STAGE OF WATER IN RIVERS.

In the following table are shown the danger points at the various river stations, the highest and lowest stages for October, 1884, with the dates of occurrence and the monthly ranges:

Heights of rivers above low-water mark. October, 1884.

Stations.	Danger-point on gauge.		Highest water.			Lowest water.			Monthly range.	
			Date.	Height.		Date.	Height.			
	Ft.	In.		Ft.	In.		Ft.	In.	Ft.	In.
Red River:										
Shreveport, Louisiana	29	9	5, 6, 7	2	1	27, 28, 29	0	2	1	11
Arkansas:										
Little Rock, Arkansas	33	0	8	12	4	26	3	5	8	11
Fort Smith, Arkansas	.....		5	5	3	22	*—3	10	9	1
Missouri:										
Yankton, Dakota	20	0	2, 3, 4	10	9	31	8	3	2	6
Omaha, Nebraska	16	0	4, 5	8	0	23, 24	6	10	1	2
Leavenworth, Kansas	21	0	13	18	0	1	5	1	12	11
Mississippi:										
Saint Paul, Minnesota	14	6	10	6	6	1	3	10	2	8
La Crosse, Wisconsin	18	0	10, 11	8	9	28,29,30	5	1	3	8
Dubuque, Iowa	21	10	16	14	7	31	9	1	5	6
Davenport, Iowa	15	0	11, 19	11	4	31	7	6	3	10
Keokuk, Iowa	14	0	9	13	4	31	8	10	4	6
Saint Louis, Missouri	30	0	2	22	3	31	17	5	4	10
Cairo, Illinois	40	0	5	19	8	25	15	9	3	11
Memphis, Tennessee	34	0	7	14	1	1	5	9	8	4
Vicksburg, Mississippi	41	0	13	18	0	1	5	1	12	11
New Orleans, Louisiana†	—2	6	14,15,16 27	—10	7	7	—12	6	1	11
Ohio:										
Pittsburg, Pennsylvania	20	0	5	6	7	26	0	3	6	4
Cincinnati, Ohio	50	0	14	5	1	31	2	11	2	2
Louisville, Kentucky	24	0	3, 4	3	11	9to12,15	2	7	1	4
Cumberland:										
Nashville, Tennessee	42	0	31	1	4	25,26,27	*—0	2	1	6
Tennessee:										
Chattanooga, Tennessee	33	0	31	1	1	19,20,21	0	2	0	11
Monongahela:										
Pittsburg, Pennsylvania	29	0	5	6	7	26	0	3	6	4
Savannah:										
Augusta, Georgia	.....		13	5	7	15	4	1	1	6
Willamette:										
Portland, Oregon	.....		13	5	0	1	0	11	4	1
Sacramento:										
Red Bluff, California	.....		15	1	6	1 to 12	0	10	0	8
Sacramento, California	.....		15	10	1	1, 2	7	9	2	4
Mobile:										
Mobile, Alabama	.....		27	18	2	9	15	7	2	7
Colorado:										
Yuma, Arizona	.....		.....	.....		.....	.....		.....	

* Below bench mark. † Below high-water mark of 1874 and 1883.

At Nashville, Tennessee, the Cumberland river was not navigable at any time during the month; on the 25th, 26th, and 27th, the river was two inches below the low-water mark of September 5, 1863.

The Tennessee river at Chattanooga was navigable for small steamers at the close of the month.

HIGH TIDES.

Eastport, Maine, 6th.
New River Inlet, North Carolina, 10th, 11th, 17th.
Jacksonville, Florida, 14th, 15th.
Indianola, Texas, 1st to 6th, 23d, 24th.
Scott's Hill, North Carolina, 11th, 13th, 23d.

VERIFICATIONS.

INDICATIONS.

The detailed comparison of the tri-daily indications for October, 1884, with the telegraphic reports for the succeeding twenty-four hours, shows the general average percentage of verifications to be 82.14 per cent. The percentages for the four elements are: Weather, 87.23; direction of the wind, 80.58; temperature, 78.61; barometer, 80.64 per cent. By geographical districts, they are: For New England, 83.03; middle Atlantic states, 85.77; south Atlantic states, 87.24; eastern Gulf states, 87.32; western Gulf states, 86.27; lower lake region, 79.08; upper lake region, 80.52; Ohio valley and Tennessee, 81.40; upper Mississippi valley, 77.98; Missouri valley, 73.34; north Pacific coast region, 80.53; middle Pacific coast region, 89.17; south Pacific coast region, 86.67. There were sixteen omissions to predict out of 3,211, or 0.50 per cent. Of the 3,195 predictions that have been made, one hundred and twenty-six, or 3.94 per cent., are considered to have entirely failed; one hundred and fifty-five, or 4.85 per cent., were one-fourth verified; three hundred and eighty-one, or 11.93 per cent., were one-half verified; five hundred and fifty-two, or 17.28 per cent., were three-fourths verified; 1,981, or 62.00 per cent., were fully verified, so far as can be ascertained from the tri-daily reports.

Professor T. C. Mendenhall, director of the Ohio Meteorological Bureau, reports as follows: The percentage of verification of railway signals for the month was, 91 for temperature and 87 for rain.

CAUTIONARY SIGNALS.

During October, 1884, two hundred and five cautionary signals were ordered. Of these, one hundred and forty-nine or 72.2 per cent., were justified by winds of twenty-five miles or more per hour at or within one hundred miles of the station. Forty-two cautionary off-shore signals were ordered, of which number thirty-three, or 78.6 per cent., were fully justified, both as to direction and velocity; thirty-seven, or 88.1 per cent., were justified as to direction; and thirty-nine, or 92.9 per cent., were justified as to velocity. Forty-one cautionary northwest signals were ordered at the lake ports, of which, twenty, or 48.8 per cent. were justified both as to direction and velocity; thirty-three, or 80.5 per cent. were justified as to direction only, and twenty-three, or 56.1 per cent. were justified as to velocity only. Of the forty-two cautionary off-shore signals that were ordered, twenty were changed from cautionary displays, and of the forty-one northwest signals ordered, all but four were changed from cautionary displays. Two hundred and eighty-eight signals of all kinds were ordered, two hundred and two, or 70.1 per cent., being fully justified. These do not include signals ordered at display stations where the velocity of the wind is only estimated. Eleven signals were ordered late. In one hundred cases winds of twenty-five miles or more per hour were reported, for which no signals were ordered.

TEMPERATURE OF WATER.

The following table shows the highest and lowest temperatures of the water at the several stations; the monthly range of water temperature; the average depth at which the observations were made; and the mean temperature of the air at the stations:

Temperature of water for October, 1884.

Station.	Temperature at bottom.		Range.	Average depth, feet and inches.		Mean temperature of the air at station.
	Max.	Min.				
	°	°	°	ft.	in.	°
Atlantic City, New Jersey	72.3	57.0	15.3	2	1	58.5
Alpena, Michigan	58.0	39.0	19.0	11	11	48.3
Augusta, Georgia	84.6	64.5	20.1	4	7	70.0
Baltimore, Maryland	73.0	59.8	13.2	9	11	60.2
Block Island, Rhode Island	65.5	51.1	14.4	7	2	54.9
Boston, Massachusetts	62.2	48.3	13.9	21	0	52.3
Buffalo, New York	68.0	50.2	17.8	10	0	52.0
Canby, Fort, Washington Territory	56.7	51.7	5.0	17	8	52.5
Cedar Keys, Florida	81.6	69.8	11.8	10	8	74.3
Charleston, South Carolina	82.0	66.9	15.1	40	6	71.2
Chicago, Illinois	62.7	48.4	14.3	7	11	56 4
Chincoteague, Virginia	79.2	44.0	35.2	4	0	62.4
Cleveland, Ohio*	69.5	51.7	17.8	14	0	55.7
Detroit, Michigan	66.0	47.6	19.0	24	1	56.3
Delaware Breakwater, Delaware	75.5	59.7	15.8	8	3	61.1
Duluth, Minnesota	51.5	41.9	9.6	10	3	46.7
Eastport, Maine	51.5	47.7	3.8	15	0	45.4
Escanaba, Michigan	59.8	46.6	13.2	17	10	47.5
Galveston, Texas	83.5	65.5	18.0	13	0	74.8
Grand Haven, Michigan	67.4	45.4	22.0	19	0	54.1
Indianola, Texas	84.2	62.4	21.8	9	5	74.0
Jacksonville, Florida	83.2	70.0	13.2	18	0	72.8
Key West, Florida	83.7	76.6	7.1	17	5	78.3
Mackinaw City, Michigan	59.8	46.5	13.3	10	0	48.8
Macon, Fort, North Carolina	82.0	64.2	17.8	6	11	67.7
Marquette, Michigan	55.5	42.7	12.8	10	0	47.5
Milwaukee, Wisconsin	55.2	47.7	7.5	8	0	53.3
Mobile, Alabama	84.4	69.5	14.9	16	9	72.2
New Haven, Connecticut	70.0	50.0	20.0	15	5	53.2
New London, Connecticut	66.0	52.6	13.4	11	9	54.6
New York City	69.2	53.0	16.2	15	10	56.1
Norfolk, Virginia	78.2	53.8	24.4	10	6	64.6
Pensacola, Florida	84.8	67.1	17.7	17	7	73.8
Portland, Maine	56.7	47.6	9.1	16	0	50.6
Portland, Oregon	57.5	49.7	7.8	52	8	51.2
Sandusky, Ohio	71.0	47.0	24.0	10	0	56.6
Sandy Hook, New Jersey	71.4	51.8	19.6	1	10	57.2
San Francisco, California	57.4	54.8	2.6	34	7	56.9
Savannah, Georgia	82.6	66.2	16.4	10	6	70.6
Smithville, North Carolina	81.5	65.8	15.7	10	9	68.0
Toledo, Ohio	69.7	47.5	22.2	10	10	56.3
Wilmington, North Carolina	80.0	66.0	14.0	18	9	68.5

* Record for twenty-eight days.

Table of miscellaneous meteorological data for October, 1884—Signal Service observations.

Atmospheric pressure:

Stations.	Elevation above sea-level.	Mean actual barometer.	Departure from normal.	Mean reduced barometer.	Extremes: Highest barometer	Date.	Lowest barometer	Date.	Monthly range of barometer.
New England.									
Block Island	27	30.08	....	30.11	30.59	26	29.68	17	0.91
Boston	122	29.96	00	30.10	30.59	26	29.65	17	0.94
Eastport	61	29.95	−.05	30.02	30.57	20	29.50	17	1.07
Mount Washington*	6,279	23.73	....	30.07	30.44	26	29.69	17	0.75
New Haven	107	30.00	....	30.12	30.57	...	29.72	17	0.86
New London	47	30.08	+.01	30.14	30.58	26	29.71	17	0.87
Portland	45	30.01	−.02	30.06	30.56	26	29.60	17	0.97
Middle Atlantic states.									
Albany	83	30.03	−.01	30.12	30.63	20	29.65	8	0.97
Atlantic City	130	30.12	+.02	30.14	30.57	26	29.77	17	0.80
Baltimore	45	30.12	+.02	30.17	30.62	26	29.75	8	0.87
Barnegat City	22	30.12	+.02	30.14	30.59	26	29.75	8	0.84
Cape Henry	16	30.14	+.04	30.16	30.60	26	29.79	8	0.80
Cape May	27	30.12	....	30.15	30.60	26	29.78	8	0.82
Chincoteague	8	30.14	+.03	30.16	30.59	26	29.79	8	0.80
Delaware Breakwater	20	30.13	+.03	30.15	30.62	26	29.76	8	0.86
Lynchburg	652	29.48	+.04	30.17	30.57	26	29.82	8	0.75
New York	164	29.97	+.01	30.15	30.60	26	29.74	8	0.85
Norfolk	30	30.15	+.00	30.18	30.56	26	29.85	8	0.70
Philadelphia	117	30.04	+.02	30.17	30.61	26	29.78	8	0.82
Sandy Hook	28	30.12	+.01	30.15	30.60	26	29.74	8	0.86
Washington City	106	30.06	+.03	30.18	30.64	26	29.70	8	0.88
South Atlantic states.									
Atlanta	1,129	29.00	+.05	30.19	30.49	20	29.96	8	0.52
Augusta	183	29.99	+.06	30.18	30.50	20	29.90	9	0.60
Charleston	52	30.07	+.02	30.13	30.47	20	29.91	30	0.56
Charlotte	808	29.33	+.06	30.19	30.54	20	29.92	8	0.62
Fort Macon	11	30.15	+.06	30.16	30.54	20	29.89	30	0.64
Hatteras	12	30.13	+.04	30.14	30.56	20	29.85	30	0.70
Jacksonville	43	30.06	+.03	30.10	30.37	20	29.89	9	0.48
Kitty Hawk	22	30.14	+.03	30.16	30.57	26	29.86	18	0.70
Savannah	87	30.05	+.04	30.14	30.44	20	29.92	9	0.52
Smithville	34	30.12	+.04	30.16	30.53	20	29.91	30	0.62
Wilmington	52	30.10	+.04	30.15	30.52	20	29.89	30	0.62
Eastern Gulf states.									
Mobile	35	30.08	+.06	30.12	30.39	24	29.92	9	0.47
Montgomery	219	29.90	+.04	30.13	30.41	25	29.91	8	0.50
New Orleans	52	30.02	+.04	30.08	30.34	24	29.94	8	0.41
Pensacola	30	30.08	+.03	30.10	30.36	25	29.91	8	0.45
Vicksburg	244	29.89	+.07	30.15	30.45	24	29.94	26	0.50
Western Gulf states.									
Fort Smith	451	29.66	+.13	30.14	30.48	23	29.90	26	0.58
Galveston	40	30.05	+.00	30.09	30.32	24	29.92	26	0.40
Indianola	26	30.05	+.05	30.08	30.30	16	29.93	25	0.37
Little Rock	299	29.82	+.08	30.14	30.49	23	29.89	20	0.60
Palestine	533	29.58	+.11	30.14	30.39	24	29.95	26	0.44
Shreveport	227	29.90	+.10	30.14	30.42	24	29.89	26	0.54
Ohio valley & Tennessee.									
Chattanooga	783	29.34	+.03	30.17	30.46	20	29.92	8	0.53
Cincinnati	620	29.52	+.07	30.18	30.50	15	29.89	8	0.61
Columbus	805	29.30	+.00	30.16	30.49	15	29.84	8	0.64
Greencastle	....	29.20	....	....	....	...	....	...	......
Indianapolis	753	29.34	+.07	30.14	30.46	15	29.84	8	0.62
Knoxville	980	29.15	+.04	30.19	30.49	20	29.94	8	0.55
Louisville	530	29.58	+.08	30.16	30.44	15	29.88	8	0.56
Memphis	321	29.82	+.08	30.16	30.47	23	29.95	20	0.53
Nashville	549	29.57	+.06	30.15	30.44	24	29.91	8	0.53
Pittsburg	766	29.32	+.02	30.14	30.49	25	29.80	8	0.69
Lower lake region.									
Buffalo	690	29.37	+.03	30.12	30.54	25	29.70	8	0.84
Cleveland	690	29.39	+.03	30.13	30.49	25	29.76	8	0.73
Detroit	661	29.40	+.03	30.11	30.52	14	29.74	8	0.78
Erie	681	29.39	+.04	30.12	30.52	25	29.71	8	0.81
Oswego	334	29.72	−.05	30.08	30.58	20	29.63	8	0.95
Rochester	621	29.43	.00	30.10	30.58	26	29.67	8	0.91
Sandusky	639	29.45	+.05	30.14	30.52	14	29.79	8	0.73
Toledo	651	29.42	+.04	30.12	30.52	14	29.76	8	0.77
Upper lake region.									
Alpena	609	29.37	−.03	30.04	30.56	14	29.69	5	0.86
Chicago	661	29.40	+.05	30.11	30.53	14	29.79	5	0.73
Duluth	687	29.27	+.01	30.03	30.50	14	29.41	5	1.08
Escanaba	613	29.35	−.01	30.02	30.54	14	29.50	5	1.04
Grand Haven	620	29.42	+.04	30.09	30.55	14	29.76	5	0.79
Mackinaw City	605	29.38	−.02	30.05	30.60	14	29.64	5	0.96
Marquette	673	29.29	.00	30.03	30.57	14	29.49	5	1.08
Milwaukee	697	29.33	+.04	30.09	30.50	14	29.71	5	0.85
Port Huron	633	29.39	+.01	30.08	30.52	14	29.73	8	0.79
Upper Mississippi valley.									
Cairo	377	29.78	+.07	30.18	30.50	23	29.95	26	0.54
Davenport	615	29.45	+.07	30.11	30.50	14	29.81	5	0.70
Des Moines	849	29.19	+.05	30.11	30.51	23	29.78	5	0.73
Dubuque	665	29.38	....	30.10	30.51	14	29.78	5	0.73
Keokuk	618	29.46	+.08	30.13	30.48	23	29.84	20	0.64
La Crosse	725	29.28	+.02	30.06	30.51	14	29.63	5	0.88
Saint Louis	583	29.54	+.07	30.16	30.48	23	29.88	8	0.60
Saint Paul	801	29.16	+.02	30.03	30.44	14	29.54	5	0.91
Springfield	644	29.47	+.08	30.16	30.49	15	29.88	7	0.61
Madison†	961	29.06	+.09	....	....	14	....	3	0.82
Missouri valley.									
Fort Bennett	1,510	28.42	....	30.04	30.42	22	29.55	2	0.87
Huron	1,305	28.62	+.03	30.05	30.45	23	29.61	10	0.84
Leavenworth	842	29.21	+.05	30.11	30.50	23	29.85	26	0.64
Omaha	1,113	28.91	+.04	30.11	30.49	23	29.82	31	0.67
Yankton	1,228	28.73	+.02	30.06	30.45	23	29.66	19	0.79
Crete‡	1,420	....	....	30.06	30.48	22	29.74	2	0.74

Temperature of the air (in degrees Fahrenheit):

Stations.	Monthly mean.	Departure from normal.	Extremes: Max.	Date.	Mean max	Min.	Date.	Mean min	Monthly range.	Daily ranges: Greatest.	Date.	Least.	Date.	Mean rel. humidity.	Mean dew-point.
New England.															
Block Island	54.9	−0.5	73.5	1	60.8	32.6	26	48.6	40.9	26.8	27	1.7	3	77.9	47.8
Boston	52.3	0	83.3	1	61.5	30.6	26	43.8	52.7	31.1	4	6.6	30	67.3	40.8
Eastport	45.4	−2.0	67.9	1	51.9	27.4	16	39.3	40.5	18.6	16	4.3	30	74.2	37.3
Mount Washington*	28.4	−2.1	56.4	4	36.2	43.0	26	20.9	52.1	31.4	13	4.8	12	92.5	20.3
New Haven	53.2	−0.7	81.3	4	62.5	26.5	26	43.9	54.8	29.3	6	5.0	30	72.7	43.8
New London	54.6	−0.3	79.2	1	62.6	30.6	26	46.8	48.6	25.2	10	5.4	30	84.7	49.8
Portland	50.6	0	79.2	1	58.4	34.6	26	43.1	44.6	39.3	20	5.9	31	69.5	40.2
Middle Atlantic states.															
Albany	51.3	−0.1	80.1	4	60.2	26.6	26	42.4	53.5	29.1	6	5.5	30	62.4	37.9
Atlantic City	58.5	+1.3	83.0	4	65.8	32.4	26	50.8	50.6	23.0	10	5.5	31	76.0	50.4
Baltimore	60.2	+2.1	88.7	6	69.2	35.4	26	52.3	53.3	28.4	11	2.9	30	63.8	46.5
Barnegat City	58.3	+1.9	81.1	4	66.7	32.6	26	50.8	48.5	23.0	20	6.1	29	81.0	52.1
Cape Henry	64.9	+1.8	80.6	5	72.8	39.2	25	58.4	46.8	24.1	17	6.1	29	73.0	54.9
Cape May	60.3	+1.3	85.7	1	66.8	36.0	26	53.1	49.7	23.5	9	5.8	3	75.9	52.3
Chincoteague	62.4	+1.4	84.2	4	70.4	36.5	26	54.4	47.7	23.0	14	7.0	3	77.2	54.6
Delaware Breakwater	61.1	+0.4	83.3	6	67.9	34.5	16	54.7	48.8	20.9	16	3.5	3	72.5	51.1
Lynchburg	62.6	+4.2	91.3	6	74.1	32.7	26	52.8	58.6	35.7	16	6.2	30	63.1	47.7
New York	56.1	+0.5	84.5	1	65.3	32.5	26	48.8	52.0	23.0	4	3.6	3	69.8	45.3
Norfolk	64.6	+3.5	89.0	5	73.2	39.2	25	56.8	49.8	24.5	17	6.7	31	72.4	54.7
Philadelphia	57.2	+0.9	83.7	4	67.5	31.7	26	48.8	52.0	27.7	11	8.1	31	67.8	45.6
Sandy Hook	57.2	+0.2	81.1	1	65.5	35.1	26	49.9	46.0	25.8	20	4.3	31	69.9	40.8
Washington City	59.6	+2.5	90.2	4	70.4	31.7	26	50.4	58.5	31.7	11	4.2	30	68.3	47.6
South Atlantic states.															
Atlanta	67.8	+4.2	90.8	3	77.1	33.6	24	58.9	57.2	24.8	16	8.8	28	63.1	53.5
Augusta	70.6	+5.8	93.5	6	81.3	38.0	25	60.9	55.5	32.1	26	12.2	10	60.5	57.2
Charleston	71.2	+4.0	91.4	6	77.9	45.2	24	65.3	46.2	20.8	17	6.3	10	77.1	62.9
Charlotte	66.4	+4.3	91.9	5	70.4	36.0	24	50.6	55.9	27.2	10	12.2	10	63.1	51.9
Fort Macon	67.7	+0.2	83.9	6	73.6	43.8	24	61.9	40.1	17.9	23	4.9	30	77.2	59.8
Hatteras	67.4	+2.1	83.2	6	73.0	47.0	25	62.3	36.2	17.2	8	5.0	30	78.7	60.1
Jacksonville	72.8	+2.4	91.7	7	80.6	49.4	25	65.6	42.3	21.3	17	8.0	21	78.1	64.9
Kitty Hawk	66.8	+3.0	86.0	4	73.8	42.1	25	59.8	43.9	22.8	17	4.3	3	76.2	58.3
Savannah	70.6	+3.6	92.0	7	78.3	44.5	24	63.3	47.5	23.0	17	8.3	10	73.1	60.6
Smithville	68.0	+2.2	86.5	6	74.8	36.9	24	59.7	49.6	25.7	10	5.2	30	70.4	59.8
Wilmington	68.5	+4.2	92.5	6	77.8	40.7	24	59.7	51.8	27.4	25	5.3	30	73.0	58.7
Eastern Gulf states.															
Mobile	72.2	+4.2	93.4	8	82.5	43.7	24	63.6	49.7	30.1	25	7.7	27	71.5	61.1
Montgomery	71.5	+5.4	96.1	7	83.0	40.0	24	61.3	56.1	33.9	17	10.8	28	60.9	54.9
New Orleans	74.4	+3.8	90.0	8	80.3	49.0	24	67.2	41.0	18.0	10	5.8	27	72.2	63.9
Pensacola	73.8	+2.4	95.2	8	82.1	46.2	24	67.4	49.0	22.8	19	6.0	27	68.4	61.6
Vicksburg	69.3	+3.0	93.7	5	79.9	39.2	24	60.7	54.5	27.1	12	3.9	27	72.4	58.9
Western Gulf states.															
Fort Smith	64.3	+3.1	94.6	5	79.3	39.0	28	55.0	55.6	36.5	16	6.3	26	75.1	55.0
Galveston	74.8	+2.3	87.2	1	79.7	57.3	30	69.7	29.9	14.0	23	6.0	28	75.2	66.0
Indianola	74.0	+1.1	80.0	1	79.2	54.0	29	68.4	32.0	18.5	25	5.3	4	80.9	67.4
Little Rock	65.5	−0.1	90.0	5	75.8	35.2	24	57.2	50.8	32.0	8	9.4	27	80.6	58.8
Palestine	66.8	−0.8	89.1	6	77.0	46.1	23	58.8	43.0	31.0	11	5.8	24	75.3	57.5
Shreveport	68.0	+1.8	92.7	6	79.5	42.5	24	59.1	50.2	31.9	31	8.1	28	72.5	57.3
Ohio valley & Tennessee.															
Chattanooga	66.2	+2.9	90.8	5	76.8	34.0	24	57.5	56.8	29.6	16	4.5	27	69.6	54.3
Cincinnati	61.3	+3.0	87.7	3	69.8	31.0	24	54.6	56.7	27.5	19	6.7	29	67.9	49.5
Columbus	58.1	+1.4	87.0	3	67.8	28.8	24	50.0	58.2	30.5	8	9.8	27	71.9	48.1
Greencastle	57.7	....	85.8	2	66.4	28.2	24	50.4	57.6	22.8	24	9.7	20	74.8	48.7
Indianapolis	58.3	+2.9	87.0	2	67.4	31.2	24	50.8	55.8	24.0	17	8.5	27	71.3	48.2
Knoxville	64.7	+5.6	94.0	3	77.6	29.0	24	54.2	65.0	34.7	19	5.4	28	69.0	52.0
Louisville	63.3	+4.8	90.0	2	73.0	36.0	24	55.3	54.0	27.2	22	9.9	6	73.5	53.9
Memphis	66.3	+4.5	92.0	1	75.5	36.0	24	58.0	56.0	29.0	8	7.0	27	72.7	56.2
Nashville	65.2	+4.3	91.9	1	70.0	30.2	24	55.9	61.7	35.5	19	9.2	29	70.7	54.0
Pittsburg	58.1	+3.2	91.1	3	70.4	29.0	24	48.1	62.1	41.2	19	10.8	30	71.0	47.4
Lower lake region.															
Buffalo	52.0	+0.9	72.5	4	59.3	24.7	26	44.7	47.8	28.1	26	5.5	4	82.0	46.4
Cleveland	55.7	+2.5	84.4	4	65.3	27.3	24	47.9	57.1	30.5	11	10.7	1	68.1	44.4
Detroit	56.3	+4.3	85.0	3	65.0	27.8	24	47.2	57.2	28.2	15	8.4	28	65.9	44.5
Erie	55.6	+2.1	79.9	4	63.4	31.4	20	48.4	48.5	35.5	11	6.1	14	73.7	40.9
Oswego	50.3	−1.4	80.1	4	61.9	25.6	26	43.0	54.5	31.8	21	7.7	31	72.0	40.8
Rochester	51.2	+0.9	84.1	4	61.8	24.0	26	43.8	60.1	33.6	10	8.5	9	72.4	41.8
Sandusky	56.6	+1.0	86.0	3	64.6	30.0	24	50.4	56.0	26.5	11	3.4	14	69.2	46.0
Toledo	56.3	+2.7	85.0	4	64.9	30.2	30	47.4	54.8	26.7	11	7.9	31	72.4	46.8
Upper lake region.															
Alpena	48.3	+2.9	84.0	3	56.2	20.9	24	40.0	63.1	33.0	3	4.9	30	74.8	39.5
Chicago	56.4	+3.6	83.4	2	64.2	27.7	23	48.6	55.7	24.3	24	6.4	14	69.3	45.9
Duluth	46.7	+1.6	77.8	19	54.6	19.4	23	40.2	58.4	31.2	9	4.9	30	72.6	37.3
Escanaba	47.5	+2.4	77.6	3	55.6	22.4	23	40.4	55.2	23.9	9	5.9	21	73.7	38.7
Grand Haven	54.1	+3.4	75.6	5	60.2	29.4	23	46.9	46.2	23.7	8	4.8	4	73.1	45.3
Mackinaw City	48.8	+0.4	79.0	3	55.6	27.7	25	41.9	51.3	34.2	19	6.6	2	72.9	39.9
Marquette	47.6	+1.7	81.8	3	56.7	20.3	23	38.2	61.5	35.2	19	7.4	21	66.7	36.2
Milwaukee	53.3	+3.7	83.1	3	61.5	27.2	23	46.2	55.9	27.0	2	4.2	26	72.5	44.0
Port Huron	51.0	+1.1	84.0	3	60.9	23.8	24	43.3	60.2	32.2	3	9.0	13	77.3	43.4
Upper Mississippi valley.															
Cairo	63.3	+3.7	88.0	2	72.3	38.0	24	55.5	50.0	26.7	8	5.3	26	75.4	54.5
Davenport	57.2	+4.4	83.2	3	65.5	28.6	23	49.3	54.6	23.2	28	4.2	1	71.8	47.3
Des Moines	55.6	+2.6	85.8	3	65.3	27.6	23	46.3	58.2	30.4	17	7.1	30	71.0	45.5
Dubuque	55.1	+4.2	85.0	3	64.4	27.7	28	47.1	57.3	25.3	17	5.0	1	69.9	44.5
Keokuk	58.5	+3.7	86.2	4	68.3	28.7	23	49.7	57.5	27.2	24	6.1	26	72.3	48.5
La Crosse	54.1	+4.5	84.0	3	61.4	26.0	23	46.8	58.0	27.0	7	4.5	1	73.5	45.4
Saint Louis	62.8	+5.1	87.7	5	72.1	33.9	23	55.5	53.8	32.6	8	9.5	27	71.6	52.9
Saint Paul	51.8	+4.7	81.0	2	61.5	23.0	23	43.4	58.0	29.4	12	5.8	1	71.6	42.3
Springfield	59.7	+2.6	86.0	2	69.8	34.9	23	51.1	51.1	25.4	8	10.7	4	68.3	48.6
Madison†	51.5	+3.0	80.0	3	60.0	26.0	23	44.7	54.0	20.3	8	6.2	4	78.0	......
Missouri valley.															
Fort Bennett	50.6	+4.1	85.0	2	65.9	16.0	23	37.8	69.0	51.2	9	12.5	7	59.4	35.3
Huron	49.6	+3.7	81.8	2	62.8	22.0	23	38.3	59.8	41.5	9	10.6	7	65.7	37.2
Leavenworth	59.4	+3.3	86.0	4	70.5	32.0	23	49.3	54.0	34.4	7	11.0	26	69.5	48.3
Omaha	57.3	+4.7	84.5	3	68.1	29.8	23	47.5	54.7	29.0	7	9.3	22	69.3	46.5
Yankton	53.9	+5.2	87.3	18	65.7	24.7	23	43.4	62.6	40.6	18	10.8	27	63.8	40.0
Crete‡	55.7	....	85.1	18	70.0	25.7	27	46.3	59.4	38.0	17	13.0	21	72.4	......

Precipitation, winds and days:

Stations.	Precipitation.	Departure from normal.	Winds: Total movement.	Prevailing direction.	Max. velocity: Miles p. hr.	Direction.	Date.	No. of rainy days.	No. of cloudy days.	No. of fair days.	No. of clear days.
New England.											
Block Island	3.89	−1.40	11,494	sw.	44	ne.	31	11	11	12	8
Boston	3.17	−1.08	9,288	sw.	35	sw.	22	13	10	11	10
Eastport	1.88	−2.92	7,599	nw.	34	ne.	31	12	11	12	8
Mount Washington*	12.91	+5.98	25,475	nw.	92	nw.	20	22	6	15	10
New Haven	2.49	−1.36	5,737	sw.	26	w.	18	8	8	11	12
New London	3.53	−0.77	5,242	sw.	25	sw.	22	17	7	13	11
Portland	2.21	−1.14	6,256	sw.	33	n.	9	15	11	12	8
Middle Atlantic states.											
Albany	2.64	−0.49	5,604	sw.	28	sw.	22	11	13	12	6
Atlantic City	2.94	+0.14	6,644	nw.	25	ne.	2	10	6	12	13
Baltimore	1.42	−1.55	3,905	n.	20	sw.	22	10	8	17	16
Barnegat City	2.19	−1.39	10,371	sw.	36	nw.	18	13	7	13	11
Cape Henry	0.74	−3.51	9,722	n.	40	nw.	23	5	3	10	18
Cape May	1.33	−2.20	11,618	s.	48	nw.	23	9	4	13	14
Chincoteague	1.12	−2.50	7,399	n.: s.	33	ne.	15	7	4	13	14
Delaware Breakwater	1.12	−1.95	10,697	sw.	51	ne.	15	7	2	14	15
Lynchburg	0.54	−2.49	2,098	nw.	20	nw.	18	5	6	8	17
New York	3.63	+0.51	8,644	w.	44	w.	18	10	7	12	12
Norfolk	0.47	−3.49	5,023	ne.	26	n.	15	4	1	13	17
Philadelphia	1.54	−1.43	7,173	n.	33	s.	26	12	7	12	12
Sandy Hook	4.21	+0.88	12,831	nw.	52	nw.	18	13	7	10	14
Washington City	1.73	−1.27	3,990	n.	23	s.	26	7	5	15	11
South Atlantic states.											
Atlanta	0.70	−2.06	6,442	e.	24	nw.	23	4	3	7	21
Augusta	0.83	−1.39	2,319	ne.	16	ne.	15	3	2	7	22
Charleston	0.35	−4.65	5,401	e.	24	ne.	15	6	3	12	16
Charlotte	1.51	−2.09	3,254	n.	10	n.	15	4	5	9	17
Fort Macon	0.34	−1.72	9,224	ne.	40	ne.	14	4	5	7	19
Hatteras	1.23	−6.03	6,610	ne.	32	nw.	24	5	4	11	16
Jacksonville	4.12	−2.48	4,659	ne.	22	n.	14	9	5	13	13
Kitty Hawk	1.23	−3.50	10,278	ne.	47	ne.	15	4	2	16	13
Savannah	2.29	−1.51	4,978	ne.	20	ne.	10	5	2	8	21
Smithville	0.23	−5.66	5,993	e.	24	ne.	27	3	3	5	23
Wilmington	0.63	−3.37	3,370	ne.	19	ne.	15	3	4	12	15
Eastern Gulf states.											
Mobile	5.36	+1.93	4,310	n.	29	se.	27	6	3	6	22
Montgomery	1.87	−0.78	3,643	ne.	20	se.	27	4	5	4	22
New Orleans	5.60	+1.90	5,041	e.	23	e.	25	10	5	9	17
Pensacola	2.43	−2.31	4,822	ne.	24	se.	26	5	4	8	19
Vicksburg	1.08	−2.63	3,456	n.	18	se.	26	5	6	6	19
Western Gulf states.											
Fort Smith	1.32	−2.09	2,510	e.	16	n.; nw	8	3	4	13	14
Galveston	7.37	+1.75	6,760	se.	27	n.	22	10	4	14	13
Indianola	7.94	+4.33	8,878	e.	39	n.	8	10	2	13	16
Little Rock	1.30	−2.57	2,559	nw.	20	nw.	8	4	4	9	18
Palestine	1.45	−2.06	5,501	ne.	20	se.	25	7	3	11	17
Shreveport	0.54	−3.38	3,083	n.	25	nw.	8	5	8	5	18
Ohio valley & Tennessee.											
Chattanooga	1.83	−1.73	3,427	nw.	24	s.	26	5	6	5	20
Cincinnati	1.35	−1.70	3,300	se.	20	sw.	21	10	4	9	18
Columbus	1.66	−2.17	4,451	w.	28	sw.	8	5	5	13	13
Greencastle	1.27	....	3,845	sw.	24	sw.	21	8	2	14	15
Indianapolis	2.31	−1.16	3,481	s.	17	nw.	22	9	4	14	13
Knoxville	2.05	−0.96	2,750	ne.	19	sw.	27	5	5	3	23
Louisville	2.00	−1.51	4,522	n.	22	w.	8	7	2	15	14
Memphis	2.83	−1.17	3,620	nw.	29	nw.	8	6	6	7	18
Nashville	2.43	−0.62	3,869	nw.	31	se.	26	4	6	9	16
Pittsburg	2.02	−0.57	4,040	nw.	21	nw.	8	10	7	13	11
Lower lake region.											
Buffalo	1.54	−2.38	8,993	sw.	42	w.	22	17	10	14	7
Cleveland	1.97	−1.16	7,006	s.	32	s.	22	10	6	15	10
Detroit	1.96	−0.91	7,254	s.	30	s.	27	9	9	11	11
Erie	3.23	−1.11	8,243	s.	36	nw.	23	16	11	10	10
Oswego	3.21	−0.28	8,612	se.	35	nw.	25	16	16	11	4
Rochester	1.87	−1.49	8,789	sw.	32	sw.	20	15	13	16	2
Sandusky	1.18	−2.32	9,215	sw.	49	n.	8	7	7	12	12
Toledo	2.14	−0.65	6,014	sw.	28	nw.	8	9	6	15	10
Upper lake region.											
Alpena	3.75	−1.01	7,769	w.	35	e.	2	16	11	13	7
Chicago	3.59	−0.27	5,745	sw.	35	n.	8	9	6	11	14
Duluth	3.47	+0.39	6,883	w.	46	ne.	2	16	11	15	5
Escanaba	7.97	+4.29	8,034	s.	36	nw.; n	20	16	12	13	6
Grand Haven	6.10	+2.23	9,585	s.	39	w.	22	14	11	11	9
Mackinaw City	3.85	+0.98	9,246	nw.	36	sw.	20	18	15	10	6
Marquette	6.02	+2.36	8,110	nw.	35	sw.	15	12	11	13	6
Milwaukee	2.18	−1.67	8,713	sw.	37	sw.	24	10	7	15	9
Port Huron	4.86	+1.79	6,967	s.	32	nw.	8	13	7	15	9
Upper Mississippi valley.											
Cairo	1.89	−1.54	4,395	s.	26	nw.	8	5	2	10	19
Davenport	7.17	+4.37	6,083	sw.	25	sw.	5	11	5	10	16
Des Moines	5.33	+0.73	4,431	sw.	20	ne.	7	10	6	12	13
Dubuque	4.16	+1.04	3,773	s.	20	w.	5	9	7	10	14
Keokuk	3.35	−0.30	5,426	s.	23	se.	20	10	4	9	18
La Crosse	2.31	−0.51	6,508	s.	31	s.	5	14	6	15	10
Saint Louis	2.48	−0.22	7,590	s.	36	nw.	21	6	3	9	19
Saint Paul	2.43	+0.22	6,051	s.	27	....	...	11	9	13	9
Springfield	2.74	−1.89	5,097	s.	20	....	...	8	4	13	4
Madison†	4.60	+1.57	9,190	s.	34	s.	5	8	7	...	...
Missouri valley.											
Fort Bennett	0.96	+0.45	6,276	nw.	36	nw.	26	4	6	11	14
Huron	1.52	−0.21	8,101	n.	31	w.	5	7	6	10	15
Leavenworth	3.41	+0.05	4,373	s.	19	s.	...	10	4	8	19
Omaha	5.81	+2.92	7,125	s.	31	n.; sw.	...	9	6	10	15
Yankton	1.97	−0.51	7,485	n.	33	sw.	20	6	7	12	12
Crete‡	3.80	....	9,413	s.	44	....	3	7	7	...	...

Table of miscellaneous meteorological data for October, 1884—Signal Service observations—Continued.

Stations.	Elevation above sea-level.	Atmospheric pressure. Mean actual barometer.	Departure from normal.	Mean reduced barometer.	Extremes. Highest barometer	Date.	Lowest barometer	Date.	Monthly range of barometer.	Monthly mean.	Departure from normal.	Temperature of the air (in degrees Fahrenheit). Extremes. Max.	Date.	Mean max	Min.	Date.	Mean min	Monthly range.	Daily ranges. Greatest.	Date.	Least.	Date.	Mean rel. humidity.	Mean dew-point.	Precipitation.	Departure from normal	Winds. Total movement.	Prevailing direction.	Max. velocity. Miles p.hr	Direction.	Date.	No. of rainy days.	No. of cloudy days.	No. of fair days.	No. of clear days.
Extreme northwest.																																			
Moorhead	923	28.98	—.01	30.00	30.43	23	29.31	5	1.12	44.3	+1.8	77.7	2	56.0	14.9	23	35.0	62.8	36.0	9	8.5	29	65.8	32.4	3.70	+1.61	9,843	s.	45	s.	25	9	8	15	8
Bismarck	1,694	28.16	.00	30.04	30.50	20	29.61	10	0.84	46.5	+4.1	80.6	18	58.9	10.5	27	35.7	70.1	42.3	23	11.5	31	67.1	34.9	0.92	—0.41	7,037	nw.	35	nw.	21	5	4	13	14
Fort Buford	1,930	27.92	—.03	30.02	30.42	22	29.62	18	0.79	44.5	+2.9	85.9	18	32.6	14.3	27	22.8	71.6	43.8	9	8.3	2	62.7	30.5	0.44	—0.61	7,320	w.	48	nw.	25	6	10	16	5
Saint Vincent	804	29.07	—.02	29.97	30.43	20	29.36	5	1.06	42.0	+2.1	75.4	15	52.8	10.2	31	31.7	65.2	35.3	13	6.0	29	75.2	34.0	1.15	—0.43	8,467	nw.	38	s.	8	10	9	13	9
Fort Totten	.....	28.34	.....	.....	.....	...	.....	...	.....	42.6	.....	85.8	18	55.9	12.0	31	32.2	73.8	43.3	18	6.0	29	71.9	32.9	0.92	.....	11,696	nw.	44	nw.	6	9	6	14	11
Pacific coast region.																																			
Cape Mendocino	637	29.35	+.04	30.04	30.23	31	29.62	12	0.62	54.2	.....	75.8	23	60.9	42.2	1	49.1	33.6	25.4	22	6.1	18	80.8	47.9	0.52	.....	12,964	n.	68	s.	12	4	2	12	17
Fort Canby	179	29.82	+.01	30.02	30.42	25	29.42	12	1.00	52.2	.....	67.0	16	57.1	42.0	14	46.8	25.0	16.4	12	4.2	19	88.4	48.8	6.24	.....	8,868	s.	56	s.	8	9	9	7	15
Los Angeles	371	29.60	—.01	30.00	30.19	27	29.71	1	0.48	62.3	0	89.1	22	74.3	42.9	7	51.2	46.2	36.6	7	3.0	12	71.8	51.1	0.39	—0.28	3,707	w.	24	nw.	2	2	2	4	25
Olympia	36	30.01	+.02	30.05	30.45	26	29.47	2	0.98	50.1	+1.7	66.5	17	58.8	34.5	3	43.7	32.0	27.5	17	5.0	18	83.3	45.0	4.30	—1.30	1,723	s.	19	s.	8	15	12	12	7
Portland	67	29.98	.00	30.05	30.42	26	29.45	12	0.97	51.2	—1.6	72.0	16	61.9	36.0	20	44.9	36.0	25.0	16	9.0	11	82.5	45.6	4.01	—0.94	3,211	s.	22	s.	11	17	12	11	8
Red Bluff	332	29.65	.00	30.01	30.24	21	29.72	9	0.53	62.1	+0.6	87.0	22	75.3	41.5	28	49.8	45.5	34.5	22	12.0	31	52.8	42.3	0.90	—0.61	3,920	n.	28	n.	13	3	0	5	22
Roseburg	.....	29.61	.....	.....	.....	...	.....	...	.....	51.0	+1.2	75.7	8	64.5	33.9	3	43.6	44.8	32.9	3	11.7	18	82.6	45.8	1.15	—2.07	1,302	nw.	...	.....	...	9	5	17	9
Sacramento	64	29.92	—.02	29.99	30.19	27	29.74	9	0.45	59.9	—0.4	80.5	8	72.1	42.0	3	49.6	38.5	31.0	11	3.5	13	71.2	49.8	2.01	+1.11	3,495	n.	20	sw.	12	4	1	4	26
San Diego	67	29.89	—.01	29.96	30.13	17	29.70	1	0.43	61.3	—1.3	87.0	22	68.8	47.0	6	54.3	40.0	35.0	22	4.2	12	77.3	53.5	0.35	—0.14	4,034	w.	22	e.	22	3	4	9	18
San Francisco	60	29.94	—.03	30.01	30.21	21	29.80	1	0.41	56.9	—2.2	75.5	8	64.0	50.0	...	52.5	25.5	21.0	8	5.0	19	84.5	52.6	2.55	—1.42	4,922	w.	26	w.	9	4	4	14	13
Northern slope.																																			
Fort Assinaboine	2,720	27.11	.00	30.04	30.54	21	29.69	1	0.85	46.4	+7.4	83.0	13	59.3	13.8	27	33.7	69.2	41.2	27	8.7	1	48.6	25.2	0.41	—0.29	9,647	w.	60	sw.	13	6	7	12	12
Cheyenne	6,105	24.07	+.07	30.11	30.48	16	29.69	1	0.79	47.0	+3.3	79.8	2	63.2	9.4	27	33.8	67.4	40.7	8	12.9	20	50.9	27.3	0.50	—0.30	7,473	nw.	42	w.	5	4	5	11	15
Deadwood	4,600	25.40	+.06	30.08	30.44	16	29.64	1	0.80	49.5	+7.8	76.0	14	60.1	26.0	27	39.5	50.0	32.5	8	8.0	7	54.0	31.8	1.48	—0.68	3,024	se.	23	ne.	6	7	2	12	16
Fort Benton	2,681	27.19	.....	30.09	30.49	16	29.70	1	0.80	46.4	+2.5	81.4	17	60.9	19.5	7	33.0	61.9	49.9	17	11.8	1	53.1	28.2	0.36	—0.89	6,894	sw.	40	sw.	31	4	9	11	8
Fort Custer	3,040	26.83	+.01	30.07	30.40	16	29.47	1	0.99	48.4	+3.2	84.1	18	64.6	20.3	27	34.7	63.8	40.1	9	9.4	20	64.8	35.2	0.66	—4.00	4,697	se.	36	nw.	31	6	6	14	11
Fort Maginnis	4,340	25.54	.....	30.08	30.48	16	29.74	1	0.74	43.0	.....	76.2	13	55.9	20.3	27	32.2	55.9	42.0	13	10.8	26	53.1	26.4	0.33	.....	9,229	ne.	46	nw.	28	6	6	13	12
Fort Shaw	3,550	26.33	.....	30.03	30.41	16	29.67	1	0.74	46.3	+7.1	78.0	17	59.1	21.5	20	34.9	58.5	45.5	17	6.5	2	51.3	27.0	0.39	—0.81	8,759	w.	46	w.	25	3	2	16	13
Helena	4,044	25.84	.00	30.08	30.50	16	29.53	1	0.97	47.0	+5.9	74.0	9	57.6	28.0	7	38.6	46.0	29.0	9	4.0	2	51.3	28.9	0.49	—0.97	4,631	w.	29	w.	25	4	3	15	13
Poplar River	2,030	27.81	.....	30.03	30.44	22	29.65	18	0.79	42.7	.....	83.0	18	59.2	11.1	23	28.9	71.9	50.1	23	4.7	1	77.4	35.2	0.46	.....	6,071	w.	35	w.	25	6	8	10	13
Spokane Falls	1,906	27.99	+.05	30.07	30.52	16	29.67	12	0.84	46.9	+3.0	70.5	8	57.2	26.0	7	37.9	44.5	33.8	8	9.0	11	72.6	37.7	1.82	—1.19	2,675	sw.	17	sw.	8	13	12	9	10
Middle slope																																			
Denver	5,294	24.79	+.06	30.05	30.43	16	29.60	1	0.83	55.5	+5.9	80.3	6	68.7	26.0	27	41.9	54.3	38.2	9	16.5	20	48.9	34.1	0.21	—0.58	4,140	s.	32	sw.	...	4	4	15	12
Dodge City	2,517	27.49	+.09	30.12	30.41	23	29.85	1	0.50	57.6	+2.6	83.2	17	69.9	29.5	30	47.7	53.7	33.1	30	9.9	3	71.2	46.8	1.50	+0.17	10,248	se.	48	se.	1	8	6	7	18
Fort Elliott	2,650	27.34	+.08	30.13	30.38	23	29.87	26	0.51	59.4	+2.5	87.0	5	71.2	33.5	30	49.9	53.5	38.0	9	8.0	25	74.1	49.9	5.45	+2.77	7,238	s.	31	s.	19	10	6	9	16
North Platte	2,841	27.12	+.04	30.08	30.40	23	29.68	2	0.72	54.6	+5.2	83.0	...	67.9	20.0	23	42.8	57.0	38.6	31	12.9	29	64.3	41.3	0.74	—0.65	7,307	s.	45	sw.	5	7	5	12	14
Pike's Peak	14,134	17.92	.....	30.20	30.56	16	29.90	26	0.66	24.4	+3.4	39.5	9	30.3	— 5.0	27	18.8	44.5	21.3	8	6.3	29	79.7	18.8	0.99	—0.54	10,614	sw.	68	w.	5	9	1	13	17
West Las Animas	3,899	26.07	+.09	30.00	30.32	16	29.61	1	0.71	56.0	+3.7	90.5	6	74.4	23.3	31	41.2	67.3	53.5	31	15.7	25	65.0	42.3	0.43	+0.05	5,256	s.	32	s.	2	6	6	12	13
Southern slope.																																			
Fort Concho	1,900	28.17	+.07	30.12	30.37	23	29.88	26	0.49	65.1	0	91.8	5	78.0	40.8	25	55.5	51.0	35.2	18	6.5	24	73.0	55.0	5.49	+2.85	5,679	s.	28	s.	1	6	7	12	12
Fort Davis	4,928	25.26	.....	30.10	30.29	16	29.91	1	0.38	59.6	—2.0	82.0	7	71.8	36.0	30	49.5	46.0	37.9	31	5.0	23	74.8	50.1	4.35	—2.34	4,512	ne.	20	ne.	8	6	10	13	8
Fort Sill	1,200	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	...	.....	.....	...	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	...	...	...	...	...	...	...	...
Fort Stockton	3,010	27.06	+.07	30.10	30.32	16	29.85	1	0.47	63.9	+0.4	87.8	5	75.7	40.3	28	54.7	47.5	28.8	18	3.9	24	74.8	54.3	6.25	+5.29	6,859	se.	36	se.	1	12	5	13	13
Northern plateau.																																			
Boisé City	2,750	27.23	.....	30.09	30.41	16	29.42	1	0.99	51.3	+3.7	77.4	12	62.2	29.8	7	41.5	47.6	34.4	12	11.8	1	60.2	36.4	1.52	+0.27	3,556	nw.	25	nw.	1	6	4	14	13
Dayton	1,667	28.31	.....	30.10	30.44	16	29.62	12	0.82	50.8	+3.4	73.7	12	62.3	28.8	7	40.4	44.9	32.8	23	11.7	1	68.2	39.7	3.45	+0.81	4,244	sw.	22	sw.	13	12	8	11	12
Lewiston	780	29.24	.....	30.09	30.58	15	29.57	12	1.01	50.4	+1.8	73.6	13	61.1	31.0	7	41.7	42.6	29.0	24	6.5	1	73.7	41.5	2.08	+0.15	1,149	ne.	25	nw.	9	16	6	12	13
Middle plateau.																																			
Salt Lake City	4,348	25.68	+.04	30.08	30.37	16	29.33	1	1.04	52.6	+2.0	79.5	17	62.6	31.7	27	43.4	47.8	31.5	5	7.7	7	52.4	34.4	0.36	—1.59	3,947	nw.	32	sw.	1	5	4	11	16
Carson City§	4,630	25.38	.....	.....	.....	...	.....	...	0.69	48.6	.....	77.0	16	.....	22.5	27	.....	54.5	.....	...	.....	...	62.0	.....	0.22	.....	1,722	sw.	12	.....	...	4	9	...	...
Southern plateau.																																			
Camp Thomas	2,710	27.24	.....	29.94	30.22	16	29.59	1	0.63	65.2	+7.1	89.5	5	78.1	33.1	28	52.4	56.4	41.7	5	9.2	22	59.7	49.0	0.69	+0.44	.....	s.	...	.....	...	4	2	15	14
El Paso	3,764	26.31	+.06	30.05	30.33	16	29.77	1	0.56	62.6	—1.2	84.6	5	76.2	37.1	29	54.3	47.5	33.9	29	7.0	24	71.1	51.9	5.15	+4.16	1,539	e.	19	w.	10	12	8	12	11
Fort Apache	5,050	25.04	+.02	29.94	30.16	16	29.60	1	0.57	56.9	+4.8	85.3	5	44.4	27.0	28	42.2	53.8	48.2	5	8.9	24	64.7	43.0	2.02	+0.17	4,813	ne.	26	s.	18	8	5	9	17
Fort Grant	4,856	25.24	.....	29.94	30.16	16	29.66	1	0.50	63.3	+1.9	85.5	5	73.4	43.0	28	55.1	42.5	26.9	30	8.2	10	54.4	44.8	3.06	+2.30	6,840	se.	36	se.	15	8	3	15	13
Prescott	5,389	24.75	+.03	29.95	30.21	16	29.52	1	0.69	53.5	+0.8	79.0	8	68.7	29.6	28	41.5	49.4	42.6	8	13.9	23	57.0	35.9	1.42	.....	4,174	s.	37	s.	1	4	1	11	19
Yuma	.....	.....	.....	.....	.....	...	.....	...	.....	68.0	—3.6	.....	...	.....	.....	...	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	...	...	.....	...	...	...	...	...
Rio Grande valley.																																			
Brownsville	59	29.97	+.03	30.03	30.21	16	29.89	2	0.32	73.5	—2.0	88.0	8	82.8	57.0	28	68.3	31.0	20.4	10	7.0	24	87.8	69.3	15.71	+12.4	3,934	n.	25	ne.	24	17	10	14	7
Rio Grande City	230	29.86	+.04	30.10	30.30	16	29.88	2	0.42	74.2	—0.1	93.7	7	84.1	57.0	28	67.0	36.0	26.5	10	6.0	25	78.0	65.9	4.45	+2.34	3,692	e.	28	e.,n.	28	12	7	11	13
Florida peninsula.																																			
Cedar Keys	22	30.05	+.02	30.07	30.32	24	29.87	9	0.44	74.3	+0.2	89.1	8	82.1	52.7	24	67.2	36.3	22.3	16	8.1	15	73.7	64.8	0.13	—4.00	7,285	ne.	26	ne.	15	2	0	7	24
Key West	20	29.96	—.01	29.98	30.16	25	29.78	14	0.38	78.3	—0.8	86.6	1	81.9	70.3	19	74.7	16.3	11.8	5	3.5	13	77.3	70.3	3.17	—1.93	10,614	ne.	28	ne.n.	15	15	3	19	9
Sanford	36	29.98	.....	30.02	30.26	20	29.84	9	0.42	74.4	.....	94.0	9	84.5	55.5	18	66.1	38.5	28.8	18	4.6	16	78.0	66.6	2.19	.....	6,198	ne.	64	n.	15	11	1	16	14

* Total movement of wind insufficient on account of frost-work.
† Observations taken at the Washburne Observatory, University of Wisconsin, made by voluntary observer.
‡ Observations taken at the Boswell Observatory by Professor G. D. Swezey, voluntary observer.
§ Observations taken by Chas. W. Friend, voluntary observer.

ATMOSPHERIC ELECTRICITY.

AURORAS.

No extensive auroral display was observed during the month. The display observed by the largest number of stations, occurred on the evening of the 1st; it was seen at scattering stations in New England; at Cape Henry, Virginia; Portsmouth, Ohio; Richmond, Kentucky; Vevay, Indiana, and Port Angeles, Washington Territory. The following descriptions relate to this display:

Bangor, Maine, 1st: at 8 p. m., an aurora was observed extending but a short distance above the northern horizon; at 11 p. m., the light had extended to the zenith; the display continued until daylight on the 2d, being very bright at 4 a. m.

Mount Washington, New Hampshire, 1st: an auroral light was visible from 9.30 p. m. until after midnight; the display consisted of pale streamers, without apparent motion, reaching nearly to the zenith, and covering 70° of the northern horizon.

Bethel, Connecticut, 1st: a faint auroral light was observed in the north during the evening.

Eastport, Maine, 1st: an aurora was visible from 10.40 p. m. until 4 a. m. of the 2d; waves of rose-tinted light shot upward nearly to the zenith.

Albany, New York, 1st: at 11.30 p. m., an aurora consisting of waves and flashes of hazy light, extended from azimuth 135° to 270°, and upward to the zenith. At 1 a. m. of the 2d, the display was obscured by clouds.

Cape Henry, Virginia, 1st: a very faint aurora was observed between 10 and 11 p. m.; it consisted of a whitish light 3° in width, and about 10° above the northern horizon. No beams or "merry dancers" were observed; the display disappeared about 11 p. m.