbier, Director.
Mont-Louis																			M. Cave, for Dr. Fines.
Nice	29.94	760.4	29.97	761.3	77.0	25.0	69	SE			1		1	S	SE	0	0	Clear	Capt. Boissière, Director.
Nismes, Normal School	29.74	755 4	29.98	761.4	82.9	28.3	47	W			1		0			0	0	Clear	M. Boyer, Director.
Perpignan	29.63	757.6	29.93	760.2	78.3	25.7	57	SE	7 4	3.3			1	E		0	0		Dr. Fines.
Pic du Midi (Plantade) H. P	22.63	574.7			55.8	13.2							10		S	0.106	2.7	Rainy	M. Baylac, for Gen'l de Nansouty
Pic du Midi (Summit) H. P.																			
Privas, Normal School	28.89	733.9	29.90	759.4	82.6	28.1	38	N			1		0			0	0	Clear	M. Tallieu
Puy de Dome (Summit) Obs	25.17	639.3			61.0	16.1	79	WSW			4		2			0	0	Misty	Alluard, Director.
Rochefort, Naval Obs'y	29.92	760.0	29.95	760.8	72.3	22.4	77	SW			2		8	SW	SW	0.16	4.	¾ covered	Lt E. Devante, Director
Rouen, Normal School	29.68	753.9	29.77	756.2	73.8	23.2	72	N			1		8		W	0	0	Very cloudy	Platrier, Director.
Saint Malo (Port) Obs'y	29.82	757.4	29.85	758.2	62.6	17.0	82	WNW			2		8	WNW	WNW	0.116	2.95	Very cloudy	Lt. Hercouet, Director.
Saint Maur (near Paris)	29.62	752.3	29.78	756.5	84.2	29.0	39	SSW			1		10	WSW	SSW	0	0	Covered	E. Renou, Director.
Tarbes, Normal School	28.95	735.4	30.02	762.5	59.0	15	59	W			1								T. Huguet, Director
Toulouse, Observatory	29.33	745.0	30.06	763.4	67.6	19.8	77	SW			1		10			0	0	Covered	B. Baillard, Dir.
Tours	29.61	752.0	29.80	757.0	81.0	27.2	50	W			3		10		SSW	0	0	Covered	M. de Tastes.
Versailles, Observatory	29.30	744.1	29.79	756.6	83.8	28.8	40	SW			1					0	0		Dr. A. Berigny, Director
Villefranche-sur-Saone, N.S	29.14	740.2	29.80	757.0	87.8	31	37	E			1		2			0	0	Slightly cld'y	Nicot, Director.
SUB-SERIES.																			
Fort de France, Martinique	30.28	769.0	30.30	769.7	79.5	26.4										0.35	9.		L'Abbé Marchési.
Paris, Montsouris Obs'y	29.52	749.7			80.8	27.1	51	S			1		9		SW	0	0		Marié Davy, Director.
Zi-Ka-Wei (near Shanghai)	29.52	749.8	29.55	750.5	74.8	23.8	100	ESE	7.6	3.4			10n			1.555	39.5	Raining	Marc Decheyrens, SJ, Dir

NOTE.—The originals give the wind-force by the scale 0 to 6, except Mont-Louis, Perpignan and Zi-Ka-Wei in meters per second; the rain-fall as measured at 9 a. m., local times, except Toulouse at 7 a. m., and Lyons, Pic du Midi, (P.) Fort de France, and Zi-Ka-Wei at the moment of simultaneous observation; clouds on the scale 0 to 4 for Clermont-Fd, Commune de Gréasque and Puy de Dome, the rest on the scale 0 to 10, or in general terms, from which the amount of cloudiness is inferred; no distinction between upper and lower clouds; weather occasionally by Vienna symbols for Mont-Louis and Perpignan, but otherwise in general terms. At St. Maur, the observations have been taken at 1:00 instead of 0:53 p. m., local time. The elevation of Clermont-Ferrand is 388 meters, or 1,273 feet; Commune de Gréasque, 322 m., or 1,056 ft.; Mont-Louis, 1,580.40 m., or 5,[illegible]4.8 ft.; Pic du Midi, (Plantade) 2,366 m., or 7,763 ft.; Pic du Midi, (Summit) 2,877 m., or 9,439 ft.; Puy de Dome, (Summit) 1,467 m., or 4,813 ft.; Tarbes, 308.41 m., or 1,032.97 ft. In correcting the Mont Louis barometric observations for altitude the constant 133 millimeters, or 5.24 inches has been added. *Bouches-du-Rhône.

GERMAN SERIES.

Furnished by the co-operation of Professor Dr. G. Neumayer, Director of the German Marine Observatory, Hamburg

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Upper 0–10.	Clouds. Amount. Lower 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Bamberg	29.00	736.7	29.87	758.5	78.3	25.7	49	W			4		1cs			0	0		Prof. Dr. Hoh.
Berlin	29.64	752.9	29.80	757.0	79.9	26.6	45	NW			3		6			0.024	0.6		Prof. Dr. Arndt.
Breslau	29.36	745.8	29.89	759.2	74.5	23.6	55	WNW			3		4			0.213	5.41		Royal University Obs'y
Carlsruhe	29.40	746.7	29.80	756.9	80.2	26.8	55	SW			1		0			0	0		Albert Senz.
Cassel	29.21	742.0	29.82	757.3	81.3	27.4	44	SW			2		4	SW		0	0		Dr. H. Möhl.
Emden																			Prof. Dr. Prestel.
Frankfort on the Main	29.50	749.2	29.80	758.4	82.0	27.8	28	S			1		2			0	0		Physical Society.
Friedrichshafen	28.48	723.3	29.85	758.3	71.2	21.6	65	SW			3		1	SW		0	0		Chief Telegrapher Wilhelm.
Hamburg	29.72	755.0	29.80	756.8	72.6	22.5	68	WSW			3		6			0.091	2.3		Dr. Reinhold Kleeman.
Kiel	29.76	755.9	29.78	756.3	71.1	21.7	67	WSW			4		6			0.007	0.18		Prof. Dr. G. Karsten.
Königsberg (Prussia)	29.72	754.8	29.80	756.9	68.2	20.1	74	W			3		5	W		0.004	0.1		Prof. E. Luther.
Köslin																			H. Müller.
Leipsic Observatory	29.45	748.1	29.55	758.3	79.2	26.2	44	SW			2		5	WSW		0	0		Prof. Dr. Bruhns, Privy Counsel'r
Magdeburg	29.61	752.1	29.84	757.8	78.8	26.0	50	SW			3		7k	SW		0	0		Dr. Assmann.
Memel	29.73	755.2	29.78	756.4	65.5	18.6	81	W			4		8					Hazy	Reinbrecht & Issermann.
Munich	28.06	712.7	29.91	759.8	76.3	24.6	38	N			2		1			0	0		Dr. C. Lang.
Neufahrwasser	29.80	756.8	29.81	757.2	72.7	22.6	56	NW			2		7	W		0.012	0.3		A. Lothes.
Neustadt (Palatinate)	29.32	744.6	29.84	757.9	81.5	27.5	43	SE			1		2			0	0		Reallehrer Dicknether.
Posen	29.56	750.8	29.84	757.8	73.9	23.3	51	W			4		3			0.091	2.3		Prof. Dr. Magener.
Strassburg (in Alsace)	29.32	744.8	29.84	758.0	83.1	28.4	43	S			1		1			0	0		Imp. University Observatory.
Stuttgart	28.89	733.8	29.72	754.9	84.2	29.0	27	SW					1	W		0.157	4.0		Prof. Dr. Schoder.
Thorn	29.61	752.1	29.80	756.8	73.8	23.2	55	W			3		5			0.303	7.7		Dr. Cunerth.
Weissenburg (Bavaria)	28.43	722.2	30.01	762.2	76.6	25.9	42	NW	0.7	0.3		2c		N		0	0		Reallehrer J. Hopfner.
Wustrow	29.80	756.9	29.83	757.6	66.2	19.0	76	W			3		8s			0	0		E. Schütz, Director.
German Naval Series.																			

NOTE.—The elevation of Friedrichshafen is 413.3 meters, or 1,356.0 feet; Munich, 528.5 m., or 1,405.9 ft.; Weissenburg, 431 m., or 1,414 ft. In the originals the distinction between the amount of upper and lower clouds is not made; the wind-force at Carlsruhe is given by the scale 0 to 4. Except for Munich, it is not certain that the rain-fall has been measured at, or that the remarks in the weather column refer to, the moment of simultaneous observation. At Königsberg observations have been taken at 2:0, instead of 2:5, p. m.; Memel, 2:1, instead of 2:7, p. m.; Posen, 2:0, instead of 1:51, p. m., local time.

GREEK SERIES.

Furnished by the co-operation of Professor Dr. J. F. Julius Schmidt, Director of the Royal Observatory at Athens.

Athens	29.48	748.8	29.86	758.4	78.1	25.6		NE			2.0		5					½ clear	Dr. J. F. J. Schmidt.

NOTE.—The originals give the barometer reduced to freezing but not to sea-level; the weather as published; occasionally the kind of clouds, and the amount is inferred from the general terms published in the weather column.

INDIAN SERIES.

Furnished by the co-operation of H. F. Blanford, Meteorological Reporter to the Government of India.

Kurrachee	29.33	745.0	29.38	746.3	86.6	30.3	82	SSW	25.9	11.6			8		SSW	0	0	Misty	
Deesa	28.95	735.2	29.41	746.9	87.2	30.7	63	S					9	SW		0.02	0.5	D. clouds	
Bombay	29.57	751.1	29.61	752.1	78.9	26.1	94	W	28.0	12.5			10		SW	1.02	25.9	Overcast	
Poona (Yarrowda)	27.78	705.6	29.64	752.9	72.8	22.7	92	WSW	15.0	6.7			10	WSW	WSW	0.22	5.6	Drizzling	
Belgaum	27.18	690.2	29.74	755.3	68.9	20.5	93	WSW	16.0	7.2			10		SW	0.99	25.2	Showery	
Lahore	28.62	726.9	29.34	745.2	87.0	30.6	76	Calm	4.3	1.9			3			0.05	1.3	D. clouds	
Roorkee	28.55	725.0	29.44	747.7	78.4	25.8	86	SE	3.0	1.3			5			1.52	38.6		
Agra	28.87	733.4	29.43	747.5	79.7	26.5	78	E	4.7	2.1						0	0		
Nagpur	28.47	723.2	29.51	749.5	78.0	25.6	84	W	10.3	4.6			9		SW	2.31	58.7	Gloomy	
Jubbulpore	28.09	713.4	29.43	747.6	81.8	27.7	83	W	9.8	4.4			10			1.01	25.6	Overcast	
Lucknow	29.04	737.5	29.40	746.8	90.1	32.3	55	NNE	5.3	2.4						0	0	Blue sky	
Allahabad	29.06	733.1	29.36	745.7	97.1	36.2	42	NNE	2.8	1.2			5			0	0	D. clouds	
Patna	29.23	742.4						E	3.1	1.4			6	E	E	0	0	D. clouds	
Hazaribagh	27.42	696.5	29.40	746.8	79.3	26.3	75	E	9.0	4.0			4			0.06	1.5	Showery	
Cuttack	29.34	745.2	29.42	747.3	80.2	26.8	82	SW	3.5	1.6			10			0.37	9.4	Overcast	
Calcutta (Alipore)	29.41	746.9	29.43	747.4	77.7	25.4	93	SSE	5.0	2.2			10		SE	0.28	7.1	Showery	
Goalpara	29.10	739.1	29.50	749.3	84.0	28.9	77	S	1.9	0.8			7			0.32	8.1	D. clouds	
Chittagong	29.52	749.9	29.61	752.2	77.9	25.5	90	SE	6.9	3.1			9			0.02	0.5	D. clouds	
Sibsagar	29.14	740.2	29.47	748.5	87.9	31.0	93	NE	3.6	1.6			0			1.76	44.7	Blue sky	

NOTE.—The barometric observations refer to the Calcutta standard, which is believed to read 0.011 inch, or 0.28 mm. higher than the Kew standard. All conversions are published as given in the originals, where the data are recorded to an additional decimal; the weather is given by the Beaufort notation, Vienna symbols, or special symbols; the distinction between the amount of upper and lower clouds is apparently not made. The elevation of Poona is 1,848.2 ft., or 563.3 m.; Belgaum, 2,550 ft., or 777 m.; Nagpur, 1,025 ft., or 312 m.; Hazaribagh, 2,010 ft., or 613 m.; Jubbulpore, 1,351 ft., or 412 m. The velocity given is the average rate of wind since observation of the preceding day.

ITALIAN SERIES.

By authority of the MINISTER OF AGRICULTURE, INDUSTRY AND COMMERCE.

Furnished by the co-operation of Prof. P. Tacchini, Director of the Central Office for Meteorology, Rome, and the respective observers.

STATIONS	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Udine	29.55	750.6	29.95	760.7	70.3	26.3	54	SW	1.8	0.8			2			0	0		Prof. Giovanni Clodig.
Milan	29.41	746.9	29.90	759.4	81.9	27.7	39	E	3.1	1.4			0			0	0		Prof. Schiaparelli.
Padua	29.84	757.8	29.95	760.6	80.1	26 7	41	SE	4.9	2.2			0			0	0		Prof. Dott. Lorenzoni.
Moncalieri	29.01	736.9	29.89	759.2	80.8	27.1	43	E	1.8	0.8			2			0	0		Prof. P. F. Denza.
Genoa	29.78	756.4	29.97	761.2	73.0	22.8	70	SW	4.9	2.2			0			0	0		Prof. G. M. Garibaldi.
Mondovi	28.07	712.9	29.91	759.8	77.4	25.2	36	W			2		0			0	0		Prof. D. C. Bruno.
Pesaro	29.88	758.9	29.93	760.1	76.6	24.8	58	E	15.0	6.7			0			0	0		Prof. Luigi Guidi.
Florence	29.68	753.8	29.93	760.2	82.4	28.0	31	W			4		2			0	0		Cav. F. Meucci
Leghorn	29.89	759.3	29.98	761.4	75.9	24.4	48	W	3.1	1.4			0			0	0		Prof. P. Monte.
Rome	29.78	756.5	29.96	760.9	80.2	26.8	30	WSW					0			0	0		Prof. P. Tacchini.
Lecce	29.67	753.7	29.92	759.9	73.2	22.9	38	NNW	28.0	12.5			0			0	0		Prof. C. De Giorgi.
Cosenza	29.05	737.9	29.90	759.5	82.4	28.0	63	NW	2.5	1.1			1			0	0		Prof. D. Conti.
Cagliari	29.74	755.4	29.93	760.3	77.9	25.5	56	S			4		1			0	0		Prof. A. Pacinotti.
Palermo	29.72	754.8	29.97	761.1	77.0	25.0	40	NE	9.4	4.2			0			0	0		Prof. G. Ciacciatore.
Syracuse	29.85	758.1	29.89	759.2	80.1	26.7	57	W	9.8	4.4			10	SW		0	0		Prof. V. G. Guliano.
SUB-SERIES.																			
Naples, S. R.	29.41	747.1	29.91	759.7	80.6	27.0	44	SW	8.1	3.6			4			0	0		Prof. F. Brioschi

NOTE—The originals give the wind-force by the scale 0 to 4, or the velocity in kilometers per hour; no distinction between the amount of upper and lower clouds, and only the direction of the upper. The elevation at Mondovi is 556 m., or 1,824 ft.

JAPANESE SERIES.

Furnished by the co-operation of I. Arai, Director of the Imperial Meteorological Observatory at Tokei.

Hiroshima, I. M. Obs'y					72.7	22.6	99	WSW	3.9	1.7			10n			1.298	32.97	Raining	K. Sasaki.
Nagasaki, I. M. Obs'y	29.57	751.1	29.77	756.1	75.6	24.2	96	WSW	7.6	3.4			10s			0.260	6.60	Cloudy	S. Takehayashi.
Tokei, (Yeddo) Observatory	29.67	753.6	29.73	755.1	71.9	22.2	91	S	6.3	2.8			10n			0.285	7.24	Raining	The Staff.
Wakayama	28.61	752.1	29.66	753.3	76.1	24.5	89	S	5.6	2.5			10ck		S	0.287	7.29	Cloudy	

NOTE.—The data are published as given. The rain-fall is measured at 9:30 a. m., local time. For Nagasaki and Hiroshima no distinction is made between the amount of upper and lower clouds. The conversions are published as given in the originals.

MEXICAN SERIES.

By authority of the SECRETARY OF PUBLIC WORKS.

Furnished by the co-operation of Senor Mariano Bárcena, Director of the Central Meteorological Observatory in the City of Mexico, and the respective Observers.

Colima																			R. Banda, C. E.
Guadalajara	25.02	635.5	30.01	762.3	58.6	14.8	74	Calm			0		9ks		E	1.01	25.6	Very cloudy	Prof. L. Perez.
Guanaxuato	23.64	600.6			59.0	15.0	82	NNE	Inap.	Inap.		4kn	4k	E	NE	0.04	1.2	Very cloudy	Vicente Fernandez.
Leon	24.40	619.8	30.01	762.3	64.0	17.8	79	SW			1		9k		SW	Inap.	Inap.	Very cloudy	Prof. M. Leal.
Mazatlan																			F. Quijano, C. E.
Mexico, Central Observatory	23.04	585.3	29.97	761.2	57.7	14.3	83	Calm	0	0		8k	0	SE		0.09	2.3	Cloudy	The Staff
Morelia																			M. Fena, M. D.
Pabellon (Aguascalientes)	23.93	607.7	29.83	757.7	62.8	17.1	73	NE			2	2c	0			0.09	2.3	Clear	M. V. de Leon, M. E
Puebla (Catholic Institute)	23.46	595.9	30.21	767.2	55.4	13.0	59	Calm	0	0		3k	0	S		0.50	12.6	Clear	Prof. P. Spina.
San Luis Potosi	24.21	615.0	30.14	765.5	61.0	16.1	67	E			1		10		E	0.42	10.6	Covered	G. Barroeta, M. D.
Tlacotalpam	29.92	760.0	29.93	760.3	76.8	24.9	88	Calm			0	5	5	S	E	0	0	Covered	Prof. M. M. Chazaro
Vera-Cruz																			Prof. J. Rossell
Zacatecas	22.59	573.8	30.19	766.7	58.3	12.4	81	Calm			0	6n	0	E		0.04	1.0	Fair	J. C. Castrillon

NOTE.—The elevation of Colima is 507.3 m., or 1,664.4 ft.; Guadalajara, 1,569.3 m., or 5,148.7 ft.; Guanaxuato, 2,060.84 m., or 6,786.20 ft.; Leon, 1,798.6 m., or 5,901.0 ft.; Mexico, 2,265.8 m., or 7,433.9 ft.; Morelia, 1,940 m., or 6,365 ft.; Pabellon, 1,924.4 m., or 6,313.8 ft.; Puebla, Catholic Institute, 2,167.5 m., or 7,112.3 ft.; San Luis Potosi, 1,890.3 m., or 6,201.9 ft.; Zacatecas, 2,496 m., or 8,189 ft. † Aneroid.

NETHERLANDS SERIES.

Furnished by the co-operation of Professor Buys Ballot, Director of the Royal Meteorological Institute of the Netherlands at Utrecht.

Flushing	29.82	757.5	29.82	757.5	72.1	22.3		WNW			2					0.008	0.2		
Groningen	29.73	755.1	29.78	756.5	72.3	22.4		W			4					0	0		
Helder	29.78	756.4	29.78	756.4	65.8	18.8		SW			4					0	0		
Hellevoetsluis	29.81	757.1	29.81	757.1	74.5	23.6	61	W			3					0	0		
Utrecht	29.73	755.1	29.78	756.3	75.2	24.0	55	SW			2		5			0	0	Cloudy	H. v. d. Brink.

NOTE.—The originals give the wind-pressure in kilograms per square meter, except Hellevoetsluis, which gives force by the scale 0 to 12; the humidity is computed for Hellevoetsluis and Utrecht; for Utrecht, the weather as published, from which is inferred the amount of cloudiness by the scale 0 to 10, without distinguishing between upper and lower clouds.

NORWEGIAN SERIES.

Furnished by the co-operation of Professor H. Mohn, Director of the Royal Norwegian Meteorological Institute at Christiania.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Millimeters.	Reduced to sea-level. Inches.	Millimeters.	Temperature of the Air. Fahrenheit	Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Velocity. Miles per hour.	Meters per second.	Force. 0—10.	Clouds. Amount. Up'er 0—10.	Lo'er 0—10.	Direction. Upper. From—	Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Millimeters.	Weather.	Observer.
Bergen	29.61	752.1	29.67	753.5	56.1	13.4	58	NNW	11.0	4.9			1			0	0		
Brönö	29.59	751.5	29.63	752.5	52.2	11.2	68	SW	18	8			10			0.008	0.2		
Christiania	29.39	746.4	29.52	749.9	69.4	20.8	37	SSW	9	4			8			0.004	0.1		
Tromsö	29.50	749.4	29.56	750.8	55.8	13.2	68	NNE	4	2			9			0	0		

NOTE.—The originals give the amount of cloudiness without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols. The cloudiness and weather at Bergen refer to 2h., p. m., instead of 1h., 4 min. p. m.

PORTUGUESE SERIES.

Furnished by the co-operation of J. C. de Brito Capello, Director of the Meteorological Observatory of the Infante Dom Luiz, at Lisbon.

Angra (Azores)	29.99	761.8	30.20	767.1	70.9	21.6	98	WSW			4		7			0	0		Dr. J. A. Sampaio.
Campo Major	28.99	736.3	29.94	760.5	82.0	27.8	24	WNW	9.8	4.4			2			0	0		Dr. A. M. R. dos Santos.
Funchal (Madeira)	30.11	764.9	30.20	767.1	70.9	21.6	67	SW	1.8	0.8			3			0	0		Capt. D. A. de Cunha.
Lisbon Observatory	29.75	755.7	30.07	763.7	70.0	21.1	59	N	17.4	7.8			3	NW		0	0		The Staff.
Ponta Delgada (Azores)	30.17	766.2	30.24	768.0	73.4	23.0	81	SW	13.0	5.8			3			0	0		

NOTE.—The originals give the wind-velocity in kilometers for the hour preceding the observation, except Angra, which gives force on scale 0 to 9; occasionally, the weather by Vienna symbols; the amount of cloudiness without distinguishing between upper and lower clouds. The rain-fall at Lisbon is measured at noon, instead of 0 h. 6 m., p. m.

PORTUGUESE NAVAL SERIES. VESSELS AND CAPTAINS.																Sea or swell. Height scale 0-9	Direction from—	Rain-fall.		
Bartholomew Dias																				A. G. da Silva Costa, Com'd't.
D. Fernando																				A. M. de Sande, Com'd't
Duque da Terceira																				J. C. M. Cabrate, 1st L't
Mindello																				J. F. R. R. Bastos, Com'd't.
Quanza, Carlos Maria da Silva, Costa																				
St. Paul de Loando			29.90	759.4	72.3	22.4		NW			1		0			1	NW		Blue sky	C. J. de Senna Barcellos, Q. M.
Rio Duro																				J. T. d'Oliveria, Com'd't
Rio Lima, S. C. da Silva Costa																				Antonio Sarmento, Q. M.
Sà da Bandeira																				F. Teixeira da Silva, Com'd't.
Sado, J. A. de Brito Capello, Mossamedes, Benguela			30.06	763.4	66.6	19.2		NW			3		6		NW	2	NW		D. clouds	A. Tito da Silva, Q. M.
Tejo, J. M. T. Guimaraes																				J. G. Felgos, 2nd Lieut.

NOTE.—The originals give the weather by the Beaufort notation; no distinction between upper and lower clouds; duration of rain-fall in hours. The Sà da Bandeirâ gives the barometer reduced to freezing, but not to sea-level.

RUSSIAN SERIES.

Furnished by the co-operation of Professor H. Wild, Director of the Imperial Central Physical Observatory of Russia, at St. Petersburg.

Archangel	29.78	756.5	29.80	757.0	62.2	16.8	64	NW	9	4			0							Capt. Sselliwerstow.
Astrakhan	29.90	759.5	29.82	757.4	82.9	28.3	43	SSE	18	8			2cs;s						Light clouds	Capt. Wisganow.
Barnaul	29.22	742.1	29.70	754.3	63.3	17.4	59	NW	4	2			3							Meteorological Obs.
Dorpat	29.48	748.9	29.72	754.8	72.7	22.6	69	SW	7	3			8k							Prof. Dr. Weihrauch.
Ekaterinburg	29.60	736.7	29.91	759.8	77.9	25.5	33	ENE	4	2		6ck							Light clouds	Meteorological Obs.
Irkutsk																				
Kasan	29.59	749.2	29.75	755.6	76.1	24.5	57	ESE	7	3			8kn							Physical Cabinet.
Kertch	29.65	753.0	29.67	753.5	75.4	24.1	76	NNW	7	3			5							Lagorio.
Kieff	29.06	738.2	29.67	753.6	71.8	22.1	69	WNW	7	3			9cks							Physical Cabinet.
Krotkowo*	29.36	745.8	29.81	757.1	79.3	26.3	49	SSW	11	5			10						Thunder	Cand. Fatjanow.
Lugan	29.43	747.4	29.62	752.3	83.3	28.5	48	E	2	1			5							Meteorological Obs.
Moscow	29.10	739.1	29.61	752.2	74.7	23.7	56	S	4	2			8ks							Meteorological Obs.
Nertchinsk																				Meteorological Obs.
Nikolaiev	29.63	752.7	29.71	754.5	78.3	25.7	49	N	4	2			5cs;ks							Kurdakof.
Nikolaievsk, on the Amoor																				
Nukuss	29.57	751.0	29.78	756.5	95.7	35.4	32	Calm	0	0			1k							
Orenburg																				
Pekin (China)	29.50	749.2	29.64	752.8	81.7	27.6	71	Calm	0	0			0							Physical Observatory.
St. Petersburg	29.70	754.4	29.72	754.8	71.4	21.9	39	NE	7	3		ck	2ks							Central Physical Obs.
Tashkend	28.24	717.2	29.71	754.6	81.9	27.7		Calm	0	0			1						Light clouds	Teich, A. M.
Tiflis	28.41	721.6	29.73	755.2	88.2	31.2	42	SE	4	2			1k							Physical Observatory.
Vladivostock																				
Warsaw	29.39	746.5	29.80	756.8	71.1	21.7	66	W	11	5			8ks							Astronomical Obs.
Wilna	29.35	745.6	29.76	755.9	70.9	21.6	58	Calm	0	0			8							Astronomical Obs.
Yeniseisk	29.47	748.4	29.74	755.4	63.3	17.4	76	WNW	7	3			9						Raining	Marks.

NOTE.—The originals give the amount, and generally the kind of cloudiness, without distinguishing between upper and lower clouds; occasionally, the weather by Vienna symbols; they omit the rain-fall. The elevation of Tiflis is 409 meters, or 1,342 feet; Tashkend, 455 m., or 1,493 ft.; Irkutsk, 461.5 m., or 1,514.1 ft.; Nertchinsk, 660 ? m., or 2,165 ? ft. *N. 53° 47′, E. 48° 34′.

SPANISH SERIES.

Furnished by the co-operation of Antonio Aguilar, Director of the Royal Observatory at Madrid, and the respective observers.

Barcelona, Met. Obs'y	29.87	758.6	29.97	761.2	77.4	25.2	65	SE	3.4	1.50			0			0	0	Clear.		Antonio Rave, Director.
Bilbao, Met. Obs'y	29.99	761.7	30.04	763.1	75.7	24.3	56	NW	1.8	0.79		2	7	W		0	0	Almost cov'd		Prof. Manuel de Naveran.
Burgos, Met. Obs'y	26.95	686.4			73.5	26.4	46	SW	5.0	2.25			2			0	0	Light clouds		Domingo Martin y Perez
Madrid, Royal Observatory	27.74	704.6	29.82	757.4	89.4	31.9	27	SW	12.7	5.67		0	0			0	0	Clear.		The Staff.
Murcia, Met. Obs'y	27.79	756.6	29.93	760.2	87.8	31.0	45	ENE	5.3	2.36		0	2			0	0	Almost clear		Olayo Diaz, Director.
Santiago, Met. Obs'y	27.12	739.6	30.00	762.1	61.0	16.1	90	SSW	9.4	4.2			10			0.031	0.8	Covered		R. Gil Villanueva, Dir.
SUB-SERIES.																				
Havana, Cuba, W. I.	30.05	763.4	30.12	765.0	83.0	28.3	71	E	11.6	5.2		0	0			0	0	Clear.		Benito Vines, S. J.
Manilla, Philippine Islands	29.87	758.6	29.92	759.9	81.5	27.5	77	SE	3.3	1.5			5kn			0.02	0.5	Covered		Federico Faura, S. J.
San Fernando, Naval Obs'y	29.96	761.0	30.06	763.5	71.4	21.9	72	WSW	6.8	3.0		8	0	E		0	0			Capt. C. Pulazon, R. N., Dir.
San Juan de Porto Rico, W. I.	30.08	764.1	30.17	766.4	79.5	26.4	83	E	9.2	4.13		8s	4k	E	E	1.368	34.75	Clear.		Enrique Gadea, Chief Eng'r.

NOTE.—The originals give the weather in general terms as published; wind-velocity, except for sub-series, in kilometers per hour; rain-fall for San Juan is measured at 4 p. m., instead of 8:19 a. m., and for San Fernando at midnight following; at Barcelona, Bilbao, Burgos, Murcia and Santiago, the barometer is reduced to freezing, but not to sea-level. The elevation of Burgos is 860 meters, or 2,822 feet; Madrid 655.5 m., or 2,150.5 ft.

SWEDISH SERIES.

Furnished by the co-operation of Professor R. Rubenson, Director of the Royal Swedish Meteorological Institute, of F. Malmberg, Director of the Nautical Meteorological Bureau, Stockholm, and of Prof. H. H. Hildebrandsson, Director of the Meteorological Observatory of the Upsala University.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Haparanda	29.61	752.2	29.65	753.2	65.1	18.4	.....	ESE	.....	.....	2	.....	10	.....	.....	0	0	.....	
Umea	29.57	751.1	29.62	752.4	58.3	14.6	91	S	.....	.....	2	.....	10	.....	.....	0.461	11.7	.....	
Hernosand	29.56	750.9	29.61	752 2	54.0	12.2	96	NE	.....	.....	2	.....	10	.....	.....	0.043	1.1	.....	
Stockholm	29.43	747.5	29.61	752 0	69.1	20.6	51	SW	.....	.....	2	.....	10	.....	.....	0.028	0.7	.....	
Wisby	29.61	752.1	29.67	753.6	71.2	21.8	63	W	.....	.....	4	.....	3	.....	.....	0.228	5.8	.....	
Sub-Series.																			
Upsala	29.46	748.3	29.55	750.5	67.1	19.5	68	SW	13.2	5.9	.....	.....	10	.....	SW	0.111	2.78	.....	Nils Ekholm.

Note.—The originals give the wind-force by the scale 0 to 6, except Upsala; occasionally, the weather by Vienna symbols, or in general terms; no distinction between the amount of upper and lower clouds. The rain-fall is measured at 8 a. m., local time, and apparently on the following day.

Swedish Naval Series.																Sea or swell. Height scale 0-9	Sea or swell. Direction from—	Rain-fall.		
Barque Australia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Pählson.
H. M. Corvette Balder	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Capt. A. C. Schonmeyr
Saga, N. 41° 35′, W. 19° 07′	.....	.....	30.13	765.2	67.3	19.6	.....	NNW	.....	.....	2	.....	5	.....	.....	.....	.....	.....	D. clouds	M. von Krusenstierna.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give wind-force and weather by Beaufort notation. Observations of Barque Australia not strictly simultaneous.

SWISS SERIES.

Furnished by the co-operation of Professor R. Wolf, Director of the Observatory at Zurich, and of Professor E. Plantamour, Director of the Observatory at Geneva.

Geneva	28.49	723.6	29.84	757.8	82.4	28.0	45	SW	.....	.....	4	.....	1	.....	.....	0	0	Clear.	The Observatory.
Zurich	28.30	718 7	29.84	757.9	83.8	28.8	48	NW	.....	.....	1	.....	1	.....	.....	0	0	Clear.	The Observatory.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Note.—At Geneva the corresponding departures from the normal values are: Barometer, —3.6 mm.; Thermometer, +6.0 Cent. Relative Humidity, —9 per cent.

Note.—The rain-fall is measured at Zurich at 7 a. m. on the following day. The originals give the barometer reduced to freezing, but not to sea-level; the wind-force by the scale 0 to 4 for Zurich; the amount of cloudiness without distinguishing between upper and lower clouds; the weather in general terms. The elevation of Geneva is 408 meters, or 1,339 feet, and that of Zurich 470 m., or 1,542 ft.

TURKISH SERIES.

Furnished by the co-operation of A. Coumbary, Effendi, Director of the Central Observatory at Constantinople, and of Prof. C. V. A. van Dyck, Superintendent of the Lee Observatory at Beirut.

Constantinople	.....	.....	29.82	757.5	67.3	19.6	64	N	19	8.5	.....	.....	10	.....	NNE	0.165	4.2	.....	The Observatory.
Fao, Persian Gulf	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Valona	.....	.....	29.97	761.1	77.4	25.2	.....	NW	.....	.....	2	.....	0	.....	.....	0	0	Clear.	A. Bertrand.
Sub-Series.																			
Beirut, (Syria) Lee Obs'y	.....	.....	29.80	757.0	83.8	28.8	54	WSW	.....	.....	3	.....	1k	.....	WSW	0	0	.....	Prof. C. V. A. van Dyck
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the velocity at Constantinople in meters per second; at Fao and Valona the wind-force by the scale 0 to 7, at Beirut by the scale 0 to 12; the weather in general terms as published; for Valona the amount is inferred from the general weather terms. Valona does not state that the barometer is reduced to sea-level, but it is so assumed.

CANADIAN SERIES.

Furnished by the co-operation of Charles Carpmael, A. M., F. R. A. S., Director of the Magnetic Observatory at Toronto and Superintendent of the Meteorological Office of the Dominion of Canada, and the respective observers.

Bathurst, N. B.	.....	.....	.....	.....	72.0	22.2	.....	N	5	2.2	.....	1cs	0	.....	.....	0	0	Clear.	Hon. J. Ferguson.
Chatham, N. B.	29.81	757.2	29.87	758 7	71.9	22.2	71	Calm	0	0	.....	6ck	0	NW	.....	0.07	1.8	Fair.	G. A. Blair.
Charlottetown, P. E. Island	29.82	757.4	29.86	758.4	71.3	21.8	86	SW	3	1.3	.....	0	3s	.....	.....	0	0	Fair.	H. J. Cundall, C. E.
Cornwall, Ontario	29.66	753.4	29.84	757.9	65.6	18.3	89	NW	.....	.....	1	0	1s	.....	.....	Inap.	Inap.	Clear.	James Smith, M. A.
Dalhousie, N. B.	29.72	754.9	29.88	758.9	68.5	20.3	72	W	.....	.....	2	0	0	.....	.....	0	0	Clear.	H. A. Johnson.
Father Point, Quebec	29.86	758.4	29.88	758.9	61.6	16.4	68	NW	1	0.4	.....	2cs	3ks	.....	.....	0	0	Fair.	J. McWilliams.
Fredericton, N. B.	29.83	757.7	29.89	759.2	76.1	23.9	70	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	Prof. Harrison.
Fort Garry, Manitoba	29.02	737 1	29.82	757.4	58.1	14.5	95	N	2	0.9	.....	1c	2ks	N	.....	0.070	1.78	Fair.	James Stewart.
Granton, Ontario	28.85	732.8	29.91	759.7	63.0	17.2	88	SW	.....	.....	2	3ck	0	SW	.....	0	0	Fair.	James Grant.
Halifax, N. S.	29.79	756.7	29.92	760 0	65.4	18.6	85	SE	2	0.9	.....	0	0	.....	.....	0	0	Clear.	A. Allison.
Hamilton, Ontario	29.52	749.8	29.90	759.4	67.1	19.5	83	SW	.....	.....	3	4cs	0	SW	.....	0	0	Clear	Geo. Dickson, B. A.
Heart's Content, N. F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. Weedon.
Kingston, Ontario	29.54	750.3	29.86	758.4	67.0	19.4	85	S	3	1.3	.....	2k	0	SW	.....	0	0	Clear.	S. Woods, M. A.
Little Glace Bay, N. S.	29.80	756.9	29.84	757.9	70.4	26.8	72	W	2	0.9	.....	0	0	.....	.....	0	0	Clear.	C. H Rigby.
Montreal, Quebec	29.66	753.4	29.85	758.2	63.9	17.7	84	SW	12	5.4	.....	.....	10s	.....	.....	Inap.	Inap.	Cloudy	C. H. McLeod, C. E.
Moose Factory, Ontario	29.98	761.5	30.01	762.2	67.1	19.5	68	SW	.....	.....	1	0	0	.....	.....	0.04	1.0	Clear.	J. R. Nason.
Norwood, Ontario	29.15	740.4	29.82	757.4	66.4	19.1	83	W	2	0.9	.....	10ck	0	W	.....	0	0	Cloudy	Rev. T. F. Fotheringham, M. A
Parry Sound, Ontario	29.18	741.1	29.84	757.9	63.0	17.2	86	S	8	3.6	.....	0	5n	.....	.....	0.08	2.0	Cloudy	Rev. R. Mosley.
Paterboro, Ontario	29.16	740.7	29.88	758.0	70.7	21.5	66	W	.....	.....	1	0	0	.....	.....	0	0	Clear.	J. F. Jeffers, M. A.
Port Dover, Ontario	29.24	742.7	29.91	759.7	66.1	18.9	95	SW	5	2.2	.....	2k	0	SW	.....	0	0	Fair.	H. Morgan.
Port Stanley, Ontario	29.29	744.0	29.91	759.7	66.1	18.9	83	W	6	2.7	.....	2ck	0	W	.....	0	0	Clear.	M. Payne.
Quebec, Quebec	29.57	751.1	29.88	758.9	62.0	16.7	91	NW	.....	.....	3	.....	10n	.....	.....	0.63	0.8	Light rain	Capt. Ashe, R. N.
Rockliffe, Ontario	29.40	746 7	29.85	758.2	59.0	15.0	82	Calm	0	0	.....	4ck	0	SW	.....	0	0	Fair.	W. H. McIntyre.
St. John, N. B.	29.72	754.9	29.88	758.9	69.0	20.6	75	Calm	0	0	.....	0	0	.....	.....	0	0	Clear.	G. Murdock, C. E.
Saugeen, Ontario	29.17	740 9	29.86	758.4	67.2	19.6	80	S	7	3.1	.....	1cs	0	.....	.....	0	0	Clear.	K. Stewart.
Stratford, Ontario	28 65	727.7	29.89	759.2	60.9	16.1	85	W	6	2.7	.....	1cs	0	.....	.....	0	0	Clear.	C. J. MacGregor, M. A.
Sydney, C. B.	29.83	757.7	29.86	758.4	72.4	22.4	80	S	6	2.7	.....	0	0	.....	.....	Inap.	Inap.	Clear.	T. C. Hill, C. E.
Toronto, Ontario	29.55	750.6	29.92	760.0	65.0	18.3	83	SW	6	2.7	.....	2ck	0	W	.....	0	0	Clear.	Magnetic Observatory.
Windsor, N. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. John E. Oram, M. A
Woodstock, Ontario	28.86	733.0	29.88	758.9	66.7	19.3	76	W	12	5.4	.....	0	1ks	.....	.....	0	0	Clear.	Professor Wolverton.
Yarmouth, N. S.	29.83	757.7	29.89	759.2	65.2	18.4	73	SW	3	1.3	.....	0	0	.....	.....	0	0	Clear.	Lt. F. E. Wilmot, R. N.
Sub-Series.																			
St. Johns, Newfoundland	29.84	757.9	30.09	764.3	62	16.7	93	N	.....	.....	2	2k	5s	.....	.....	0	0	Fair.	John Delany.
St. Pierre, N. E., l'Hopital Maritime	.....	.....	29.88	758.9	57.2	14.0	.....	SW	.....	.....	2	.....	.....	.....	.....	0.24	6.1	.....	The Commandant.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Note.—The originals give the wind-force at St. Pierre on the scale 0 to 7. The elevation of Granton is 1,015 feet, or 309 meters Stratford, 1,182 ft., or 360 m.

By authority of the SECRETARY OF WAR.

UNITED STATES SERIES.

Furnished by the co-operation of W. B. Hazen, Chief Signal Officer.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0–10.	Clouds. Amount. Up'er 0–10.	Clouds. Amount. Lo'er 0–10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather	Observer.
Albany, New York	29.84	757.9	29.92	760.0	71	21.7	71	N	4	1.8		3k;c	0	N;S		0.23	5.8	Fair	
Alpena, Michigan	29.21	741.9	29.84	757.9	58	14.4	94	W	1	1.8			8s		W	0.60	15.2	Cloudy	
Atka, Aleutian Is., Alaska																			
Atlanta, Georgia	28.96	735.6	30.05	763.3	81	27.2	62	W	5	2.2		0	0			0	0	Clear	
Atlantic City, New Jersey	30.00	762.0	30.01	762 2	75	23.9	68	W	9	4.0		5c	0	W		0	0	Fair	
Augusta, Georgia	29.94	760.5	30.14	765.5	78	25.6	82	Calm			0	5cs	2s	SW	SW	0.20	5.1	Fair	
Baltimore, Maryland	30.00	762.0	30.05	763.3	76	24.4	56	W	10	4.5		2ck	Haze	Calm	Calm	0.01	0.3	Clear	
Barnegat, New Jersey	29.94	760.5	29.96	761.0	80	26.7	59	W	14	6.3		5c	0	W		0	0	Fair	
Bismarck, Dakota	28.02	711.7	29.87	758.7	65	18.3	23	Calm	0	0		0	0			0	0	Clear	
Boerne, Texas	28.53	724.6	29.79	756.7	72	22.2	80	S	4	1.8		0	0			0	0	Clear	
Boise City, Idaho	27.14	689.3	30.10	764.5	56	13.3	51	SE	2	0.9		0	0			0	0	Clear	
Boston, Massachusetts	29.69	754.1	29.84	757.9	76	24.4	77	SW	5	2.2		2cs	1ks	SW	SW	0	0	Fair	
Brackettville, Texas	28.79	731.3	29.80	756.9	75	23.9	77	E	6	2.7		2c	0	Calm		0	0	Clear	
Breckenridge, Minnesota	28.79	731.3	29.75	755.6	62	16.7	77	E	8	3.6		5k	0	Calm		0	0	Fair	
Brownsville, Texas	29.92	760.0	29.96	761.0	78	25.6	86	Calm	0	0		0	0			Inap.	Inap.	Clear	
Buffalo, New York	29.24	742.7	29.91	759.7	64	17.8	89	W	4	1.8			10s		SW	0.04	1.0	Cloudy	
Burkes, Arizona					64	17.8	21	Calm			0	0	0			0	0	Clear	
Burlington, Vermont	29.62	752 8	29.90	759.4	62	16.7	88	NW	5	2.2			10n		NW	0.19	4.8	Light rain	
Cairo, Illinois	29.71	754.6	30.08	764.0	74	23.3	72	SW	2	0.9		2c	0	Calm		0	0	Fair	
Campo, California	27.31	693.7	29.88	758.9	42	5.6	83	S	3	1.3		0	0			0	0	Clear	
Cape Hatteras, N. Carolina	30.13	765.3	30.14	765.5	73	22.8	85	SW	14	6.3			10n		S	0.03	0.8	Light rain	
Cape Henry, Virginia	30.06	763.5	30.08	764.0	75	23.9	77	SW	10	4.5		8ck	0	Calm		1.06	26.9	Fair	
Cape Lookout, N. Carolina	30.11	764.8	30.12	765.0	75	23.9	86	NW	6	2.7			10n		NW	0.01	0.3	Light rain	
Cape May, New Jersey	30.00	762.0	30.02	762.5	74	23.3	68	W	27	12.1		5c	0	NW		0	0	Fair	
Castroville, Texas	29.19	741.4	29.86	758.4	78	25.6	73	SE	2	0.9		0	5s		S	0	0	Fair	
Cedar Keys, Florida	30.15	765.8	30.17	766.3	82	27.8	83	E	7	3.1		8cs	0	Calm		0.44	11.2	Fair	
Charleston, South Carolina	30.05	763.3	30.11	764.8	85	29.4	72	SW	7	3.1		0	0			0	0	Clear	
Charlotte, North Carolina	29.24	742.7	30.02	762.5	75	23.9	72	S	3	1.3		5cs	Sm'e	SW	Calm	0.80	20.3	Fair	
Chattanooga, Tennessee	29.32	744.7	30.09	764.3	74	23.3	72	NW	2	0.9		1cs	0	Calm		0.07	1.8	Clear	
Cheyenne, Wyoming	23.96	608.6	29.90	759.4	59	15.0	23	NW	8	3.6		0	0			0	0	Clear	
Chicago, Illinois	29.26	743.2	29.92	760.0	65	18.3	78	W	5	2.2		0	0			Inap.	Inap.	Clear	
Chincoteague, Virginia	30.03	762.7	30.05	763.3	75	23.9	90	SW	11	4.9		8ck	0	SW		0.43	10.9	Cloudy	
Cincinnati, Ohio	29.42	747.3	30.05	763.3	68	20.0	79	S	1	0.4		5k	0	Calm		0.88	22.4	Fair	
Cleveland, Ohio	29.28	743.7	29.98	761.5	65	18.3	68	SW	10	4.5		1ck	0	W		0.05	1.3	Clear	
Coleman City, Texas	28.19	716.0	29.78	756.4	73	22.8	72	SE	6	2.7		5cs	0	Calm		0.18	4.6	Fair	
Columbus, Ohio	29.21	741.9	30.02	762.5	63	17.2	72	S	4	1.8		0	0			0.12	3.0	Clear	
Concho, Texas	27.98	710.7	29.56	750.8	76	24.4	69	S	20	8.9		5c	0	SE		0	0	Fair	
Corsicana, Texas	29.56	750.8	30.01	762.2	77	25.0	77	S	8	3.6		0	8ks		Calm	0.08	2.0	Cloudy	
Davenport, Iowa	29.31	744.5	29.92	760.0	66	18.9	84	SW	2	0.9		0	0			0.15	3.8	Clear	
Dayton, Washington T'y					59	15.0	64	SW			2	0	0			0	0	Clear	
Deadwood, Dakota	25.30	642.6			55	12.8	62	Calm	0	0			10s			0	0	Cloudy	
Decatur, Texas	28.85	732.8	29.98	761.5	70	21.1	85	NE	24	10.7			10s		Calm	0	0	Cloudy	
Delaware Breakwater, Del.	30.01	762.2	30.03	762.7	75	23.9	64	W	18	8.0		8c	0	W		0	0	Fair	
Denison, Texas	29.29	744.0	30.06	763.5	70	21.1	85	NW	8	3.6			10n		SW	0.07	1.8	Heavy rain.	
Denver, Colorado	24.68	626.9	29.90	759.4	60	15.6	55	SE	4	1.8		0	0			0	0	Clear	
Des Moines, Iowa	29.08	738.1	29.91	759.7	62	16.7	77	Calm	0	0		0	5s		NW	0	0	Fair	
Detroit, Michigan	29.27	743.4	29.92	760.0	61	16.1	82	SW	5	2.2		2k	0	SW		0	0	Clear	
Dodge City, Kansas	27.26	692.4	29.42	747.3	70	21.1	75	SE	2	0.9		0	5s		Calm	0	0	Fair	
Dubuque, Iowa	29.26	743.2	29.94	760.5	63	17.2	78	NW	1	0.4		0	1s;hz'		Calm	0.35	8.9	Fair	
Duluth, Minnesota	29.17	740.9	29.82	757.4	61	16.1	82	SW	4	1.8			10ks		W	0.08	2.0	Cloudy	
Eagle Pass, Texas	29.19	741.4	29.89	759.2	80	26.7	66	Calm	0	0		0	0			0	0	Clear	
Eastport, Maine	29.81	757.2	29.88	758.9	63	17.2	78	Calm	0	0		0	0			0	0	Clear	
Edinburg, Texas					79	26.1	87	Calm			0	0	0			0	0	Clear	
El Paso, Texas	26.11	663.2			69	20.6	19	NW	2	0.9		0	0			0	0	Clear	
Erie, Pennsylvania	29.25	742.9	29.93	760.2	70	21.1	66	SW	8	3.6		0	2s		W	0.08	2.0	Fair	
Escanaba, Michigan	29.21	741.9	29.84	757.9	61	16.1	82	Calm	0	0		5c	0	W		0.28	7.1	Fair	
Florence, Arizona	28.28	718.3	29.88	758.9	68	20.0	30	Calm	0	0		0	0			0	0	Clear	
Fort Apache, New Mexico	25.02	635.5	30.47	773.9	44	6.7	45	E	5	2.2		0	0			0	0	Clear	
Fort Assiniboine, Montana																			
Fort Buford, Dakota	27.81	706.4	29.57	751.1	60	15.6	82	NE	10	4.5			10s		W	0.01	0.3	Cloudy	
Fort Custer, Montana	26.74	679.2			62	16.7	83	NW	4	1.8			10s		NW	0	0	Cloudy	
Fort Davis, Texas	25.21	640.3	30.17	766.3	70	21.1	53	W	6	2.7		0	0			0	0	Clear	
Fort Elliot, Texas	26.89	683.0	29.06	738.1	58	14.4	82	SE	12	5.4			10s		SE	2.40	61.0	Cloudy	
Fort Gibson, Indian Ter.	29.41	747.0	29.93	760.2	69	20.6	90	E	6	2.7			10n		Calm	0.04	1.0	Light rain	
Fort Grant, Arizona	25.12	638.0	29.92	760.0	69	20.6	12	N	7	3.1		0	0			0	0	Clear	
Fort Griffin, Texas	28.69	728.7	29.91	759.7	73	22.8	83	Calm	0	0			10s		Calm	0	0	Cloudy	
Fort Keogh, Montana	27.11	688.6			62	16.7	64	Calm	0	0		8cs	0	Calm		0	0	Fair	
Fort McKavett, Texas	27.68	703.1	29.50	749 3	73	22.8	72	S	12	5.4		1cs	0	S		0	0	Clear	
Fort St. Michael, Alaska																			
Fort Shaw, Montana																			
Fort Sill, Indian Territory	28.73	729.7	29.80	756.9	64	17.8	100	SW	6	2.7			10n		Calm	1.00	25.4	Light rain	
Fort Stevenson, Dakota	27.98	710.7			61	16.1	88	Calm	0	0		0	8s		Calm	0.04	1.0	Cloudy	
Fort Verde, Arizona					61	16.1	35	NW			1	0	0			0	0	Clear	
Fort Yates, Dakota																			
Fredericksburg, Texas																			
Galveston, Texas	29.98	761.5	30.02	762.5	80	26.7	78	SE	10	4.5		5k	0	SE		0	0	Fair	
Grand Haven, Michigan	29.28	743.7	29.89	759.2	69	20.6	70	SW	8	3.6		2k	0	SW		0	0	Clear	
Helena, Montana																			
Henrietta, Texas																			
Indianapolis, Indiana	29.24	742.7	29.99	761.7	69	20.6	75	S	4	1.8		0	0			0.15	3.8	Clear	
Indianola, Texas	29.99	761.7	30.02	762.5	80	26.7	74	S	7	3.1		2k	0	Calm		0.29	7.4	Fair	
Jacksboro, Texas																			
Jacksonville, Florida	30.16	766 1	30.18	766.6	83	28.3	71	SW	4	1.8		2cs	0	Calm		0	0	Clear	
Keokuk, Iowa	29.32	744.7	29.91	759.7	69	20.6	70	W	2	0.9		6cs;k	0	W		0.25	6.3	Fair	
Key West, Florida	30.13	765.3	30.16	766.1	82	27.8	71	E	12	5.4		2k	0	E		Inap.	Inap.	Fair	
Kittyhawk, North Carolina	30.12	765.0	30.15	765.8	77	25.0	82	SW	15	6.7		10cs	0	Calm		0.16	4.1	Cloudy	
Knoxville, Tennessee	29.13	739.9	30.10	764.5	71.5	21.9	73	NE	2	0.9		0	1ks		Calm	0.52	13.2	Clear	
La Crosse, Wisconsin	29.16	740.7	29.87	758.7	60	15.6	82	S	6	2.7		0	0			0.13	3.3	Clear	
La Mesilla, New Mexico	26.01	660.6	30.16	766.1	62	16.7	22	Calm	0	0		0	0			0	0	Clear	
Laredo, Texas	29.55	750.6	29.87	758.7	79	26.1	74	SE	6	2.7		0	0			0	0	Clear	
Leavenworth, Kansas	29.09	738.9	29.90	759.4	68	20.0	65	S	4	1.8		9cs	0			0	0	Cloudy	
Lewiston, Idaho	29.08	738.6	29.70	754.4	64	17.8	52	Calm	0	0		0	1s		Calm	0	0	Clear	
Little Rock, Arkansas	29.71	754.6	30.02	762.5	72	22.2	95	NE	4	1.8		5ck	5ks	Calm	SW	0	0	Cloudy	
Los Angeles, California	29.56	750.8	29.90	759.4	58	14.4	88	S	1	0.4			10s		Calm	0	0	Cloudy	
Louisville, Kentucky	29.50	749.3	30.04	763.0	70	21.1	75	S	4	1.8		5k	0	SW		0.74	18.8	Fair	
Lynchburg, Virginia	29.40	746 7	30.06	763.5	76	24.4	60	SW	3	1.3		8ck	0	W		0.45	11.4	Fair	
Madison, Wisconsin	28 94	735.1	29.90	759.4	60	15.6	82	W	2	0.9		2k	0	W		0.19	4.8	Fair	
Marquette, Michigan	29.13	739.9	29.80	756.9	61	16.1	77	NW	2	0.9			10s		NW	0.05	1.3	Cloudy	

UNITED STATES SERIES.—CONTINUED.

STATIONS.	Barometer. Corrected for instrum'tal error and temperature. Inches.	Barometer. Corrected for instrum'tal error and temperature. Millimeters.	Barometer. Reduced to sea-level. Inches.	Barometer. Reduced to sea-level. Millimeters.	Temperature of the Air. Fahrenheit.	Temperature of the Air. Centigrade.	Relative Humidity. Per cent.	Wind. Direction. From—	Wind. Velocity. Miles per hour.	Wind. Velocity. Meters per second.	Wind. Force. 0—10.	Clouds. Amount. Up'er 0—10.	Clouds. Amount. Lo'er 0—10.	Clouds. Direction. Upper. From—	Clouds. Direction. Lower. From—	Rain-fall or melted snow in the past 24 hours. Inches.	Rain-fall or melted snow in the past 24 hours. Millimeters.	Weather.	Observer.
Mason, Texas	28.33	719.6	30.00	762.0	77	25.0	82	S	6	2.7		2cs	0	Calm		0	0	Fair	
Memphis, Tennessee	29.76	755.9	30.09	764.3	75	23.9	81	SE	7	3.1		5cs	Sm'e	W		Inap	Inap.	Fair	
Milwaukee, Wisconsin	29.20	741.7	29.90	759.4	62	16.7	77	W	9	4.0		1ck	0	Calm		0.00	1.5	Clear	
Mobile, Alabama	30.09	764.3	30.14	765.5	78	25.6	86	Calm'	0	0		0	Haze		Calm	0.38	9.7	Clear	
Montgomery, Alabama	29.92	760.0	30.14	765.5	77	25.0	82	SW	7	3.1		5k	0	SW		0	0	Fair	
Morgantown, West Virginia	29.08	738.6	30.04	763.0	69	20.6	80	S	7	3.1		0	5ks		SW	0.34	8.6	Fair	
Mt Washington, N. H	23.81	604.8	30.17	766.3	48	8.9	100	S	34	15.2			10n;fg		S	0.45	11.4	Light rain	
Nashville, Tennessee	29.59	751.6	30.11	764.8	69	20.6	80	NW	1	0.4		0	Fog		Calm	0.05	1.3	Clear	
New Haven, Connecticut	29.78	756.4	29.89	759.2	83	28.3	60	W	8	3.6		5k	0	W		0	0	Fair	
New-London, Connecticut	29.84	757.9	29.88	758.9	80	26.7	70	SW	11	4.9		1k	Haze	SW	Calm	0	0	Clear	
New Orleans, Louisiana	30.04	763.0	30.10	764.5	78	25.6	78	SE	6	2.7		1c	Sm'e	W	Calm	0.82	20.8	Clear	
Newport, Rhode Island	29.83	757.7	29.88	758.9	73	22.8	81	SW	15	6.7		1c	0	SW		0	0	Clear	
New River, North Carolina					76	24.4	86	E			1		10s		SW			Threatening	
New York, New York	29.77	756.1	29.93	760.2	74	23.3	68	W	13	5.8		5k	0	W		0	0	Fair	
Norfolk, Virginia	30.03	762.7	30.09	764.3	80	26.7	66	W	10	4.5		5c	2s	SW	W	0.51	13.0	Fair	
North Platte, Nebraska	26.90	683.2	29.34	745.2	64	17.8	80	S	30	13.4		8ck	0	NW		0.52	13.2	Fair	
Olympia, Washington Ter	30.00	762.0	30.04	763.0	53.0	14.4	88	SW	2	0.9			10ks		Calm	Inap.	Inap.	Cloudy	
Omaha, Nebraska	28.78	731.0	29.83	757.7	67	19.4	69	S	4	1.8			10s		W	0	0	Cloudy	
Oswego, New York	29.63	752.6	29.94	760.5	69	20.6	75	SW	4	1.8		0	5ks		W	0.07	1.8	Fair	
Pembina, Dakota	28.95	735.3	29.76	755.9	56	13.3	94	E	4	1.8		0	0			0.39	9.9	Clear	
Pensacola, Florida	30.09	764.3	30.12	765.0	82	27.8	75	SE	6	2.7		5ck	0	S		0	0	Fair	
Philadelphia, Pennsylvania	29.96	761.0	30.01	762.2	73	22.8	67	W	16	7.2		1cs	Haze	W	Calm	0	0	Clear	
Phœnix, Arizona	28.63	727.2	30.29	769.4	90	32.2	15	E	4	1.8		0	0			0	0	Clear	
Pike's Peak, Colorado	17.89	454.4	30.10	764.5	35	1.7	36	NW	24	10.7		0	0			0.05	1.3	Clear	
Pilot Point, Texas	29.28	743.7	30.10	764.5	69	20.6	85	N	14	6.3			10s		S	0	0	Cloudy	
Pioche, Nevada	24.02	610.1	29.79	756.7	60	15.6	34	NW	7	3.1		0	0			0	0	Clear	
Pittsburg, Pennsylvania	29.23	742.4	30.01	762.2	66	18.9	79	SW	7	3.1		5k	0	SW		0.77	19.6	Fair	
Port Huron, Michigan	29.25	742.9	29.89	759.2	61	16.1	82	W	10	4.5		5ck	0	W		Inap.	Inap.	Fair	
Portland, Maine	29.81	757.2	29.86	758.4	73	22.8	63	NE	3	1.3			10s		Calm	0	0	Cloudy	
Portland, Oregon	30.02	762.5	30.09	764.3	56	13.3	87	NW	1	0.4			10s		NW	0	0	Cloudy	
Portsmouth, North Carolina					73	22.8	81	SE	8	3.6		2k	8n	SW	NW	0.42	10.7	Light rain	
Prescott, Arizona	24.73	628.1	30.09	764.3	55	12.8	33	Calm	0	0		0	0			0	0	Clear	
Punta Rassa, Florida	30.16	766.1	30.17	766.3	81	27.2	74	E	6	2.7		1c	0	SW		0.18	4.6	Clear	
Red Bluff, California																			
Rio Grande City, Texas	29.78	756.4	29.99	761.7	77	25.0	77	SE	6	2.7		0	0			0	0	Clear	
Rochester, New York	29.32	744.7	29.91	759.7	67	19.4	74	SW	8	3.6		2cs	0	SW		0.02	0.5	Clear	
Roseburg, Oregon	29.53	750.0	30.09	764.3	55	12.8	80	Calm	0	0			10s		Calm	0	0	Cloudy	
Sacramento, California	29.78	756.4	29.86	758.4	55	12.8	81	S	5	2.2		0	5s		Calm	0	0	Fair	
St. Louis, Missouri	29.47	748.5	30.03	762.7	69	20.6	65	SW	8	3.6		5c	0	W		0.07	1.8	Fair	
St. Paul, Minnesota	29.61	736.8	29.81	757.2	59	15.0	76	SW	2	0.9		2c	0	W		0	0	Clear	
Salt Lake City, Utah	25.58	649.7	29.91	759.7	65	18.3	25	NE	1	0.4		0	0			0	0	Clear	
San Antonio, Texas	29.31	744.5	29.98	761.5	79	26.1	74	SE	2	0.9		0	8s		S	0	0	Fair	
San Diego, California	29.84	757.9	29.91	759.7	61	16.1	82	SW	3	1.3			10s		Calm	0	0	Cloudy	
Sandusky, Ohio	29.31	744.5	29.96	761.0	65	18.3	68	SW	15	6.7		0	0			0.07	1.8	Clear	
Sandy Hook, New Jersey	29.91	759.7	29.94	760.5	80	26.7	66	W	22	9.8		2c	0	SW		Inap.	Inap.	Fair	
San Francisco, California	29.89	759.2	29.96	761.0	52	11.1	96	W	7	3.1			Fog		W	0	0	Foggy	
Santa Fé, New Mexico	23.26	590.8	29.80	756.9	66	18.9	44	NE	6	2.7		0	0			0	0	Clear	
Savannah, Georgia	30.06	763.5	30.15	765.8	86	30.0	65	SW	8	3.6		2c	2s	SW	Calm	0	0	Fair	
Shreveport, Louisiana	29.83	757.7	30.04	763.0	76	24.4	82	Calm	0	0		0	5s		Calm	0	0	Fair	
Silver City, New Mexico																			
Smithville, North Carolina	30.10	764.5	30.13	765.3	83	28.3	70	SW	12	5.4		8k	0	SW		0	0	Cloudy	
Socorro, New Mexico																			
Springfield, Illinois	29.34	745.2	29.98	761.5	70	21.1	63	SW	1	0.4		2c;k	0	NW		Inap.	Inap.	Clear	
Springfield, Massachusetts	29.74	755.4	29.86	758.4	79	26.1	74	S	3	1.3		0	5ks		SW	0	0	Fair	
Stockton, Texas	26.86	682.2	29.86	758.4	75	23.9	60	S	9	4.0		0	0			0	0	Clear	
Thatcher's Island, Mass	29.73	755.1	29.78	756.4	78	25.6	82	SW	17	7.6		5c	0	W		0	0	Fair	
Toledo, Ohio	29.28	743.7	29.94	760.5	67	19.4	69	NW	12	5.4		0	0			0.52	13.2	Clear	
Tucson, Arizona	27.40	696.0	29.95	760.7	78	25.6	22	SW	5	2.2		0	0			0	0	Clear	
Umatilla, Oregon	29.58	751.3	30.05	763.3	65	18.3	60	W	2	0.9		0	0			0	0	Clear	
Uvalde, Texas	29.03	737.3	29.81	757.2	80	26.7	66	E	2	0.9		0	0			0	0	Clear	
Vicksburg, Mississippi	29.87	758.7	30.12	765.0	74	23.3	90	SE	5	2.2		5c	0	W		0	0	Fair	
Virginia City, Montana	24.27	616.4	29.75	755.6	49	9.4	78	S	3	1.3			10s		Calm	0.04	1.0	Cloudy	
Visalia, California	29.45	748.0	29.81	757.2	60	15.6	65	NW	1	0.4		0	0			0	0	Clear	
Washington, D. C	29.95	760.7	30.06	763.5	74	23.3	59	NW	8	3.6		5ck	0	W		Inap.	Inap.	Fair	
Wickenburg, Arizona					66	18.9	28	NW			1	0	0			0	0	Clear	
Wilmington, North Carolina	30.03	762.7	30.11	764.8	78	25.6	91	S	7	3.1			10ks		W	0.38	9.7	Cloudy	
Winnemucca, Nevada	25.60	650.2	29.96	761.0	55	12.8	39	NE	10	4.5		0	0			0	0	Clear	
Wood's Holl, Massachusetts	29.85	758.2	29.88	758.9	72	22.2	90	S	10	4.5		2ck	2s	SW	SW	0.05	1.3	Fair	
Yankton, Dakota	28.56	725.4	29.80	756.9	67	19.4	79	S	12	5.4		10k	0	W		0	0	Cloudy	
Yuma, Arizona	29.54	750.3	29.68	753.9	71	21.7	53	Calm	0	0		0	0			0	0	Clear	
SUB-SERIES.																			
Bogotá, U. S. Colombia	22.05	560.1			54.0	12.2	74	Calm	0	0			10n			0	0	Cloudy	Thomas Herrau.
§ Havana, Cuba, W. I	30.08	764.0	30.13	765.3	82	27.8	74	E	2.4	1.1		0	0			0	0	Clear	Chas. Hasselbrink.
§ Kingston, Jamaica, W. I	30.07	763.8	30.08	764.0	75.6	24.2	86	Calm	0	0		0	2k		SE	0	0	Clear	Maxwell Hall.
Navassa, W. I	29.96	761.0	30.04	763.0	80	26.7	83	E	4	1.8		2k	5s	E	E	0.3	8.	Fair	F. M. Everett.
Paramaribo, D. Guiana, S. A.	30.07	763.8	30.07	763.8	76	24.4	82	SE			3	5k	7ks	E		1.680	42.68	½ Cloudy	C. J. Hering.
Puerto Berrio, U.S.Col'bia ‖	29.42	747.3	29.98	761.5	76	24.4	94	Calm			0		10ks;s			0	0		Francesco J. Cisneros.
§ Rivas, Nicaragua					75	24		SE				2k	2d	SE	SE	0	0	Fair	Earl Flint.
Santiago de Cuba, W. I	30.09	764.3	30.12	765.0	81	27.2	74	Calm	0	0		4c	0			0	0		Robert Mason.
St. Thomas, W. I																			G. O. Gyllich.
York Factory, B. A	29.73	755.1	29.78	756.4	64.0	17.8	92	NE	11	4.9		3c	1s	NE	NE	0	0	Fair	J. Fortescue & W. Wood.

NOTE.—The originals give the amount of cloudiness by the scale 0 to 4, except Bogota, Paramaribo and York Factory. The elevations of the barometers are, at Atlanta, 1,131.3 feet, or 344.8 meters; Bismarck, 1,704.3 ft., or 519.5 m.; Boerne, 1,333 (?) ft., or 406 (?) m.; Bogota, 8,717.9 ft., or 2,657.2 m.; Boise City, 2,877 (?) ft., or 877 (?) m.; Brackettville, 1,026 (?) ft., or 313 (?) m.; Campo, 2,500 (?) ft., or 762 (?) m.; Cheyenne, 6,057.3 ft., or 1,846.2 m.; Coleman City, 1,727 (?) ft., or 526(?) m.; Concho, 1,750 (?) ft., or 533 (?) m.; Deadwood, (?); Decatur, 1,160 (?) ft., or 354 (?) m.; Denver, 5,269 ft., or 1,606 m.; Dodge City, 2,486 ft., or 757 m.; Florence, 1,550 (?)ft., or 472(?)m.; Fort Custer, (?); Fort Davis, 5,203 (?) ft., or 1,586 (?) m.; Fort Elliot, 2,500 (?) ft., or 762 (?) m.; Fort Grant, 4,823 (?) ft., or 1,470 (?) m.; Fort Griffin, 1,270 (?) ft., or 387 (?) m.; Fort McKavett, 2,050 (?) ft., or 625 (?) m.; Fort Sill, 1,100(?) ft., or 335 (?)m.; Fredericksburg, 1,614 (?) ft., or 492(?) m.; Jacksboro', 1,119.2 (?) ft. or 341.1 (?) m.; Mason, 1,800 (?) ft., or 549 (?) m.; Mt. Washington, 6,285 ft., or 1,916 m.; North Platte, 2,838.2 ft., or 865.1 m.; Omaha, 1,077.4 ft., or 328.4 m.; Phœnix, 1,800 (?) ft., or 549 (?) m.; Pike's Peak, 14,150.7 ft., or 4,313.1 m.; Pioche, 5,778.6 (?) ft., or 1,761.3 (?) m.; Prescott, 5,700 (?) ft., or 1,737 (?) m.; Salt Lake City, 4,362.2 ft., or 1,329.5 m.; Santa Fé, 6,851 (?) ft., or 2,088 (?) m.; Silver City, 6,896 (?) ft., or 2,102 (?) m.; Socorro, 4,064 ft., or 1,239 m.; Stockton, 3,100 (?) ft., or 945 (?) m.; Tucson, 2,542 (?) ft., or 775 (?) m.; Virginia City, 5,480 (?) ft., or 1,670 (?) m.; Wickenburg, 2,050 (?) ft., or 625 (?) m.; Winnemucca, 4,335.3 ft., or 1,321.4 m.; Yankton, 1,275 ft., or 389 m. The following constants are added to the barometer readings as approximate reductions for altitude above sea-level: Bismarck, 1.856 inches, or 47.14 millimeters; Boise City, 2.96 in., or 75.2 mm.; Campo, 2.57 in., or 65.3 mm.; Cheyenne, 5.94 in., or 150.9 mm.; Denver, 5.22 in., or 132.6 mm.; Florence, 1.60 in., or 40.6 mm.; Fort Davis, 4.96 in., or 126.0 mm.; Fort Grant, 4.800 in., or 121.9 mm.; Fort Verde, 3.488 in., or 88.6 mm.; Las Mesilla, 4.15 in., or 105.4 mm.; Mt. Washington, 6.36 in., or 161.5 mm.; Pike's Peak, 12.21 in., or 310.1 mm.; Pioche, 5.77 in., or 146.6 mm.; Prescott, 5.36 in., or 136.1 mm; Salt Lake City, 4.33 in., or 110.0 mm.; Santa Fé, 6.54 in., or 166.1 mm.; Stockton, 3.00 in., or 76.2 mm.; Tucson, 2.59 in., or 65.8 mm.; Wickenburg, 2.09 in., or 53.1 mm.; Winnemucca, 4.36 in., or 110.7 mm.; Virginia City, 5.48 in., or 139.2 mm. ‖The correction of the barometer for temperature is uncertain, but is assumed to be the same as for brass scales.

UNITED STATES NAVAL SERIES.

By authority of the SECRETARY OF THE NAVY.

Furnished by the co-operation of the Navy Department, through Commodore William D. Whiting, U. S. N., Chief of Bureau of Navigation.

STATIONS AND VESSELS.	Barometer reduced to sea-level.		Temperature of the Air.		Relative Humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell		Weather.	Observer.
						Direction.	Velocity		Force.	Amount.		Direction.							
										Up'er	Lo'er	Up'er	Lo'er						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
§Navy Yard, Pensacola, Fla	30.21	767.3	82	27.8	91	SE	4	1.8			8d		SE					Fair	
Navy Yard, Portsmouth, N. H.	29.87	758.7	71	21.7	75	S	4	1.8			2			0	0			Fair	
Naval Hospital, Yokohama, Japan	29.74	755.4	72.5	22.5	95	SW			1		10n		SW	Slight	Slight			Raining	
§ Adams, Chimbote, Peru	30.07	763.8	66	18.9	89	S			0–1		10		S					Cloudy	
§ Alaska, S. 13° 53′, W. 76° 26′ *	29.98	761.5	62	16.7	83	SSE			2		10					Long	SW	Cloudy	
§ Alert, N. 26° 30′, E. 141° 30′	29.83	757.7	82	27.8	78	SW			2		5		SW			Smooth		Fair	
§ Alliance, Eastern Shoals, N. 46° 25′, W. 50° 29′	29.99	761.7	50	10.0	93	SSW			2		10		Calm	0	0	Smooth	SW	Foggy	
§ Ashuelot, Yokohama, Japan	29.73	755.1	75	23.9	90	S			1		10		Calm			None		Drizzling	
§ Colorado, New York, N. Y.	29.91	759.7	75	23.9	64	WNW	8	3.6			2		Calm					Clear	
§ Constellation, Navy Yard, Brooklyn, N. Y.	29.81	757.2	76	24.4	77	WNW			3		5		WNW					Fair	
§ Constitution, Navy Yard, Brooklyn, N. Y.			77	25.0	82	NW	9	4.0			5		NW					Clear?	
§ Franklin, Off Navy Yard, Norfolk, Va	30.06	763.5	74	23.3	100	WSW	7.2	3.2			5		SW	0	0			Fair	
§ Independence, Mare I'd, Navy Yard, Cal.	29.93	760.2	60	15.6	71	W	3.6	1.6			9		W	0	0			Cloudy	
§ Jamestown, Sitka, Alaska *	30.10	764.5	44	6.7	92	ENE			1		8					Mod'ate		Cloudy	
§ Kearsarge, Boston, Mass	29.86	758.4	75	23.9	81	SW			2		5		SW			Smooth		Cloudy	
§ Lackawanna, N. 0° 39′, W. 80° 39′ †	30.08	764.0	74	23.3	86	S			3		10		S			Smooth	S	Cloudy	
§ Marion, S 35° 02′, W. 55° 53′	30.39	771.9	47	8.3	100	WNW			3		10			0	0	Smooth		Cloudy	
§ Michigan, Erie, Pa	29.84	757.9	78	25.6	65	W			5		2		SW					Clear	
§ Minnesota, Poughkeepsie, N. Y. *	29.88	758.9	70	21.1	95	NNW			4		8		NW					Cloudy	
§ Monocacy, Chefoo, China	29.65	753.1	64	17.8	94	E			2		10							Dense fog	
§ New Hampshire, Port Royal, S. C.	30.07	763.8	81	27.2	78	SW	14	6.3			5		SW	0	0			Fair	
Nipsic, N. 35° 47′, E. 28° 35′	29.81	757.2	75	23.9	68	WNW			5		5		WNW			Mod'ate	WNW	D. clouds	
§ Onward, Chimbote, Peru †	29.99	761.7	66	18.9	89	SE			1		10					Long	W	Cloudy	
§ Palos, Shanghai, China	29.61	752.1	74	23.3	77	WSW			1		10							Rainy	
§ Passaic, Washington, D. C.	30.06	763.5	75	23.9	90	W			1		5		SW	3.2	81.			Fair	
§ Pensacola, Vallejo, Cal.	29.93	760.2	53	11.7	93	SW			2		10		SW			Smooth			
§ Portsmouth, N. 36° 25′, W. 41° 20′	30.15	765.8	72	22.2	95	WSW			3		2		W			Mod ate	W	Clear	
§ Powhatan, New York, N. Y.	29.90	759.4	75	23.9	77	NW			5		5		NW					Fair	
§ Quinnebaug, Stockholm, Sweden	29.76	755.9	61	16.1	88	WSW			4		10		W			Smooth		Cloudy	
§ Richmond, Kobe, Japan	29.66	753.4	72	22.2	100	ENE			2		10		W	0.75	19.1			Rainy	
§ Saratoga Naples, Italy	29.98	761.5	82	27.8	42	ENE			1		8			0	0	Smooth		Hazy	
§ Shenandoah, Buenos Ayres, Argentine Republic	30.38	771.6	48	8.9	70	NNW			3		10		NNW			Mod'at	NW	Cloudy	
§ St. Louis, League Island, Pa	29.98	761.5	73	22.8	90	W	11	4.9			2		W	0	0			Clear	
Swatara, Foochow, China			81	27.2	83	SSW			3		10		SE			Smooth		Cloudy	
§ Tennessee, New York, N. Y.	29.93	760.2	82	27.8	60	WNW			3		5		NW					Fair	
§ Ticonderoga, Nagasaki, Japan	29.74	755.4	77	25.0	100	SW			3		10		SW			Smooth		Light rain	
§ Trenton, Deal, England	29.84	757.9	66	18.9	68	SW			2		5?			0	0	None		Cloudy	
§ Vandalia, N. 43° 15′, W. 69° 26′	29.89	759.2	71	21.7	75	SE			3		1		Calm					Clear	
§ Wabash, Boston, Mass	29.85	758.2	76	24.4	77	SSW	6	2.7			8			0	0			Cloudy	
§ Wachusett, Coquimbo, Chili	29.96	761.0	56	13.3	100	NNW			2		5		NNW			Smooth		Fair	
Wyoming, N. 38° 41′, W. 12° 10′	30.15	765.8	65	18.3	89	NW			2		8		NW			Smooth	NW	Cloudy	

NOTE—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. The elevation of Naval Hospital at Yokohama is 115 ft. or 35 meters, for which the constant reduction is 0.125 in., or 3.18 mm. †Aneroid. *The error of the barometer is not known.

UNITED STATES MARINE SERIES.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
ALLAN LINE, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Caspian, M. Trocks																			W. E. Jago.
S. S. Circassian																			R. Carruthers.
S. S. Hibernian, F. Archer, Off St. Johns, N. F.	29.96	761.0	42	5.6		SSE			5		10		SSE			Smooth		Cloudy	
S. S. Moravian, J. Graham																			John France.
S. S. Peruvian																			
S. S. Sardinian, J. E. Dutton																			A. Christie & F. W. Erskine
S. S. Sarmatian, A. D. Air																			A. D. Air.
AMERICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of H. D. Welsh, President; Peter Wright & Sons, General Agents, Philadelphia, Pa.																			
S. S. Illinois, T. W. Shackford																			C. M. Rowe & G. Worth,
S. S. Indiana, R. W. Sargent N. 39° 40′, W. 71° 40′	29.95	760.7	74	23.3	90	SW			6		1		WSW	0	0	Smooth		Clear	
S. S. Ohio, Henry Morrison Liverpool, Eng.†	29.79	756.7	67	19.4	95	S			2		10		S	2 h'rs	2 h'rs	Smooth		Rainy	Wm. Shackford.
S. S. Pennsylvania, Geo. H. Dodge																			Geo. H. Dodge
CALIFORNIA AND MEXICAN S. S. CO., MARINE SERIES. Furnished by the co-operation of J. Birmingham, Agent, San Francisco, California.																			
§S. S. Newbern, W. Metzger																			
CUNARD LINE, MARINE SERIES. Furnished by the co-operation of Ch. G. Francklyn, Agent, New York.																			
S. S. Algeria, W. Watson																			
S. S. Scythia, W. H. O. Hains																			H. Buckland.
NORTH GERMAN LLOYD OF BREMEN, MARINE SERIES. Furnished by the co-operation of A. Schumacher & Co., Agents, Baltimore, Md.																			
S. S. Amerika, C. Pohle																			
S. S. Braunschweig, C. Undutsch, N. 37° 07′, W. 75° 48′	30.07	763.8	77	25.0	86	WSW			3–4		5		SW	0	0	Smooth	WSW	Hazy	C. Undütsch.
S. S. Leipzig, F. Pfeiffer																			S. Risius.
S. S. Ohio, G. Meyer																			Reinicke & Schmidt.
S. S. Strassburg, O. Heinbruch																			

NOTE.—The S. S. Amerika gives sea-swell in general terms, the S. S. Braunschweig in general terms, or occasionally by the scale 0 to 9; the S. S. Leipzig by the scale 0 to 12.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer.
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
OCCIDENTAL AND ORIENTAL S. S. CO., MARINE SERIES. Furnished by the co-operation of Leland Stanford, President; D. D. Stubbs, Secretary, San Francisco, Cal.																			
§ S. S. Belgic, H. Davidson																			J. Jones.
§ S. S. Gaelic, W. H. Kidley, N. 25° 02′, E. 119° 52′	29.70	754.4	78	25.6	100	S			4	c		S		Light	Light	Smooth	S	D. clouds	J. A. Thompson.
§ S. S. Oceanic, J. Metcalfe, N. 42° 48′, E. 176° 44′ *	30.30	769.6	52	11.1	86	NW			1		Fog			0	0	Slight	NW	Foggy	Bond & Mann.
OREGON RAILWAY AND NAVIGATION CO., MARINE SERIES. Furnished by the co-operation of K. van Oterendorp, Agent, San Francisco, California.																			
S. S. Geo. W. Elder, J. M. Lachlan, Portland, Oregon†	29.95	760.7	55	12.8	87	NW			1		8		NNW			Smooth		Cloudy	J. M. Lachlan.
S. S. Oregon, E. Polemann																			L. Angerstein.
PACIFIC COAST S. S. CO., MARINE SERIES. Furnished by the co-operation of Goodall, Perkins & Co., Agents, San Francisco, California.																			
§ S. S. Ancon, E. Alexander San Francisco, Cal.†	29.97	761.2	52	11.1		SW			1		Fog							Foggy	
S. S. Orizaba, C. B. Johnson, N. 32° 50′, W. 117° 20′ †	29.92	760.0	59	15.0		SW			1		8		SSW	0	0	Smooth	SW	Fair	Harrison & Marshall.
S. S. State of California G. Debney, San Francisco, Cal.†	29.90	759.4	48	8.9		W			2		8		SW					Cloudy	
S. S. Victoria, H. M. Haywood, N. 46° 46′, W. 124° 52′ †	30.11	764.8	54?	12.2?	??	NNW			5		10					Mod'ate	W	Light rain	James C. Hunter.

NOTE.—With some exceptions, the originals give the barometer as read off; wind and weather by the Beaufort scales; no distinction between upper and lower clouds. †Aneroid. *The error of the barometer is not known

UNITED STATES MARINE SERIES—CONTINUED.

REPORTED TO THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY.

NAMES OF VESSELS AND CAPTAINS.	Barometer reduced to sea-level.		Temperature of the air.		Relative humidity.	Wind.				Clouds.				Rain-fall or melted snow in the past 24 hours.		Sea-swell.		Weather.	Observer
						Direction.	Velocity.		Force.	Amount.		Direction.							
										Up'er	Lo'er	Upper.	Lower.						
	Inches.	Millimeters.	Fahrenheit.	Centigrade.	Per cent.	From—	Miles per hour.	Meters per second.	0—10.	0—10.	0—10.	From—	From—	Inches.	Millimeters.	Character.	Direction from—		
PACIFIC MAIL S. S. CO., MARINE SERIES. Furnished by the co-operation of David S. Babcock, President; Williams, Dimond & Co., Agents, San Francisco, Cal.																			
§ S. S. Alaska, D. S. Austin, Panama, Panama.....†	29.89	759.2	78	25.6	95	N			2		8		N			Smooth		Cloudy	F. A. Johnston.
§ S. S. Australia, S. 1° 38′, W. 167° 27′.....†	29.93	760.2				E			3		2					Smooth	E	Clear	Banneman.
§ S. S. China, W. B. Seabury.																			
§ S. S. City of Chester, J. M. Lacklan.																			J. M. Lacklan.
§ S. S. City of New York, W. B. Cobb Sydney, N. S. W.....†	30 07	763.8	54	12.2	100	NW			2		0							Clear	W. H. Hawes.
§ S. S. City of Panama, M. Connolly.																			R. Thompson & J. Anderson.
§ S. S. City of Peking, G. G. Berry, N. 46° 30′, W. 153° 10′...†	30.09	762.0	45	7.2	100	E			5		10		SW	0	0	Light	ESE	Misty & foggy	
§ S. S. City of Sidney, H. C. Dearborn.																			E. LeSack.
§ S. S. City of Tokio, J. Maury																			F. S. Doane.
§ S. S. Colima, R. R. Searle, Panama, Panama. ....†	29.95	760.7	80	26.7	100	NNW			2		5		NW	0	0			Fair	
§ S. S. Dakota, H. G. Morse. Esquimalt, Vancouver's I'd....†	30.03	762.7	59	15.0	82	Calm			0		2		NW	0	0	None		Clear	
§ S. S. Granada, J. M. Cavarly N. 14° 39′, W. 74° 27′.....†	29.99	761.7	84	28.9	87	E			5		5k		E	Mod'ate	Mod'ate	Light	SE	Fair	C. T Rode.
§ S. S. Idaho, E. Alexander, San Francisco, Cal.....†	29.94	760.5	56	13.3		Calm			0		0			0	0			Fair	E. Alexander.
§ S. S. Zealandia, R. C. Ghest, S. 34° 10′, E. 168° 35′.....	29.84	757.9	61	16.1		SW			4		5		S			Conf'd	Var.	Fine	
RED STAR LINE, MARINE SERIES. Furnished by the co-operation of James A. Wright, President; Peter Wright & Sons, Agents, Philadelphia, Pa.																			
S. S. Belgenland, S. Jackson.																			
S. S. Nederland, S. Stokes.																			J. Farmer & W. Apetan.
WHITE STAR LINE, MARINE SERIES. Furnished by the co-operation of Ismay, Imrie & Co., Agents, Liverpool, and R. J. Cortis, Agent, New York.																			
S. S. Adriatic, J. W. Jennings.																			
S. S. Britanic, H. Perry, N. 43° 11′ W. 48° 52′....†	30.19	766.8	50	10.0	93	N			2		8		NW			Smooth		Rain & fog	J. Jones.
S. S. Celtic, B. Gleadell.																			
S. S. Republic, P. J. Irving																			G. W. Ryder.
MISCELLANEOUS MARINE SERIES. Furnished by the co-operation of the Observers named.																			
Schr. Abby K. Bentley, Jacksonville, Fla.....†	30.14	765.5	83.7	28.7		WSW			5		1		SW	0	0			Fine	A. R. Mehaffey.
Schr. Addie Fuller, J. Jorgensen, N. 40° 09′, W. 72° 30′.....	29.91	759.7	75	23.9	72	WSW	14	6.3			0			0	0			Clear	J. Jorgensen.
Schr. Annie R. Lewis, L. L. Lewis.																			L. L. Lewis.
Bark. Carrie Heckle, B. F. Woodbury, N. 28° 37′, W. 35° 27′.....*†	30.31	769.9	79	26.1		E			1		0					Smooth	ESE	Clear	B. F. Woodbury.
Schr. Della Hodgkins, N. 60° 19′, W 39° 23′.....†	29.76	755.9				E			1		10		E			Long	NW	Cloudy	S. S. Miner.
Brigantine George, W. H Champlin, N. 26° 30′, W. 65° 15′. .....†	30.42	772.7	85	29.4		W			1		0			0	0	Smooth		Clear	
Iron Cross, W. Randall, N. 37° 40′, W. 66° 10′.....*	30.10	764.5	81	27.2	87	WNW			2		3			0	0	Smooth	W	D. clouds	W. Randall.
British Barque Ivigtut, Adam Smith. N. 47° 17′, W. 50° 45′....*	30.05	763.3				SW			3		Fog					Smooth		Dense fog	
Ship Jumna, Jas. S. Garvin, Sydney, Cape Breton...	29.81	757.2	64	17.8	100	S			3		5		S	0	0			Foggy	James S. Garvin.

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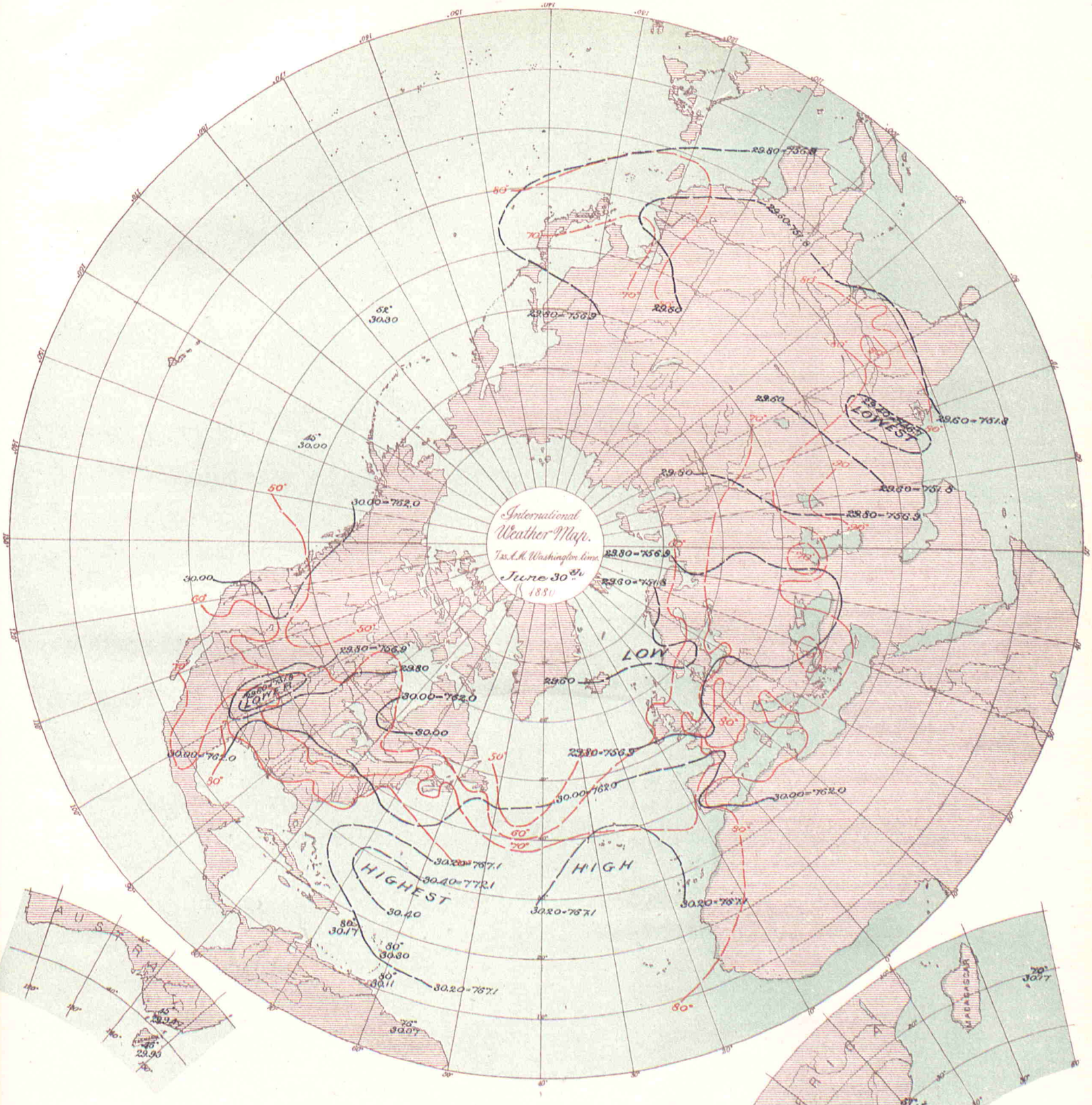
COLLATED AT THE OFFICE OF THE CHIEF SIGNAL OFFICER OF THE ARMY, WASHINGTON, D. C.

The records which appear in this Bulletin are copied from **the regular exchanges of this office,** made in each instance **in compliance with a special request,** and are published for the uses of the co-operating observers.

The barometric readings in the first two columns are reduced to freezing and their respective standards; those in the second two also to mean sea-level. For all Naval and Marine Series the correction for instrumental error and the reduction to sea-level have been applied whenever they could be ascertained by means of reliable comparisons, made when the vessel was at or near land stations. When rain has fallen, but neither amount nor duration is recorded, the word "Blank" is published in the rain-fall column. The "weather" is generally published as given; D. clouds for detached clouds. When the distinction between the upper and lower strata of clouds is not reported, the *kinds* or *types*, viz: cirrus, cumulus, stratus, nimbus, scud, fracto, pallio, haze, fog and smoke, as indicated, respectively, by the letters c, k, s, n, d, f, p, hz, fg, and sm'e are generally published with the amount in the lower-cloud column. The distinction between the upper and lower strata is carefully made in the United States Series and a portion of the Canadian Series, and the types are indicated by the above letters and their combinations in the proper column.

Chief Signal Officer.



Data, as appearing in the International Bulletin of similar date.

Isobars in *black* exhibit atmospheric pressure at sea-level, and are charted from data as reported by the several observers.

Isotherms in *red* exhibit temperature of air, similarly charted.

Broken or dotted lines indicate that the lines so broken are doubtful.

Arrows, when charted, fly with the wind and exhibit wind-direction and force.

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Albert J. Myer

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