

Berlin," in N. 42° 40', W. 49° 30', saw a large iceberg; s. s. "Notting Hill," in N. 45°, W. 49°, encountered large fields of ice, steamed southward for twenty hours to avoid them; ship "Arbela," in N. 42°, W. 52° 30', passed small ice.

15th.—S. S. "Circassian," in N. 43° 56', W. 47° 15', saw five icebergs of medium size; bark "General Birch" was found fast in the ice in N. 45° 00', W. 48° 30'; bows stove, and vessel abandoned and full of water; ship "Sultan," in N. 42° 32', W. 49° 18', passed several icebergs and a quantity of field-ice; s. s. "Island," in N. 43° 25', W. 48° 23', passed a large number of icebergs and much field-ice; the s. s. "Iowa," in N. 44° 06' W. 47° 28', reported numerous icebergs in sight all day.

16th.—S. S. "Circassian," in N. 43° 05', W. 49° 00', saw two small icebergs and one large one; s. s. "Labrador," in N. 44° 29', W. 49° 11', passed an iceberg; the s. s. "Boston City," encountered an immense ice-field on the Banks; the bark "Diamant," from the 16th, in N. 46° 06', W. 46° 17' to the 19th in N. 43° 42', W. 49° 50', passed through large quantities of field-ice and saw numerous large icebergs.

17th.—S. S. "Circassian," in N. 43° 17', W. 49° 35', saw four large icebergs; s. s. "Abyssinia," in N. 42° 40', W. 49° 30', passed three large icebergs and several detached pieces; s. s. "Gellert," in N. 42° 50', W. 50° 13', passed a large iceberg; s. s. "Labrador," in N. 43° 12', W. 52° 46', passed four large icebergs; the bark "Olbers" reported: run into ice in N. 46° 41' W. 47° 00'; was obliged to tack ship and run ease to clear it; saw many icebergs, none of which were less than one hundred feet high, and some were seen twenty miles distant. We saw, in all, forty bergs, none of them smaller than the vessel. The last observed were in N. 44° 26', W. 48° 30'. The bark "Christel," in N. 47° 20', W. 46° 20', fell in with icebergs and field-ice; got clear on the 20th, in N. 44° 43', W. 50° 49'; during that time saw fourteen large icebergs; had considerable metal torn off by ice.

18th.—The s. s. "Rheola," at New York, reported: from N. 44°, W. 50° to N. 43°, W. 52° 30', passed through immense fields of ice, studded with numerous icebergs.

19th.—S. S. "Rotterdam," in N. 43° 47', W. 48° 02', sighted a large iceberg and two small pieces, distant about two miles; s. s. "City of Paris," in N. 42° 39', W. 49° 41', saw an iceberg about five miles to the northward; also in N. 42° 45', W. 49° 00', saw another about ten miles distant.

20th.—S. S. "Fulda," from N. 43° 58', W. 48° 00' to N. 43° 18', W. 50° 43', passed several icebergs and quantities of field-ice.

21st.—S. S. "Stella," in N. 41° 46', W. 49° 48', passed an iceberg about one hundred feet long and thirty feet high, distant about eight miles; s. s. "Critic," between N. 44° 30', W. 48° 30', and N. 43° 30', W. 51° 00', passed about twenty large icebergs and large quantities of field-ice.

22d.—S. S. "Hedwig," in N. 43° 45', W. 48° 12', passed a large iceberg about two hundred feet high; in N. 43° 13', W. 49° 23', passed five others; the s. s. "Lake Huron," at New York, reported: in N. 43° 20', W. 49° 50', passed a number of icebergs.

23d.—S. S. "Servia," in N. 42° 37', W. 49° 52', passed four icebergs.

24th.—The ship "Edward," in N. 45° 30', W. 48° 30', reported: reached an enormous field of ice; could not see open water from the royals, but discovered several icebergs, some very large; sailed along the eastern edge of the ice-field, which appeared to be very compact in s. and sw. direction; proceeded forty miles before getting into navigable water. On the following day, passed six icebergs and some small field-ice.

25th.—S. S. "California," in N. 43° 10', W. 50° 30', passed a large iceberg with flat top.

26th.—S. S. "Britannic," in N. 42° 51', W. 50° 36', passed three icebergs.

29th.—S. S. "Sardinian," in N. 44° 02', W. 51° 33', passed an iceberg.

30th.—S. S. "Alaska," in N. 42° 47', W. 50° 19', saw an iceberg to the northward.

- 31st.—S. S. "Weser," in N. 44° 58', W. 49° 36', passed several small icebergs and pieces of floating ice; s. s. "Canada," in N. 42° 15', W. 53° 00', saw an iceberg.

TEMPERATURE OF THE AIR.

[Expressed in degrees, Fahrenheit.]

The distribution of mean temperature over the United States and Canada, for the month of March, 1883, is exhibited on chart iii., by the dotted isothermal lines.

The mean temperature of the month is below the normal in all districts east of the one hundredth meridian, from 0°.6 in the Missouri valley to 6°.5 in the lower lake region. Along the Atlantic coast and in the Ohio valley, the temperature averaged about 4° below the normal; in the Gulf states, about 2°.6, and in Florida 1°.3. In the Rocky mountain regions and on the Pacific coast, the mean temperature is above the normal from less than 1° in the northern plateau to 2°.9 in southern California. On the summit of Mount Washington, New Hampshire, the mean temperature of the month is 11° below the normal, and on the summit of Pike's Peak, Colorado, it is 5°.5 above the normal.

The following are some of the extreme monthly mean temperatures reported from Signal-Service stations:—

Stations reporting highest.	Stations reporting lowest.
Key West, Florida..... 72.7	Mt. Washington, New Hampshire... 0.9
Rio Grande City, Texas..... 71.0	Saint Vincent, Minnesota..... 8.7
Laredo, Texas..... 68.6	Pike's Peak, Colorado..... 13.0
Brownsville, Texas..... 67.5	Moorhead, Minnesota..... 14.1
Yuma, Arizona..... 67.3	Escanaba, Michigan..... 17.4
Punta Rassa, Florida..... 67.1	Mackinaw City, Michigan..... 17.5
San Carlos, Arizona..... 66.3	Fort Stevenson, Dakota..... 17.8
Uvalde, Texas..... 64.6	Marquette, Michigan..... 17.9
Phoenix, Arizona..... 64.5	Alpena, Michigan..... 18.4

The following table has been prepared to show the districts of maximum departures from the normal temperature, with brief remarks upon the distribution of mean temperature for March of each year since 1874. The plus (+) and minus (—) signs denote above and below the normal, respectively:

Year.	Districts.	Departure.	Remarks.
1874	South Atlantic states.....	+ 2	Normal in lake region, New England, middle Atlantic states, and on the Pacific coast; below the normal in the upper Mississippi and Missouri valleys; above the normal in the south Atlantic and Gulf states.
	Upper Mississippi valley.....	- 3	
1875	Upper lakes.....	- 5.3	Below the normal everywhere, except on the Pacific coast and in the south Atlantic states.
	Lower lakes.....	- 5.1	
	Mississippi valley.....	- 5.2	
1876	Missouri valley.....	- 7.1	Below the normal in all districts, except on the Pacific coast.
	Pacific coast.....	+ 2.1	
	Minnesota.....	- 7.5	
1877	Lower Missouri valley.....	- 5.9	Above the normal on the Atlantic coast; normal in the Gulf states and lower Missouri valley; below the normal over the districts from the lake region westward to the Rocky mountains.
	Upper Mississippi valley.....	- 4.1	
	Minnesota.....	- 6.6	
1878	Upper Mississippi valley.....	- 3.3	Month very warm throughout the whole country; temperature above the normal everywhere; departures most marked from the Ohio valley and lake region westward to the Rocky mountains.
	New England.....	+ 3.4	
	Upper Missouri valley.....	+ 2.3	
1879	Missouri valley.....	+ 22.4	Above the normal over the entire country, except slightly below in the Saint Lawrence valley.
	Minnesota.....	+ 21.7	
	Upper Mississippi valley.....	+ 15.4	
1880	Lower Missouri valley.....	+ 14.6	Below the normal from the Missouri valley westward to the Pacific, and in Canada and New England; above the normal from the lakes to the Gulf, and in the middle and south Atlantic states.
	Upper lakes.....	+ 13.7	
	Middle slope.....	+ 7.1	
1881	Southern slope.....	+ 0.0	Normal in the lake region; above the normal in the Saint Lawrence valley and in New England, below the normal in other districts east of the Mississippi; above the normal on the middle and north Pacific coast.
	Western Gulf states.....	+ 5.1	
	Northern slope.....	- 7.3	
1882	Canadian maritime stations.....	- 5.9	Above the normal in all districts east of the Rocky mountains, and below the normal on the Pacific coast, except in Oregon and Washington Territory.
	Red river (of the north) valley.....	- 5.1	
	Florida.....	+ 4.3	
1883	South Atlantic states.....	+ 3.3	Above the normal in all districts east of the Rocky mountains, and below the normal on the Pacific coast, except in Oregon and Washington Territory.
	North Pacific coast.....	+ 4.0	
	Northern slope.....	+ 8.5	
1884	Saint Lawrence valley.....	+ 6.2	Above the normal in all districts east of the Rocky mountains, and below the normal on the Pacific coast, except in Oregon and Washington Territory.
	New England.....	+ 3.4	
	South Atlantic states.....	- 4.8	
1885	Tennessee.....	+ 5.3	Above the normal in all districts east of the Rocky mountains, and below the normal on the Pacific coast, except in Oregon and Washington Territory.
	North Pacific coast.....	+ 7.8	
	Ohio valley.....	+ 4.8	

In the first column of the following table is shown the mean

temperature of March in previous years for the several districts, as determined from observations made at the Signal Service stations; the second column shows the mean temperature of March, 1883, and the third column shows the departure of March, 1883, from the normal.

Average Temperatures for March, 1883.

Districts.	Average for March Signal Service observations.		Comparison of Mar., 1883, with the average for several years.
	For several years.	For 1883.	
New England.....	34.6	29.9	4.7 below.
Middle Atlantic states.....	41.3	37.9	3.4 below.
South Atlantic states.....	54.4	50.1	4.3 below.
Florida peninsula.....	66.7	65.4	1.3 below.
Eastern Gulf.....	58.0	55.5	2.5 below.
Western Gulf.....	59.9	57.7	2.2 below.
Rio Grande valley.....	67.0	66.1	0.9 below.
Tennessee.....	50.6	47.6	3.0 below.
Ohio valley.....	42.6	38.5	4.1 below.
Lower lakes.....	32.4	25.9	6.5 below.
Upper lakes.....	28.7	23.9	4.8 below.
Extreme northwest.....	20.6	18.2	2.4 below.
Upper Mississippi valley.....	36.9	33.3	3.6 below.
Missouri valley.....	33.9	33.3	0.6 below.
Northern slope.....	32.8	35.1	2.3 above.
Southern slope.....	57.6	54.1	3.5 below.
Northern plateau.....	40.7	41.1	0.4 above.
Middle plateau.....	40.1	46.5	6.4 above.
Southern plateau.....	52.9	55.4	2.5 above.
North Pacific.....	45.9	49.2	3.3 above.
Middle Pacific.....	54.0	56.1	2.1 above.
South Pacific.....	57.5	60.4	2.9 above.
Mount Washington, N. H.....	11.9	0.9	11.0 below.
Pike's Peak, Colo.....	7.5	13.0	5.5 above.
Denver, Colo.....	39.5	43.8	4.3 above.

DEVIATIONS FROM MEAN TEMPERATURE.

The departures exhibited by the reports from the regular Signal-Service stations are shown in the table of comparative temperatures.

The Chief Signal Officer is indebted to voluntary observers for the following notes upon this subject. As some of these comparisons are made with the averages determined from records covering periods extending back many years before the establishment of the Signal Service they will be found of special interest.

Connecticut.—Southington: mean temperature, 27°.6, is the lowest March mean of the last twenty-seven years, with the exception of that of March, 1872.

Illinois.—Anna: mean temperature 42°.49, or 9°.57 below the March average of the last seven years. Riley: mean temperature 26°.6, or 3°.4 below the March average of the last twenty-two years. Swanwick: mean temperature 38°.7, or 7°.3 below the March average. Morrison: mean temperature 30°.0, is 4°.1 below the March average of last nine years.

Indiana.—Logansport: mean temperature, 34°.5, is 5°.7 below the March average of the last twenty-four years. The highest March mean of that period, 49°.5, occurred in 1860; lower March means occurred in 1867, '72 and '77. The greatest March extremes for the same period occurred in 1875, the maximum being 84°, and the minimum -10°. A comparison of the five winter months (November to March inclusive) of 1882-3, with the corresponding months since the winter of 1859-60, shows the mean temperature of the past winter, 30°.5, to be 1° below the average. The highest winter mean, 40°.1, was that of 1881-2; the lowest, 23°.5, was that of 1871-2. Wabash: mean temperature 34°.8, or 3°.41 below the March average of six years.

Kansas.—Professor F. H. Snow, of the State University at Lawrence, reports: mean temperature 40°.9, or 0°.9 below the March average of the fifteen preceding years. The highest March mean of that period, 50°.9, occurred in 1868 and 1878; the lowest, 34°.2, occurred in 1876. The March extremes for the same period are: highest, 93° in 1868; lowest, -1° in 1869. Wellington: mean temperature 39°.0, or 5°.9 below March average of four years, and is the lowest for the same

period. Yates Centre: mean temperature 39°.0, or 1°.8 below the average of three years.

Maine.—Gardiner: mean temperature 23°.0, or 6°.65 below the March mean of forty-seven years, and with the exception of March, 1872, (mean 21°.99), it is the lowest for that period. The mean temperature of the past winter, 18°.76, is 3°.87 below the winter average of forty-seven years, and it has been the coldest winter recorded during that time.

Maryland.—Fallston: mean temperature, 34°.3, is 4°.4 below the March average of the last thirteen years. The highest March mean of that period, 46°.2, occurred in 1871; the lowest, 32°.9, occurred in 1872. The maximum temperature of March, 1883, (63°), has been exceeded in every year during March since 1865.

Sandy Springs: mean temperature, 34°.3, is 5°.3 below the March average of the last fifteen years, and is the lowest March mean of that period.

Massachusetts.—Westborough: mean temperature 26°.9, or 8° below the March average of seven years.

The following table, prepared by Mr. J. Brainerd Hall, of Worcester, shows the mean temperature of the winter months at that place since 1839:

	Winter.	November.	December.	January.	February.	March.	Mean.
1839-40.....	37.6	30.2	18.6	32.5	36.7	31.5	31.5
1840-41.....	35.6	27.3	32.5	24.8	33.2	30.6	30.6
1841-42.....	37.7	31.3	30.3	33.9	37.1	34.1	34.1
1842-43.....	34.5	25.6	32.9	20.3	25.8	28.2	28.2
1843-44.....	39.3	29.8	18.0	27.6	35.9	29.6	29.6
1844-45.....	38.4	29.6	28.1	27.0	37.4	32.5	32.5
1845-46.....	40.9	30.3	28.6	21.7	38.8	32.1	32.1
1846-47.....	43.1	26.5	26.6	25.1	31.8	31.0	31.0
1847-48.....	44.6	35.4	29.4	27.1	33.7	34.0	34.0
1848-49.....	34.4	32.0	20.9	18.1	34.3	27.9	27.9
1849-50.....	46.7	27.3	24.0	30.0	34.0	32.4	32.4
1850-51.....	41.7	24.5	26.0	29.5	36.0	31.5	31.5
1851-52.....	36.6	21.8	20.1	25.6	31.5	25.1	25.1
1852-53.....	40.2	34.2	25.7	28.3	35.6	32.8	32.8
1853-54.....	40.3	27.0	23.0	22.6	32.3	29.0	29.0
1854-55.....	39.3	24.8	27.5	18.5	32.4	28.5	28.5
1855-56.....	39.5	29.4	16.7	20.4	22.9	25.7	25.7
1856-57.....	39.1	25.6	16.9	32.4	32.1	29.2	29.2
1857-58.....	40.4	31.3	31.3	22.6	32.6	31.8	31.8
1858-59.....	35.0	28.3	26.6	29.0	39.0	31.6	31.6
1859-60.....	41.0	24.3	27.3	25.6	37.6	31.2	31.2
1860-61.....	42.6	26.0	22.6	32.6	33.6	31.4	31.4
1861-62.....	43.3	32.6	24.6	24.0	33.0	31.5	31.5
1862-63.....	41.6	31.6	31.0	29.0	28.3	32.4	32.4
1863-64.....	43.0	28.3	25.6	27.3	39.0	32.6	32.6
1864-65.....	41.3	27.3	19.3	27.3	37.0	30.4	30.4
1865-66.....	42.3	32.3	24.0	27.6	32.3	31.7	31.7
1866-67.....	43.3	28.0	18.6	31.3	39.0	30.2	30.2
1867-68.....	38.0	22.3	20.6	19.3	33.3	26.7	26.7
1868-69.....	37.3	22.0	28.3	27.6	28.3	28.8	28.8
1869-70.....	39.0	29.6	31.0	24.3	29.0	30.6	30.6
1870-71.....	40.3	29.0	23.0	26.0	40.3	31.7	31.7
1871-72.....	36.9	25.9	26.3	23.9	26.0	28.0	28.0
1872-73.....	40.5	21.6	21.1	20.6	29.5	26.7	26.7
1873-74.....	24.6	29.4	28.5	24.9	32.7	28.0	28.0
1874-75.....	33.8	29.7	18.0	19.4	27.9	25.7	25.7
1875-76.....	32.6	27.6	29.7	27.5	30.9	29.7	29.7
1876-77.....	41.1	21.3	25.3	31.2	32.7	30.5	30.5
1877-78.....	42.7	38.0	25.5	29.2	39.3	32.9	32.9
1878-79.....	38.2	28.1	21.8	22.2	23.4	26.5	26.5
1879-80.....	38.9	31.4	34.9	27.6	33.0	35.2	35.2
1880-81.....	36.0	23.7	22.5	24.9	35.5	28.5	28.5
1881-82.....	38.9	34.5	22.9	27.1	33.1	31.3	31.3
1882-83.....	37.4	25.0	20.0	23.5	25.0	24.2	24.2
Means.....	39.0	28.3	24.9	23.6	32.3	29.6	29.6

The following extract is also taken from the report furnished by Mr. Hall:

While the winter of 1882-3 is the coldest, as a whole, of which we have a record, still the minimum temperature was but -3°. There are many instances in the past when it has been -10° and -12°, while in February, 1861, it was -18°.5; yet the average temperature for the winter of 1860-61 was 31°.2, which is 1°.6 above the average winter temperature, and 7° above the average of the winter of 1882-3.

Michigan.—Lansing: mean temperature, 28°.0, is 5°.45 below the average of nineteen years.

Thornville: mean temperature 25°.9, or 7° below the March normal.

New Hampshire.—Grafton: mean temperature, 18°.7, is 10°.7 below the March average of 1878, 1879, and 1880.

New Jersey.—South Orange: mean temperature, 32°.1, is 4°.3 below the March average of thirteen years, and is the lowest March mean of that period with the exception of that of 1872, when it was 28°.77.

New York.—Palermo: mean temperature 19°.4, or 8.7 below the March average of the last thirty years. The highest March mean of that period, 38°.5, occurred in 1871; the lowest is that for March 1883.

North Volney: mean temperature 22°.2, or 6°.36 below the March average of sixteen years. The highest March mean of that period, 37°.39, occurred in 1878; the lowest 21°.15 occurred in 1872.

Pennsylvania.—Dyberry: mean temperature, 23°.95, is 5°.4 below the March average of nineteen years. The highest

March mean of that period, 37°.5, occurred in 1878; the lowest, 22°.4, occurred in 1872. The March extremes of the last nineteen years are: maximum 72° in 1865; minima, -19° in 1873 and -22° in 1868.

Wellsboro': mean temperature, 25°.3, is 5°.9 below the March average of last ten years, and is the lowest for that period.

Texas.—New Ulm: mean temperature, 62°.4, is 1°.3 below the March normal of the last eleven years. The highest March mean of that period, 68°.4, occurred in 1878; the lowest 59°.7 occurred in 1875. The March extremes of the last eleven

Table of Comparative Minimum Temperatures for the Month of March.

State or Territory.	Minimum for March, 1883, Signal Service.		Lowest since Signal-Service stations were opened—3 to 12 years.			Lowest from any other source.			
	Station.	Temp.	Station.	Temp.	Year.	Place.	Temp.	Year.	Length of Record.
Alabama	Montgomery	35	Mobile	25	1873	Huntsville	11		9 years
Do						Thomas Barracks	18	'76, '78	3 "
Arizona	Fort Apache	27	Prescott	8	1876	Fort Canby (old)	1		12 "
Do						Fort Apache	5	1875	8 "
Arkansas	Little Rock	24	Little Rock	32	'80, '81	Fort Smith	3	1840?	22 "
Do						Durham	2	1876	1 "
California	Cape Mendocino	38	Campo	15	1882	Camp Bidwell	0		19 "
Do						Fort Crook	2		12 "
Colorado	Pike's Peak	-3	Denver	-10	1880	Fort Lyon	-7		23 "
Do	West Las Animas	10	Pike's Peak	-29	1875	Pagosa Springs	-20	1881	2 "
Connecticut	New Haven	3	New Haven	6	'75, '76	Colebrook	-10		12 "
Do						New Haven	-9		86 "
Dakota	Tobacco Garden	-18	Pembina	-40	1873	Fort Abercrombie	-40	'61, '69?	19 "
Do						Fort Buford	-40	1867	14 "
Delaware	Delaware Breakwater	19	Delaware Breakwater	25	1880	Fort Delaware	5		45 "
Dist. of Columbia	Washington	14	Washington	4	1873	Washington	-5		49 "
Florida	Jacksonville	40	Jacksonville	31	'73, '76	Fort Barrancas	28		59 "
Do						Fort King	27		10 "
Georgia	Atlanta	26	Angusta	22	1873	Fort McPherson	9	1877	7 "
Do						Atlanta	-12		6 "
Idaho	Eagle Rock	0	Eagle Rock	-16	1882	Fort Hall	-1		5 "
Do						Fort Lapwai	1		19 "
Illinois	Chicago	10	Chicago	10	1873	Rock Island Arsenal	-14		11 "
Do						Belvidere	-20	1877	5 "
Indiana	Indianapolis	12	Indianapolis	2	1873	Spiceland	0		14 "
Do						Kokomo	-10	1875	1 "
Indian Territory	Fort Reno	14	Fort Gibson	7	1876	Fort Gibson	7		48 "
Do						Camp Supply	-2	1876	2 "
Iowa	Davenport	3	Dubuque	-10	1875	Algona	-25		10 "
Do						Vale	-20	1880	7 "
Kansas	Leavenworth	14	Dodge City	-8	1880	Fort Riley	-20		21 "
Do						Fort Leavenworth	-9		52 "
Kentucky	Louisville	20	Louisville	3	1873	Newport Barracks	3		29 "
Louisiana	Shreveport	35	Shreveport	26	1876	Fort Jesup	16		23 "
Do						Baton Rouge	26		58 "
Maine	Eastport	-4	Eastport	-1	'75, '80	Gardiner	-20		43 "
Do						Brunswick	-19		53 "
Maryland	Baltimore	16	Baltimore	5	1873	Fort McHenry	0		53 "
Massachusetts	Provincetown	7	Springfield	-1.5	1875	Williamstown	-12		63 "
Do						Billerica	-14	1875	11 "
Michigan	Escanaba	-15	Escanaba	-20	1875	Fort Brady	-32	1875	60 "
Do						Ontonagon	-22		11 "
Minnesota	Saint Paul	-8	Breckenridge	-32	1873	Fort Ripley	-37		18 "
Do						Fort Snelling	-24		63 "
Mississippi	Starkville	28	Vicksburg	27	1876	Columbus	20		10 "
Missouri	Saint Louis	19	Saint Louis	8	'73, '76	Harrisonville	-12		6 "
Do						Saint Louis	-6		39 "
Montana	Glendive	-4	Fort Benton	-42	1876	Fort Ellis	-36		14 "
Do						Fort Benton	-42	1876	12 "
Nebraska	Omaha	3	North Platte	-21	1880	Glendale	-20	1868	2 "
Do						Bellevue	-15		11 "
Nevada	Pioche	26	Winnemucca	-3	1882	Camp Halleck	-8	1880	13 "
New Hampshire	Mount Washington	-34	Mount Washington	-31	1874	Dartmouth College	-23		18 "
Do						Stratford	-22		11 "
New Jersey	Sandy Hook	10	Cape May	9	1873	Paterson	0		9 "
Do						Newark	2		18 "
New Mexico	Fort Bayard	31	Squan Beach	9	1875	Fort Union	-12	'80, '82	32 "
New York	Buffalo	2	Santa Fe	0	1880	Madison Barracks	-30		57 "
Do			Albany	-4	1875	Sackett's Harbor	-34		8 "
North Carolina	Charlotte	26	Wilmington	20	1873	Franklin	6	1876	5 "
Do						Fort Johnson	14		58 "
Ohio	Cleveland	6	Cleveland	-2	1873	Granville	-14		10 "
Do			Toledo	-1	1873				
Oregon	Umatilla	31	Umatilla	11.5	1880	Camp Harney	-3		6 "
Do						Fort Klamath	-10	1882	7 "
Pennsylvania	Erie	2	Erie	2	1877	Pennsville (near)	-14		6 "
Do			Pittsburg	2	'73, '77	Philadelphia	5		123 "
Rhode Island	Narragansett Pier	5	Newport	9	1876	Fort Adams	-6		41 "
South Carolina	Charleston	39	Charleston	25	1873	Fort Moultrie	25		38 "
Do						Charleston	31		105 "
Tennessee	Knoxville	24	Knoxville	6	1873	Glenwood Cottage	11		11 "
Do						Humboldt	-5?	1876	11 "
Texas	Fort Elliott	17	Fort Elliott	-2	1880	Fort Davis	9		23 "
Do						Fort Elliott	1	1880	2 "
Utah	Salt Lake City	30	Salt Lake City	-4	1874	Fort Crittenden	-2		3 "
Vermont	Burlington		Burlington	-4	1873	Randolph	-27		5 "
Do						Lunenburg	-23		18 "
Virginia	Cape Henry	12?	Wytheville	-1	1873	Fortress Monroe	13		58 "
Do	Chincoteague	17	Lynchburg	6	1873	Snowville	9		6 "
Washington	Spokane Falls	5	Spokane Falls	7	1882	Fort Colville	-20		20 "
West Virginia	Morgantown	14	Morgantown	0.5	1873	Weston	2	1876	3 "
Do						Helvetia	4	1877	5 "
Wisconsin	Madison	1	La Crosse	-23	1873	Superior City	-24		3 "
Do						Fort Crawford	-23		26 "
Wyoming	Fort Washakie	-10	Cheyenne	-17	1880	Fort Bridger	-29		20 "
Do						Fort Sanders	-28	1875	4 "

Table of Maximum and Minimum Temperatures for March, 1883.

State or Territory.	Signal Service.			U. S. Army Post Surgeons, or Voluntary Observers.		
	Station.	Max.	Min.	Station.	Max.	Min.
Alabama.....	Mobile.....	80	44	Auburn.....	77	32
Do.....	Montgomery.....	79	35	Mount Vernon Barracks.....	82	35
Arizona.....	Phoenix.....	92	38	Texas Hill.....	95	54
Do.....	Fort Apache.....	75	27	Mount Ida.....	76	22
Arkansas.....	Fort Smith.....	82	28	Borden.....	98	32
Do.....	Little Rock.....	76	24	Cisco.....	64	25
California.....	Los Angeles.....	84	43	Fort Lyon.....	75	13
Do.....	Cape Mendocino.....	69	38	Colorado Springs.....	68	0
Colorado.....	West Las Animas.....	74	10	Southington.....	57	0
Do.....	Pike's Peak.....	29	3	Morrison.....	77	0
Connecticut.....	New Haven.....	58	3	Fort Pembina.....	40	-33
Dakota.....	Fort Sully.....	76	2	Receiving Reserv'r.....	74	16
Do.....	Tobacco Garden.....	-18	-12	Mayport.....	85	40
Delaware.....	Fort Stevenson.....	44	-12	Fort Barrancas.....	77	34
District of Columbia.....	Del. Breakwater.....	60	19	Forsyth.....	78	33
Florida.....	Washington.....	70	14	Bunker Hill.....	77	16
Do.....	Sanford.....	85	48	Riley.....	58	3
Do.....	Key West.....	86	60	Polo.....	52	3
Georgia.....	Jacksonville.....	79	40	Vincennes.....	77	20
Do.....	Savannah.....	50	40	Miami.....	70	-3
Idaho.....	Atlanta.....	75	20	Logan.....	72	7
Do.....	Fort Lapwai.....	73	23	Cresco.....	46	-13
Illinois.....	Eagle Rock.....	62	0	Clay Centre.....	80	10
Do.....	Springfield.....	73	14	Topeka.....	74	9
Do.....	Chicago.....	62	10	Bowling Green.....	71	21
Indiana.....	Indianapolis.....	68	12	Frankfort.....	68	16
Do.....	Fort Reno.....	82	14	Point Pleasant.....	80	37
Indian Territory.....	Keokuk.....	68	11	Dexter.....	52	-20
Iowa.....	Davenport.....	63	3	Sandy Springs.....	71	10
Do.....	Leavenworth.....	71	14	McDonough.....	65	9
Kansas.....	Louisville.....	71	20	Somerset.....	60	-3
Do.....	Shreveport.....	81	35	Heath.....	54	8
Kentucky.....	Portland.....	52	0.5	Lansing.....	59	4
Do.....	Eastport.....	45	4	Fort Brady.....	44	-26
Louisiana.....	Baltimore.....	65	16	Fort Snelling.....	53	-30
Do.....	Boston.....	58	8	Fayette.....	78	37
Massachusetts.....	Provincetown.....	58	7	Protom.....	81	23
Do.....	Detroit.....	58	3	Corning.....	68	10
Michigan.....	Esanaba.....	52	-15	Utica.....	76	4
Do.....	Saint Paul.....	52	8	Fort Niobrara.....	75	2
Minnesota.....	Vicksburg.....	79	35	Goconda.....	83	23
Mississippi.....	Starkville.....	79	28	Boca.....	78	12
Do.....	Saint Louis.....	78	19	Bristol.....	40	10
Missouri.....	Cartersville.....	79	3	Moorestown.....	64	10
Do.....	Glendale.....	70	-4	Somersville.....	61	4
Montana.....	North Platte.....	71	12	Fort Union.....	71	10
Nebraska.....	Omaha.....	71	3	Factoryville.....	63	0
Nevada.....	Pioche.....	95	20	Johnstown.....	54	-13
Do.....	Mt. Washington.....	35	-34	Weldon.....	74	22
New Hampshire.....	Sandy Hook.....	62	10	Ore Knob.....	62	10
New Jersey.....	Barnegat City.....	62	12	Westerville.....	68	4
Do.....	Fort Bayard.....	82	31	Eola.....	70	30
New Mexico.....	Santa Fé.....	86	24	Dyberry.....	51	-15
Do.....	New York City.....	60	10	Stateburg.....	75	34
New York.....	Buffalo.....	50	2	Ashwood.....	70	25
North Carolina.....	Kittyhawk.....	77	27	Murfreesborough.....	69	23
Do.....	Charlotte.....	74	20	Terrace.....	82	25
Ohio.....	Sandusky.....	69	10	Kelton.....	72	20
Do.....	Cleveland.....	65	6	Woodstock.....	52	-26
Oregon.....	Umatilla.....	70	31	Acetotink.....	74	16
Pennsylvania.....	Pittsburg.....	69	11	Variety Mills.....	72	12
Do.....	Erie.....	50	2	Helvetia.....	66	8
Rhode Island.....	Narragansett Pier.....	56	5	Franklin.....	50	-17
South Carolina.....	Charleston.....	74	36	Belcit.....	57	5
Tennessee.....	Chattanooga.....	76	28			
Do.....	Knoxville.....	70	24			
Texas.....	Laredo.....	95	40			
Do.....	Fort Elliott.....	78	17			
Utah.....	Salt Lake City.....	66	30			
Do.....						
Vermont.....						
Virginia.....	Cape Henry.....	73	12?			
Do.....	Chincoteague.....	63	17			
Washington.....	Dayton.....	72	30			
Do.....	Spokane Falls.....	67	5			
West Virginia.....	Morgantown.....	65	14			
Wisconsin.....	Madison.....	53	1			
Do.....						
Wyoming.....	Fort Washakie.....	67	-10			

Virginia.—Wytheville: mean temperature, 38° 5, is 4° 3 below the average of a period of nineteen years.

Variety Mills: mean temperature, 39° 8, is 6° 2 below the average of the last six years, and the lowest for the same period. The highest March mean temperature, 51° 6, occurred in 1878.

West Virginia.—Helvetia: mean temperature, 35° 9, is 4° 8 below the March average of the last seven years.

RANGES OF TEMPERATURE AT SIGNAL-SERVICE STATIONS.

The monthly ranges of temperature over the entire country have varied from 23° at San Diego, California, and 26° at Punta Rassa, Florida, to 77° at Fort Washakie, Wyoming, and 78° at Huron, Dakota.

The smallest monthly ranges are: San Diego, California, 23°; Punta Rassa, Florida, 26°; Key West, Florida, 27°; Port Eads, Louisiana, 28°; San Francisco, California, 29°; Cedar Keys, Florida, 29°; Cape Mendocino, California, 31°; Pike's Peak, Colorado, 32°; Olympia, Washington Territory, 34°; Hatteras, Macon, and Portsmouth, North Carolina, 35°; Indianola and Galveston, Texas, 36°; New Orleans, Louisiana, 36°; Sacramento, California, 36°; Salt Lake City, Utah, 36°; Pensacola, Florida, 37°; Sanford, Florida, 38°; Charleston, South Carolina, 38°; Jacksonville, Florida, 39°; Fort Grant and Yuma, Arizona, 39°. The largest are: Huron, Dakota, 78°; Fort Washakie, Wyoming, 77°; Saint Vincent, Minnesota, 73°; Fort Bennett, Dakota, 73°; Mount Washington, New Hampshire, 69°; Omaha, Nebraska, 68°; Fort Keogh, Montana, 67°; Escanaba, Michigan, 67°; Fort Shaw, Montana, 66°; Moorhead, Minnesota, 66°; Yankton, Dakota, 66°; Duluth, Minnesota, 65°; Bismarck, Dakota, 65°.

The greatest daily ranges of temperature have varied in the different districts as follows:

New England.—From 26° at Provincetown, Massachusetts, on the 6th, to 39° on the summit of Mount Washington, New Hampshire, on the 6th.

Middle Atlantic states.—From 25° at Cape May, New Jersey, on the 20th, to 34° at Philadelphia, Pennsylvania, on the 20th, Washington, District of Columbia, and Cape Henry, Virginia, on the 15th.

South Atlantic states.—From 23° at Savannah, Georgia, on the 4th and 23d, to 36° at Augusta, Georgia, on the 4th.

Florida peninsula.—From 16° at Key West, on the 14th, to 26° at Sanford, on the 28th.

Eastern Gulf.—From 23° at New Orleans, Louisiana, on the 5th and 23d, to 36° at Starkville, Mississippi, on the 19th.

Western Gulf.—From 20° at Indianola, Texas, on the 20th, and at Port Eads, Louisiana, on the 28th, to 40° at Fort Smith, Arkansas, on the 18th.

Rio Grande valley.—From 30° at Brownsville, Texas, on the 25th, to 42° at Eagle Pass, Texas, on the 21st.

Ohio valley and Tennessee.—From 31° at Chattanooga, Tennessee, on the 13th, and at Memphis, Tennessee, on the 19th and 20th, to 38° at Columbus, Ohio, on the 18th, and 49° at Champaign, Illinois, on the 18th.

Lower lakes.—From 31° at Buffalo, New York, on the 9th, to 48° at Sandusky, Ohio, on the 18th.

Upper lakes.—From 30° at Port Huron, Michigan, on the 9th, to 47° at Escanaba, Michigan, on the 1st.

Extreme northwest.—From 44° at Bismarck, Dakota, on the 17th, to 54° at Saint Vincent, Minnesota, on the 17th.

Upper Mississippi valley.—From 34° at Dubuque, Iowa, on the 17th, to 50° at Springfield, Illinois, on the 18th.

Missouri valley.—From 37° at Yankton, Dakota, on the 8th, to 50° at Omaha, Nebraska, on the 18th.

Northern slope.—From 37° at Helena, Montana, on the 24th to 48° at Fort Benton, Montana, on the 7th.

Middle slope.—From 17° on the summit of Pike's Peak, Colorado, on the 18th, to 54° at Fort Elliott, Texas, on the 18th.

Southern slope.—From 35° at Henrietta and Jacksboro', Texas, on the 18th, to 44° at Fort Stockton, Texas on the 27th.

Southern plateau.—From 29° at Santa Fé, New Mexico, on the 9th, to 45° at Fort Apache, Arizona, on the 26th.

years are: maximum, 96° in 1874; minimum, 30° in 1873, '75, and '80.

Vermont.—Woodstock: mean temperature, 18° 14, is 7° 48 below the March average of the last sixteen years. The highest March mean of the period, 33° 34, occurred in 1871; the lowest, 16° 8, occurred in 1872. The March extremes of the last sixteen years are: maximum, 63° in 1878; minimum —28° in 1869.

Charlotte: mean temperature 20°, or about 10° below the average of March from 1870 to 1881, inclusive.

Middle plateau.—From 25° at Salt Lake City, on the 17th, to 32° at Pioche, Nevada, on the 19th.

Northern plateau.—From 32° at Lewiston, Idaho, on the 17th, and at Dayton, Washington Territory, on the 22d, to 37° at Eagle Rock, Idaho, on the 3d and 23d, and at Fort Missoula, Montana, on the 17th.

North Pacific.—From 31° at Olympia, Washington Territory, on the 12th and 20th, to 42° at Roseburg, Oregon, on the 21st.

Middle Pacific.—From 20° at San Francisco, California, on the 1st, to 36° at Red Bluff, California, on the 3d.

South Pacific.—From 18° at San Diego, California, on the 1st, to 37° at Visalia, California, on the 1st.

The following are reports of remarkably sudden changes in temperature:—

Fallston, Maryland, 7th.—The temperature fell 28° from 2 to 7 p. m. on this date.

Quincy, Illinois, 18th.—The temperature fell from 70° at 3 p. m. to 30° at 6 p. m., a change of 40° in three hours.

Lincoln, Illinois, 18th.—A very remarkable change in temperature occurred here during the afternoon of this date.

Swanwick, Illinois, 18th.—The temperature fell from 73° at 2 p. m. to 31° at 9 p. m., a fall of 42° in seven hours, and at 7 a. m. of the 19th it had fallen to 21° giving a range of 52° for seventeen hours.

Mattoon, Illinois, 18th.—At 3 p. m. the temperature was 75° and at 6 p. m. 29°, a fall of 46° in three hours. This sudden change occurred during the prevalence of a strong north wind.

Springfield, Illinois, 18th.—The temperature fell 38° between 3.30 and 4 p. m., and during the seven hours ending at 10 p. m. it fell 50°.5, from 73° to 22°.5.

Logansport, Indiana.—From 1.30 p. m. of the 18th to 6 a. m. of the 19th, sixteen and one-half hours, the temperature fell 53°.

Saint Louis, Missouri, 18th.—The temperature fell from 78° at noon to 29° at 10.07 p. m., being a fall of 49°.

Green Springs, Alabama, 19th.—At 2 p. m. of this date, the thermometer read 77°, and during the succeeding fifteen hours the temperature fell 47°.

Huron, Dakota.—The maximum temperature of the 17th was 70°.5; minimum of the 18th,—7°.8.

Ithaca, New York, 18th.—Temperature fell from 63° at 2 p. m., to 31° at 9 p. m.

North Lewisburg, Ohio, 18th.—Temperature fell 25° in less than one hour.

FROSTS.

In the various districts they were reported on the following dates:—

New England.—1st to 31st.

Middle Atlantic states.—1st to 31st.

South Atlantic states.—1st to 4th, 8th to 13th, 16th to 27th.

Florida peninsula.—1st, 2d, 3d, 13th, 14th, 20th.

Eastern Gulf.—1st, 2d, 4th, 10th to 13th, 20th, 23d, 27th, 28th.

Western Gulf.—1st, 3d, 4th, 7th, 8th, 9th, 11th, 12th, 13th, 16th to 20th, 22d, 27th.

Rio Grande valley.—9th, 20th.

Ohio valley.—1st, 3d to 12th, 14th, 16th, 17th 19th to 24th, 30th, 31st.

Tennessee.—1st to 4th, 7th to 14th, 16th to 22d, 24th, 27th.

Lower lakes.—1st to 31st.

Upper lakes.—1st to 31st.

Extreme northwest.—1st to 31st.

Upper Mississippi valley.—1st to 31st.

Missouri valley.—1st to 4th, 6th to 13th, 15th, 16th, 17th, 20th, 22d, 23d, 27th, 29th, 30th.

Northern slope.—1st to 31st.

Middle slope.—1st to 5th, 7th to 12th, 15th, 16th, 18th, 20th to 31st.

Southern slope.—7th, 8th, 16th, 19th, 20th.

Southern plateau.—1st to 20th, 23d, 25th, 30th, 31st.

Middle plateau.—1st to 21st, 24th, 29th, 30th, 31st.

Northern plateau.—1st to 18th, 26th, 27th, 31st.

North Pacific.—3d, 4th, 6th, 13th.

Frosts occurred at Sacramento, California, 10th, 16th, 19th, 31st.

The following instances of injury to vegetation by frosts have been reported:

Augusta, Georgia, 18th.—The farmers in this vicinity report that the recent frosts have done great injury to fruit-trees and garden vegetables.

Knoxville, Tennessee, 22d.—The snow storm of the night of the 21st and the freeze of this date are reported to have been injurious to the fruit-trees in this locality.

Grand Haven, Michigan, 19th.—It is feared that the peach-trees throughout this section have been killed by the recent cold weather.

At Charlotte, North Carolina, damaging frosts occurred on the 25th, 26th and 27th.

ICE.

The subject of the formation of ice in the northern sections is considered elsewhere in the REVIEW under the heading "Ice in Rivers and Harbors." The following instances of its formation in the southern states, have been reported:

Alabama.—Auburn, 12th, 16th, 19th.

Florida.—Jacksonville, 13th.

Georgia.—Atlanta, 12th, 13th, 16th, 20th; Augusta, 13th; Forsyth, 12th, 13th, 16th, 22d, 23d.

North Carolina.—Wilmington, 23d.

South Carolina.—Stateburg, 12th, 13th.

Texas.—Fort Concho, 19th.

PRECIPITATION.

[Expressed in inches.]

The distribution of rainfall over the United States and Canada, as determined from observations taken at more than five hundred stations, is exhibited on chart iv.

In the first column of the following table is given the average March rainfall in the various districts for several years; in the second column is given the average for March, 1883; and the third column shows the excess or deficiency of March, 1883, as compared with the average of previous years:

Average precipitation for March, 1883.

Districts.	Average for March. Signal-Service observations.		Comparison of Mar., 1883, with the average for several years.
	For several years.	For 1883.	
	Inches.	Inches.	Inches.
New England.....	5.19	2.57	2.62 deficiency.
Middle Atlantic states.....	4.42	2.91	1.51 deficiency.
South Atlantic states.....	5.19	5.58	0.39 excess.
Florida peninsula.....	2.75	4.10	1.35 excess.
Eastern Gulf.....	5.04	3.99	1.05 deficiency.
Western Gulf.....	3.65	4.24	0.59 excess.
Rio Grande valley.....	1.18	2.88	1.70 excess.
Tennessee.....	5.98	4.33	1.65 deficiency.
Ohio valley.....	3.98	3.12	0.86 deficiency.
Lower lakes.....	2.95	1.60	1.35 deficiency.
Upper lakes.....	2.57	0.72	1.85 deficiency.
Extreme northwest.....	1.28	0.47	0.81 deficiency.
Upper Mississippi valley.....	2.58	0.90	1.68 deficiency.
Missouri valley.....	1.54	0.91	0.63 deficiency.
Northern slope.....	0.45	0.82	0.37 excess.
Middle slope.....	0.37	0.12	0.25 deficiency.
Southern slope.....	0.84	2.43	1.59 excess.
Northern plateau.....	1.04	1.87	0.83 excess.
Middle plateau.....	1.17	1.17	normal.
Southern plateau.....	0.58	1.29	0.71 excess.
North Pacific.....	6.22	3.71	2.51 deficiency.
Middle Pacific.....	2.96	3.10	0.14 excess.
South Pacific.....	0.86	1.44	0.58 excess.
Mount Washington, N. H.....	7.22	4.18	3.04 deficiency.
Pike's Peak, Colo.....	2.33	0.61	1.72 deficiency.

There has been a deficiency in the monthly rainfall over a large extent of country from the New England and middle Atlantic coasts westward to the Missouri river, and also in the east Gulf states, the middle slope, and on the north Pacific coast. In the districts east of the Mississippi river (embraced in the area of deficiency) the departures vary from 0.86 in the Ohio valley to 2.62 in New England, and they average about 1.65.