The percentage of verification of weather predictions for April on the D., G. H., and M. R'y, is 83.0 for weather, and 75.0 for temperature; on the C. & G. T. R'y, weather, 84.7, temperature, 79.3; P. H. & N. W. R'y, weather, 76.7, temperature, 85.0; M. C. R'y, weather, 75.0, temperature, 79.7; G. R. & I. R'y, weather, 80.0, temperature, 83.0; C. & W. M. R'y, weather, 78.7, temperature, 83.3; P. O. & P. A. R'y, weather, 78.0, temperature, 76.8.

Cold-wave warnings were issued by the Chief Signal Officer on the 10th at 11.55 a. m., and were partially justified, a majority of the stations reporting a fall of 20° by 7 a. m. of the 11th. An order was issued at 7 a. m. of the 29th (Sunday) and the temperature fell from 35° to 42° during the afternoon of the 29th. The temperature was high during the forenoon, reaching 75°, and by night had fallen to 38°.

Nebraska.—The percentages of correct predictions for the state are as follows: temperature; 89.6; weather, 93.1; mean, 91.4.

South Carolina.—The percentages of verifications of the weather and temperature predictions for the state was: weather, 91.3; temperature, 97.9.

Tennessee.—The percentages of verifications of weather and temperature predictions sent daily from the Signal Office at Washington to the various stations in the state were for the state: weather, 90.6 per cent.; temperature, 90.4 per cent.

STATE WEATHER SERVICES.

The following extracts are republished from reports for April, 1888, of the directors of the various state weather services:

The "Alabama Weather Service," P. H. Mell, jr., of the Agricultural and Mechanical College, Auburn, director:

With the exception of a few days that were cool, the month has been mild and pleasant. The average temperature was 3°.6 above the normal, and there was a deficiency of 3.83 inches of rain. The 15th is about as late as the last killing frost occurs in this section, but in some portions of the state it came this month on the 25th. On the 21st the minimum thermometer registered 42°, and a light frost was formed. There were no decidedly cold days, yet the weather was cool enough to injure the tender plants to a slight degree and retard their growth. Farming operations have progressed rapidly, and planting has been pressed with much vigor. Oats, rye, and other grains are well advanced in fruitage and promise well. A great deal of cotton is up, and the warm days towards the last of the month caused the young plant to grow with increased vigor. The deficiency of rain has given cause for serious apprehensions in some sections, but no damage has yet resulted.

Summary.

Temperature (in degrees Fahr.).—Monthly mean, 66.6; highest monthly mean, 71.9, at Newton; lowest monthly mean, 59.9, at Gadsden; absolute maximum, 89, at Troy, on 16th; absolute minimum, 30, at Evergreen, on the 1st; range for state, 59; greatest local monthly range, 58, at Evergreen; least local monthly range, 33, at Newton.

Precipitation, including melted snow (in inches).—Average for the state, 2.46; greatest, 4.70, at Eufaula; least, 9.96, at Pineapple.

Wind.—Prevailing direction, southeast.

The "Arkansas Weather Service;" Prof. John C. Branner, Little Rock, director:

Frosts were reported at Lead Hill, Portia, and Memphis, Tenn., on the 13th, and at Portia on the 30th; the one of the 13th was observed in the valleys only at Eureka Springs.

The rainfall was largely in excess throughout the western portions of the state, being at Fort Smith 2.40 inches greater than the average of five years; Washington, 1.15 inches above twenty years; Conway, 4.5 inches; Russellville, 2.70 inches; Eureka Springs, 1.02 inches, and at Alexander, 0.18 inch above the same month last year; while it was below the average of eight years at Little Rock, 4.28 inches; Lead Hill, 2.70 inches below seven years; Helena, 0.40 inch, and Osceola, 0.20 inch below April, 1887.

The "Monthly Review of the Illinois Weather Service," Col. Charles F. Mills, Springfield, director:

The rainfall in the state has been far below the average, so that the month just passed has been the driest April on record in the state. Only two general rains occurred during the month, on the 9th and 10th, and on the 29th and 30th. In fact less rain fell in this state during April than in any other state east of the Rocky Mountains, and as a consequence winter wheat has been considerably damaged, and farming operations have been generally retarded. The average rainfall for the month was only 1.88 inches, which was 1.94 inches below the average of the past ten years. The driest April previous to this was in 1879, when the average rainfall was 2.18 inches, which was over half an inch greater than the rainfall of the April just passed. The greatest deficiency, as compared with the average, was in the southern division, where the rainfall was below the average.

The "Indiana Weather Service," Prof. H. A. Huston, of Purdue University, Lafayette, director:

The rainfall during the month was deficient nearly everywhere, except at a few places in the central portion of the state, where the total amount was increased by heavy local rains during thunder-storms on the 5th and 10th. Snow fell at a few places in the northern portion, but the amount was small.

Summary.

Temperature (in degrees Fahr.).—Monthly mean, 53.1; highest monthly mean, 65.8, at Marengo; lowest monthly mean, 46.2, at La Grange; absolute maximum, 89.0, at Connersville, on the 29th; absolute minimum, 22.0, at La Grange, on the 3d; range for state, 67; greatest local monthly range, 63.0, at La Grange; least local monthly range, 44.0, at Dagonia Springs.

Precipitation, including melted snow (in inches).—Average for the state, 2.27; greatest, 4.13, at Marengo; least, 1.00, at Crawfordsville.

Wind.—Prevailing direction, north.

The "Kansas Weather Service," Prof. J. T. Lovewell, Topeka, director:

Temperature.—The mean temperature for the state is slightly above the April mean, except in the Verdigris Valley, where it is slightly below. In the counties bordering the Missouri River it is 3°.5 above the average. At Topeka it is .6° above, while in the Arkansas Valley it is from 2° to 4° above. The average temperature for the eastern division is 58°, for the middle, 57°, and for the western division, 55°; average for the state, 57°. The frost of the 29th and 30th was general, and was severe, doing much damage to gardens and some to vineyards.

Precipitation.—The average precipitation for the state is 2.89; for the eastern division, 3.13; for the middle division, 1.17, and for the western division, 4.37. Of the total amount fallen in the state, the eastern division received 36 per cent., the middle division 14 per cent., and the western 50 per cent. In Johnson county the rainfall was about the April average. Proceeding south and southwest of Johnson there is an excess, which increases until the Verdigris Valley is reached, where it is from 2.70 to 3.10 inches in excess; it then diminishes slightly until the Ninnescah Valley is reached, but rapidly increases to the west again, being 2.50 above the normal in Ford county. There is a large deficiency in the counties bordering on the Missouri River, amounting to over an inch. In Douglas county a deficiency occurs, amounting to .61 at Lawrence. This deficiency rapidly increases westward, and at Topeka amounts to 1.31; it culminates in the contiguous portions of Mitchell, Osborne, Russell, and Lincoln counties, where less than two-tenths of an inch of rain fell during the entire month. The deficiency rapidly diminishes to the west again, there being an excess in the extreme western counties.

Summary.

Temperature (in degrees Fahr.).—Monthly mean for the state, 57; highest monthly mean, 61, at Sedan; lowest monthly mean, 53, at Eustice and Tribune; absolute maximum, 101, at Halstead, on the 22d; absolute minimum, 20, at Montero, on the 9th; range for state, 81; greatest local monthly range, 73, at Halstead; least local monthly range, 49, at Waterville; greatest daily range, 52, at Gibson and Tribune, on the 16th; least daily range, 0, at Rome on the 8th.

Precipitation, including melted snow (in inches).—Average for the state, 2.89; greatest, 10.20, at McAllister; least, .20, at Cawker City.

Wind.—Prevailing direction, south.

The "Louisiana State Weather Service," in charge of R. E. Kerkam, Sergeant, Signal Corps, at New Orleans:

The marked meteorological features of April, 1888, were the high average monthly temperatures, the great deficiency in the average rainfall, the absence of high winds, and the comparatively few thunder-storms.

The average rainfall for the past month for the state was 1.78 inches, being a deficiency of 4.10 inches, compared with a normal covering the past twenty years. There were but two years during that period when the average was less than during the past month, viz., 1873, 1.72 inches, and 1887, 1.30 inches. The greatest April average is recorded in 1874, when 15.50 inches fell. In 1880 an average of 10.12 inches is recorded. The average for the northern section during the past month was 2.02 inches, against an April normal of 6.31 inches, being a deficiency of 4.29 inches for the month. In the southern section of the state the average for the past month was 1.55 inches, the normal April rainfall for that section being 5.32.

The "Michigan Weather Service," N. B. Conger, Sergeant, Signal Corps, Lansing, director:

Temperature (in degrees Fahr.).—The mean temperature for April, 41.6, is 2.9 below the normal of thirteen years. The temperature was below the normal in all sections during April. The greatest deviation, 3.4, was for the Upper Peninsula, and the least was 1.3 below the normal in the northern section. The mean daily temperature was below the normal on twenty days and above on nine days. The highest mean daily temperature, 67, occurred on the 27th, when the temperature was 18 above the normal, and the lowest, 32, occurred on the 2d, when the temperature was 2 below the normal. The highest mean daily temperature, 67, for the past thirteen years occurred on April 27, 1888, and the lowest, 21, occurred on April 1 and 5, 1888. The highest mean monthly temperature, 52.7, occurred in April, 1878, and the lowest, 40.6, occurred in April, 1881. The maximum temperature, 90,

occurred at Evart on the 27th, and at Omer on the 28th, and the lowest, —12.8, occurred at Sault Sainte Marie on the 3d. Two stations report a temperature below zero during the month, viz.: Sault Sainte Marie and Gaylord, on the 3d. The extreme range for the state was 102.8.

Precipitation, including melted snow (in inches).—The average amount of precipitation for April, 1.92, is 0.60 below the normal of thirteen years. The precipitation was below the normal in all sections, except the Upper Peninsula, where an excess of 1.76 occurred. The precipitation at Marquette, 5.07, is 3.43 above the normal at that station. The greatest deficiency, 0.81, occurred in the southern section. No rain was recorded in the southern section from the 19th to the 29th, a period of ten days. Comparing the average precipitation of this month with the records of thirteen years it is found that the greatest average precipitation, 5.65, occurred in 1880, and the least, 1.38, occurred in 1879. A very heavy rain storm, accompanied by hail, is reported at Adrian on the 5th, with 1.50 inches of rain in ten minutes.

Summary.

Temperature (in degrees Fahr.).—Monthly mean, 41.6; highest monthly mean, 47.8, at Bronson; lowest, 32.0, at Sault Sainte Marie; absolute maximum, 90.0, at Evart and Omer, on the 27–28th; absolute minimum, —12.8, at Sault Sainte Marie, on the 3d; range for state, 102.8; greatest local monthly range, 83.8, at Sault Sainte Marie; least, 46.0, at Pontiac; greatest daily range, 51.5, at Sault Sainte Marie, on the 3d; least, 3.0, at Detroit and Ovid, on the 15th, and Port Huron on the 24th.

Precipitation, including melted snow (in inches).—Average for the state, 1.92; greatest, 5.07, at Marquette; least, 0.80, at Albion.

Wind.—Prevailing direction, northwest.

The "Minnesota Weather Service," Prof. W. W. Payne, Northfield, director:

Temperature.—During the month of April the weather was considerably colder than the average, ranging from a few tenths of a degree below the normal in the extreme northwestern portion of the state to over 5° below in the vicinity of Saint Paul. At La Crosse the departure was about 4° below the normal, while at Moorhead and Duluth it was only 2° below. The average temperature for the state was 39.3, this was respectively, 2°.9, 8°.6, and 4°.8 colder than the corresponding months of 1885, 1886, and 1887. The coldest periods of the month were: 1st to 3d, 6th, 7th, 12th, 19th; the lowest temperatures occurred generally during the first of these periods. The minimum for the month was 4°.0 below zero; reported from Argyle on the 2d; this is the only station reporting a temperature below zero. Other stations that recorded low temperatures were: Pokegama Falls Dam, 1°.0, 7th; Morris, 4°.0, 2d; Saint Vincent, 5°.8, 2d and 6th. The warmest periods of the month were: 9th, 10th, 13th to 17th, 23d to 27th; the maximum temperatures were generally recorded during the last of these periods. The highest was 82°.0, on the 26th and 27th, at Tracy; 80°.0, at Farmington, on the 26th, and at Canby on the 21st. The range of temperature for the state was 86°.0. The greatest range for any station was 78°.1, at Argyle; the least range was 48°.2, at LaCrosse.

Precipitation.—The rainfall has been greater in the southern than in the northern part of the state. The greatest precipitation on any one day was on the 28th, when Minneapolis reported 2.22 inches. The greatest for the month, 5.19 inches, was reported from Mankato. General precipitations occurred on the 4th, 5th, 9th, 10th, 17th, 22d, and rainfall was reported from nearly all stations from the 26th to 29th, inclusive. In no case was the monthly precipitation less than one inch, the least amount reported being 1.06, at Saint Vincent. Stations having over five inches of rainfall were: Minneapolis, 5.12; Saint Paul, 5.14; and Mankato, 5.19. On five days, the 12th, 13th, 14th, 19th, and 21st, no precipitation was reported, and on the 15th the amount was inappreciable. Nearly all of the precipitation was in the form of rain, although 4.60 inches of snow fell at Argyle during the month, and 4.00 inches was reported at Farmington and Le Sueur. Canby was the only station reporting snow on the ground at end of month, and the amount there was only 1.00 inch. The average precipitation over the state for the month, including melted snow, was 3.06. This was 0.83 above the amount for the corresponding month of last year, 0.54 below that for April, 1886, and 0.57 above the amount reported for April, 1885. The departures from the normal of the past fifteen years' observations at La Crosse and Saint Paul are above the average, while at Duluth, Moorhead, and Saint Vincent the precipitation was below the average. The excess at La Crosse was 1.29, and at Saint Paul 2.89, the latter place having more than twice the usual amount. Duluth had a deficiency of 0.24; Moorhead, 0.95, and Saint Vincent, 0.16.

Wind.—The prevailing direction for the month was from the northwest.

The "Mississippi Weather Service," Prof. R. B. Fulton, of the University of Mississippi, Oxford, director:

The monthly mean temperature, 68°, is 2° in excess of the mean for the corresponding month of last year. Two cool waves occurred during the month, the first on the 13th and the second on the 21st; light frosts occurred in some localities on these dates.

Temperature (in degrees Fahr.). — Monthly mean, 68; highest monthly mean, 71, at Tupelo and Lake; lowest monthly mean, 66, at Batesville, Hernando, Holly Springs, and University; absolute maximum, 92, at Columbus, on the 17th; absolute minimum, 34, at Columbus, on the 13th; range for state, 58; greatest local monthly range, 58, at Columbus; least local monthly range, 26, at Tupelo; greatest daily range, 36, at Vicksburg, on the 22d; least daily range, 2, on the 5th, at Lamar.

Precipitation, including melted snow (in inches).—Average for the state, 1.57, is .25 less than the average amount for April, 1887; greatest, 5.54, at Port Gibson; least, 0.09, at Hazelhurst; average number of days on which rain, fell, 4.

The "Missouri Weather Service," Prof. Francis E. Nipher, of Washington University, Saint Louis, director:

Temperature (in degrees Fahr.).—The average for April was 57.5; the highest reported was 94, at Pro Tem; the lowest was 20, at Mound City; the average of maximum temperatures was 86.4, and the average of minimum temperatures was 30.5, making an average monthly range of 55.9.

Precipitation, including melted snow (in inches).—The average precipitation was 1.79 inches, which was 1.36 inches below the normal for April. The greatest amount reported was 3.27 inches at Lamar, and the least was 0.80 inches at Ozark.

The "Nebraska Weather Service," Prof. Goodwin D. Swezey, of Doane College, Crete, director:

The month has been on the whole decidedly warm, with about the average amount of rainfall; but following a cold and wet March, the spring in many parts of the state is not as far advanced as usual.

Temperature.—The mean of the month for southeastern Nebraska is 56°.6, which is higher than for ten Aprils past, and about 6° higher than their mean; the extreme temperature, 88°.9 and 21°, are both about normal.

Precipitation.—The rainfall over the state reached a maximum of 6 inches in Kearney county, and there is a gradual falling off to the southeast and northwest, being less than 2 inches in the southeastern counties, and less than an inch in the northwest. The average for the whole state is 2.04 inches.

The "Nevada Weather Service," Prof. Charles W. Friend, Carson City, director:

Both pressure and temperature for April were considerably above the normal. The highest temperature reported, 90°, occurred at Elko on the 20th, and the lowest, 14°, also occurred at Elko on the 5th. The highest temperature occurred generally throughout the state from the 20th to the 21st, and the lowest from the 4th to the 5th, except in the central part of the state, where it occurred from the 23d to the 25th.

The rainfall for April was generally light, much below the average. Light rains occurred in the eastern part of the state from the 1st to the 10th, and rain and snow throughout the whole state from the 22d to the 25th. The rainfall appears to have been equal to the average over a small area in the vicinity of the Humboldt River in Elko county. Generally, however, April was characterized by high temperature, extreme dryness, light winds, and an almost cloudless sky. Agricultural and grazing interests have suffered serious loss and inconvenience from the long-continued drought. At Carson City, the deficiency of precipitation since January 1, 1888, is 4.19 inches, which is more than a third of the average annual amount; and since September 1, 1887, the deficiency is 5.97 inches.

Summary.

Temperature (in degrees Fahr.).—The mean temperature for the month was 53.3, or 5.6 above the normal. The highest temperature, 86.3, occurred on the 21st; the lowest, 19.3, on the 5th; range for the month, 67.

Precipitation (in inches).—The total precipitation was 0.20, or 1.33 below the normal.

Wind.—Prevailing directions, northwest and southwest.

The "New England Meteorological Society," Prof. Wm. H. Niles, of the Institute of Technology, Boston, Massachusetts, president:

General conditions.—The month is most conveniently described by noting the cyclones whose passage over or near New England dominated the weather. These were eight in number. (1) On the 1st a depression approached from the west and crossed New England on the 2d, with central pressure 29.5 inches. General rain or snow began on the 1st and ended on the 3d. The 4th was clear, with high pressures and temperatures above freezing. (2d) On the 5th a cyclone approached from the Lakes, which, on the 6th, with central pressure 29.6 inches, crossed the Northern States, and caused rains until the 7th. The following anti-cyclone, with pressure 30.5 inches, gave cool, clear weather until the 10th. (3) A cyclone with central pressure, 29.5 inches on the 11th, passed from the Lakes northeasterly into Canada, while a subordinate centre moved from the Connecticut coast into the Atlantic. Rain and snow fell generally from the 10th to the 12th. (4) On the 13th a cyclone, with central pressure 29.7, approached the district from the northwest, crossing it on the 14th. The precipitation was light and not general over the whole district between the 13th and 15th. On the 16th and 17th fair weather prevailed. (5) A cyclone moving far north of New England on the 18th caused local rains on that date. (6) A depression east of Virginia on the 20th moved in the ocean sufficiently near the coast to cause general rain in the southern part of New England, and local rain or snow in the northern part on the 20th and 21st. (7) On the 23d a cyclone of increasing intensity, which had reached the Virginia coast from the west, passed by New England in the Atlantic, causing rains, especially in the southern portion, from the 22d to the 24th. High pressures, with very warm, fair weather, followed until the 29th. (8) A depression which had developed in the southwest moved into the ocean south of the district on the 30th, and local rains attendant upon it were reported on the 29th and 30th.

Atmospheric pressure (in inches).—Monthly mean, 30.07 (fifteen stations);

maximum observed, 30.56, at New Haven, on the 26th; minimum observed, 29.43, at Blue Hill, on the 2d; range for New England, 1.13; greatest local monthly range, 1.11, at Blue Hill; least local monthly range, 0.96, at Northfield.

Temperature (in degrees Fahr.).—Monthly mean, 40.1 (ninety-five stations); highest monthly mean, 45.0, at New London; lowest monthly mean, 31.8, at Berlin Falls; maximum, 89, at Northampton, on the 29th; minimum, —5, at Berlin Falls, on the 9th; range for New England, 94; greatest local monthly range, 81, at Strafford; least local monthly range, 35, at Nantucket; greatest daily range, 54, at Lake Cochituate, on the 28th; least daily range, 2, at Lunenburg, on the 24th.

Precipitation, including melted snow (in inches).—Average for New England, 2.70 (one hundred and seventeen stations); greatest, 4.97, at Jacksonville; least, 0.90, at Lunenburg.

Wind.—Prevailing direction, northwest (twenty-two stations).

The "New Jersey Weather Service," Prof. George H. Cook, of the Agricultural College, New Brunswick, director:

The mean temperature of the state for the month, as compared with the normals determined from past records of twenty-nine stations, was found to be 0°.5 above the mean. It was below the average until the 26th, when it rose at once to summer heat. On the 29th and 30th several stations recorded 90°.0, 91°.0, 91°.5, and 92°.0, respectively, which is the highest recorded, according to Mr. P. V. Spader's records, since April, 1861.

The average rainfall for the state, 3.28 inches, shows a deficiency for the month of 0.65 inch.

Temperature (in degrees Fahr.).—Monthly mean, 47.9; highest monthly mean, 51.3, at Bridgeton; lowest, 44.8, at Hanover; absolute maximum, 92.0; at Tenafly, on the 29th; absolute minimum, 22.0, at Tenafly, on the 25th; range for state, 70.0; greatest local monthly range, 70.0, at Tenafly; least, 38.0, at Ocean City; greatest daily range, 47.0, at Tenafly and Bordentown, on the 28th; least, 3.0, at Paterson, on the 18th.

Precipitation, including melted snow (in inches).—Average for the state, 3.28; greatest, 4.68, at New Brunswick; least, 1.89, at Beverly.

Wind.—Prevailing direction, northwest.

The "North Carolina Weather Service," Dr. Herbert Battle, of Raleigh, director:

Temperature (in degrees Fahr.).—Monthly mean, 59.0; normal, 57.5; departure from the normal, +2.1; average monthly range, 52.4; mean daily range, 23.2; greatest monthly range, 61.0, occurred at Salem; lowest monthly range, 36.8, occurred at Southport; greatest mean daily range, 30.0, occurred at Salem; least mean daily range, 15.0, occurred at Southport; highest monthly mean, 63.6, occurred at Chattanooga, Tenn.; lowest monthly mean, 53.0, occurred at Salem.

Precipitation, including melted snow (in inches).—Average, 1.83; normal, 4.51; departure from the normal, —2.68; greatest, 4.43, occurred at Chattanooga, Tenn.; least, 0.46, occurred at Davidson College.

Wind.—Prevailing direction, southwest.

The "Ohio Meteorological Bureau," Prof. B. F. Thomas, of the Ohio State University, Columbus, president; Charles E. Kilbourne, Secretary:

Temperature (in degrees Fahr.).—The mean temperature for the northern section, 45.9, is 6.0, and that of the middle section, 49.5, is 0.1 below the average; the mean for the southern section, 52.6, is 0.4 above the average; the mean for the state was 49.2, which is 0.2 below the mean for the past six years; the highest temperature, 92.0, occurred at Pomeroy, on the 29th; the same temperature was recorded at Portsmouth, April 23, 1885; it is the maximum for April since the opening of the bureau; the minimum for the month was 19.0, at Wooster, on the 12th; the mean daily range was 24.0; the greatest range was 49.0, at Youngstown, on the 28th; least, 5.6, at Cleveland (S. O.), on the 20th.

Precipitation, including melted snow (in inches).—Precipitation was general throughout the state on the 2d, 5th, 10th, 15th, 18th, 19th, and 30th. Local rains occurred in the northern section on the 1st, 9th, 11th, 12th, 13th, 20th, 21st, and 22d, in the middle section on the 6th, 9th, 21st, and 22d, and in the southern section on the 6th, 9th, 20th, 22d, and 23d. The mean rainfall in the northern section was 1.99; in the middle section, 1.97; and in the southern section, 2.02. The mean for the state was 1.99. These means are all below the average for the past six years, the deficiency in the northern section being 0.20, in the middle section, 0.78, and in the southern section, 1.50. The mean for the state was 0.83 below the average, making the deficiency for the year to May 1 2.01.

"Oregon Weather Service," report prepared by B. S. Pague, Sergeant, Signal Corps, Roseburg, Oregon:

The marked characteristics of April was its abnormally high temperature, deficiency in precipitation, and great number of clear or fair days.

Temperature.—The mean temperature of the state for April was 52°.2, which is about 3° above the April normal. Along the immediate coast the temperature was nearly normal, the mean being 49°; in the Willamette Valley it was above the normal from 3° to 5°, the mean being 52°.9; in the Umpqua Valley the mean was 56°, which is 5° above the normal; in the Rogue River Valley the mean was 55°.6, which is 6° above the normal; in the Lake country the mean was 48°.8, being 3°.9 above the normal; and in eastern Oregon the mean was 55.2°, which is 8° above the normal. Walla Walla had the highest mean temperature, 58°, and Fort Klamath the lowest mean, 45°.6.

Precipitation (in inches).—The precipitation was most decidedly below the normal in all sections of the state, except near the mouth of the Columbia River, where it was only slightly below the normal. Comparatively speaking, the greatest deficiency occurred in the lake country. Bandon has the greatest deficiency and La Grande the least. For the season from July 1, 1887, to May 1, 1888, the precipitation remains below the normal in all sections, except at Walla Walla, where it is .16 above the normal.

The "Pennsylvania State Weather Service," report prepared under the direction of the Franklin Institute, Philadelphia, by Sergeant T. F. Townsend, Signal Corps:

Temperature (in degrees Fahr.).—The average temperature for April, 1888, deduced from the tri-daily observations was 46.5, which is normal. Found from the mean maximum and mean minimum, it was 47.2, which differs only seven-tenths from the normal. A deficiency of heat existed until the latter part of the month, when the extreme high temperature of the 27th, 28th, 29th, and 30th brought it up to the monthly average. Owing to the low temperatures of January, February, and March, a deficiency for the year existed at the close of the month, which made the season some ten days behind that of former years. The first week in the month was comparatively warm, but was followed by cold, which continued until the 26th. The highest temperatures were recorded on the 29th and 30th, and averaged 88.2, the extreme being 92 at York. This is probably the warmest April weather ever recorded in Pennsylvania. The lowest temperatures were Bethlehem, 12; Coudersport, 15; Lock Haven, 15; Grampian Hills, 16; Eagles Mere, 16, and Bernice, 17. Most of the low temperatures occurred on the 8th, 9th, 13th, and 25th.

Precipitation, including melted snow (in inches).—The rainfall was quite evenly distributed, and averaged 2.52 inches for the state, which is a deficiency of nearly half an inch. Most of it fell during the middle of the month. The latter part of the month was quite dry. The heaviest rainfalls were on the 5th and 10th, and were attended by thunder-storms, which were severe and general throughout the state on the 5th, several of the observers reporting damage by lightning. Snow fell at many stations during the storms of the 14th and 16th, the greatest amounts being north and east of the Susquehanna, River. The following are the largest totals for the month: Eagles Mere, 8.7; Bernice, 7.3; Dyberry, 6.5; Wellsborough, 6; Coudersport, 4.7; and Montrose, 4.5. Many of the western stations had only "ground slightly covered" at any time during the month.

Wind.—Prevailing direction, northwest.

The "South Carolina Weather Service," Hon. A. P. Butler, Com'r of Agriculture for South Carolina, Columbia, director:

In a number of places throughout the state but little rain has fallen, the smallest amount being at Saint Matthews, where a little over a quarter of an inch fell. The greatest amount of precipitation occurred in the north and northeastern portion of the state, the greatest fall being at Greenville, 2.72. The mean rainfall for the state, 1.33, is 0.75 less than for April, 1887.

The mean temperature was 64°.6, 2°.3 higher than for April, 1887.

The following is an extract from the report of the "Meteorological Department of the State (Tennessee) Board of Health," prepared under direction of J. D. Plunket, M. D., President of the State Board of Health, by H. C. Bate, Signal Corps, Assistant, Nashville:

The meteorological features of April were the severe electric storms of the 9th and 22d in the middle division, the small proportion of rain-fall during the second decade, and the small percentage of cloudiness.

The mean temperature was 61°.4, nearly three degrees above the April mean for the past six years, and the highest during that period. The highest local mean was 66°, recorded at Memphis, and the lowest, 57°.5, recorded at Fostoria. The maximum temperature was 88°, recorded on the 5th, and was the lowest April maximum recorded during the past six years, except in 1884, and it was five degrees below the highest maximum during that period. The minimum temperature recorded was 30°, on the 21st and 22d, at four different stations, and was the highest April minimum during the period named, the next highest being 25°, in 1884, and the lowest 20°, in 1883 and 1886. The days of maximum temperature were the 5th and 29th in the eastern division, the 17th in the middle division, and the 4th, 5th, and 17th in the western division. The minimum temperature was recorded, with one or two exceptions, on the 21st. The daily ranges of temperature were about the normal.

The mean precipitation was 3.14 inches, nearly one inch less than the April mean for the past six years. Of this amount, the eastern and middle divisions received an average of about three and a half inches, and the western division about half that amount. The greatest rainfall occurred on the 9th, and it was particularly heavy in the eastern and middle divisions, where much injury was done to plowed land by washing and by packing it hard, and to fences along the water courses. The heaviest local rain of that date was at Beech Grove, where a fall of 3.27 inches was recorded. Other heavy local falls were recorded on that date in some portions of the middle division, and the day following in the eastern division. From the 11th to the 21st, inclusive, there was little or no rainfall in the state, except at one or two stations on the 18th and 19th. This drought immediately following the heavy rain of the 9th, coupled with almost uninterrupted sunshine, was severely felt in many portions of the state. The rain of the 9th was in many places accompanied by one of the severest electric storms ever witnessed. The greatest monthly rainfall was 4.72 inches, reported at Beech Grove, and the least, 1.15 inches, reported at Memphis.

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Table of miscellaneous meteorological data for April, 1888—Signal Service observations.

Stations and districts.	Elevation above sea-level, feet.	Atmospheric pressure: Mean actual barometer.	Departure from normal.	Mean reduced barometer.	Highest barometer.	Date.	Lowest barometer.	Date.	Monthly range of barometer.	Temperature: Monthly mean.	Departure from normal.	Max.	Date.	Mean max.	Min.	Date.	Mean min.	Monthly range.	Daily ranges: Greatest.	Date.	Least.	Date.	Mean relative humidity, per cent.	Mean temperature of dew-point, degrees Fahrenheit.	Precipitation, in inches.	Departure from normal precipitation, in inches.	Winds: Total movement, miles.	Prevailing direction.	Maximum velocity: Miles p. h.	Direction.	Date.	No. of rainy days.	No. of cloudy days.	No. of fair days.	No. of clear days.
New England.										40.6	−2.9														2.28	−1.41									
Eastport	53	29.96	+.13	30.02	30.48	26	29.49	21	0.99	36.5	−1.5	55.6	28	42.9	12.9	8	29.7	42.7	22.2	7	5.7	30	68.3	26.1	2.01	−1.56	6,441	nw.	34	e.	11	13	10	9	11
Portland	99	29.94	+.13	30.05	30.49	26	29.52	2	0.97	39.2	−4.8	64.5	28	46.1	15.5	8	30.5	49.0	28.2	26	3.8	11	66.3	27.6	3.80	+0.74	5,024	nw.	32	e.	11	11	8	13	9
Manchester	247	29.80	...	30.08	30.53	26	29.56	2	0.97	40.4	−5.6	81.0	28	49.5	16.8	8	30.7	64.2	40.2	28	7.5	11	59.1	25.2	2.60	...	4,696	nw.	26	nw.	17	12	5	14	11
Northfield	871	29.11	...	30.08	30.54	26	29.58	2	0.96	35.0	−3.0	77.0	29	44.7	7.9	9	26.3	69.1	40.8	28	5.1	21	67.1	23.8	2.87	...	6,315	s.	42	sw.	18	15	8	12	10
Boston	125	29.95	+.15	30.09	30.54	26	29.57	2	0.97	42.2	−1.8	66.0	28	50.5	20.8	8	34.6	45.2	28.1	26	7.4	2	59.2	27.1	2.04	−1.76	8,205	w.	42	w.	7	13	7	11	12
Edgartown	...	...	...	...	...	..	...	..	...	42.2	...	64.0	30	50.9	25.0	8	33.4	39.0	26.8	27	11.7	19	...	...	1.46	...	...	sw.	...	...	..	15	..	..	..
Nantucket	14	30.08	...	30.09	30.54	26	29.52	2	1.02	41.8	−2.2	62.0	30	48.2	26.9	9	35.7	35.1	20.5	26	8.5	16	85.3	37.4	1.43	...	6,695	w.	35	s.	11	12	6	11	13
Wood's Holl	22	30.06	...	30.06	30.55	26	29.52	2	1.03	41.3	−3.7	61.1	27	47.4	24.4	8	35.6	36.7	19.8	27	5.8	18	72.1	32.1	1.69	−2.95	9,893	sw.	46	sw.	22	11	4	14	12
Vineyard Haven	...	...	...	...	...	..	...	..	...	44.5	...	65.5	30	53.5	24.7	8	35.5	40.8	28.6	11	12.2	20	...	...	0.91	...	...	sw.	...	...	..	16	..	..	..
Block Island	26	30.06	+.14	30.09	30.56	26	29.53	2	1.03	41.1	−2.9	60.0	28	47.0	26.9	9	35.5	33.1	18.0	28	4.7	23	77.0	33.9	1.35	−2.04	9,646	nw.	39	se.	11	11	5	15	10
Narragansett Pier	...	...	...	...	...	..	...	..	...	42.5	...	65.0	28	51.7	22.0	9	33.3	43.0	27.0	28	10.0	18	...	...	2.56	−0.80	...	sw.	...	...	..	10	..	..	..
New Haven	107	29.98	+.13	30.10	30.56	26	29.55	2	1.01	44.0	−2.0	77.5	29	51.8	25.4	8	34.8	52.1	32.9	28	5.9	18	68.1	33.2	2.57	−1.31	5,463	nw.	30	w.	7	10	6	14	9
New London	47	30.03	+.11	30.08	30.53	26	29.53	2	1.00	44.6	−1.4	68.0	29	52.6	26.5	9	37.3	41.5	25.0	26	6.0	20	71.7	35.0	2.26	−1.58	5,309	nw.	36	se.	11	10	5	11	14
Mid. Atlantic States.										50.7	−0.6														2.00	−1.49									
Albany	85	30.00	+.13	30.10	30.55	26	29.52	2	1.03	43.6	−3.4	87.7	29	52.9	22.0	8	34.1	65.7	38.0	27	8.4	14	61.0	29.2	1.95	−0.90	4,600	nw.	35	s.	18	16	6	16	8
New York City	185	29.91	+.13	30.11	30.56	26	29.58	2	0.98	47.9	−0.1	84.2	29	57.3	29.2	13	39.4	55.0	35.2	28	10.2	10	62.6	34.8	3.57	+0.28	7,440	w.	52	se.	5	11	5	11	14
Philadelphia	117	30.01	+.15	30.13	30.59	26	29.57	2	1.02	50.7	+0.7	90.7	30	60.3	31.0	13	41.8	59.7	33.6	28	8.0	20	53.1	32.8	2.10	−0.82	7,751	nw.	37	nw.	14	8	6	10	14
Atlantic City	34	30.10	+.16	30.13	30.59	26	29.57	2	1.02	45.9	−1.1	74.3	6	54.6	30.3	25	38.6	44.0	34.5	2	4.5	23	74.1	37.6	2.96	−0.37	7,275	s.	36	se.	10	8	3	13	14
Baltimore	45	30.09	+.14	30.13	30.60	26	29.57	2	1.03	52.6	−0.4	90.0	29	62.0	32.8	13	43.2	57.2	33.8	2	10.1	11	50.3	32.6	2.11	−1.86	4,736	nw.	28	nw.	14	9	2	17	11
Washington City	106	30.03	+.14	30.15	30.62	26	29.58	2	1.04	52.9	+0.9	89.0	29	64.4	31.8	13	42.4	57.2	38.2	27	12.4	11	59.2	37.3	1.89	−1.02	5,147	nw.	33	nw.	14	9	2	15	13
Cape Henry	...	...	...	...	...	..	...	..	...	53.6	...	92.0	30	65.4	34.8	16	41.9	57.2	37.8	30	9.0	23	...	...	0.77	−3.99	...	nw.	...	...	..	6	..	..	..
Lynchburg	652	29.44	+.14	30.14	30.62	26	29.66	2	0.96	56.3	+0.3	88.9	9	69.0	31.3	25	43.2	57.6	43.8	27	11.2	23	53.8	37.1	1.67	−1.81	2,903	nw.	26	w.	14	7	4	9	17
Norfolk	69	30.08	+.11	30.15	30.63	26	29.64	2	0.99	55.4	−0.6	93.1	30	66.4	32.2	21	44.3	60.9	38.1	18	7.5	20	68.7	44.1	0.97	−2.92	5,002	ne.	32	nw.	16	8	4	8	18
S. Atlantic States.										63.8	+1.5														1.10	−2.68									
Charlotte	808	29.31	+.15	30.15	30.63	26	29.75	2	0.88	63.2	+4.2	91.0	29	75.5	38.3	25	51.1	52.7	34.9	14	13.2	10	51.5	42.3	2.36	−1.82	4,080	sw.	30	ne.	19	7	4	13	13
Hatteras	12	30.19	+.20	30.21	30.64	26	29.78	2	0.86	57.3	+0.3	74.8	29	64.0	41.0	13	49.8	33.8	24.3	29	6.0	2	80.2	51.1	0.77	−4.35	10,444	s.	46	n.	13	6	2	9	19
Kitty Hawk	...	...	...	...	...	..	...	..	...	57.7	...	92.0	30	68.4	39.4	21	47.0	52.6	39.3	29	9.2	12	...	...	1.17	−4.13	...	ne.	...	...	..	12	..	..	..
Raleigh	375	29.76	...	30.16	30.62	26	29.73	2	0.89	59.1	+1.1	89.7	29	70.4	35.0	26	47.6	54.7	38.7	29	8.8	20	68.2	47.7	1.71	...	4,866	nw.	27	n.	16	5	4	9	17
Southport	...	...	...	...	...	..	...	..	...	61.5	...	77.0	29	69.2	40.2	26	53.9	36.8	25.1	21	8.0	2	...	...	1.41	−0.81	...	sw.	...	...	..	5	..	..	..
Wash Woods	...	...	...	...	...	..	...	..	...	54.3	...	90.4	30	63.7	37.8	26	44.9	52.6	39.6	30	7.0	4	...	...	0.27	−2.24	...	e.	...	...	..	7	..	..	..
Wilmington	52	30.11	+.15	30.17	30.62	26	29.76	2	0.86	61.7	+0.7	87.5	30	72.0	37.3	26	51.2	50.2	32.2	27	12.2	10	75.2	53.3	1.10	−2.27	6,085	sw.	28	sw.	10	6	6	9	15
Charleston	52	30.11	+.13	30.16	30.56	26	29.81	2	0.75	65.6	+1.6	88.0	30	74.7	50.0	21	58.9	38.0	28.4	29	8.3	9	76.2	56.9	1.38	−3.02	7,105	sw.	36	ne.	17	8	5	10	15
Columbia	...	...	...	...	...	..	...	..	...	66.1	...	90.0	29	76.6	41.2	25	54.5	48.8	36.7	29	14.0	10	63.8	52.4	0.91	...	...	...	...	...	..	6	3	8	19
Augusta	183	29.98	+.14	30.17	30.60	26	29.84	2	0.76	66.4	+2.4	90.7	29	79.7	43.0	27	54.8	47.7	41.1	29	15.0	4	63.4	51.7	0.87	−3.23	3,143	s.	24	n.	24	2	6	10	14
Savannah	87	30.07	+.12	30.16	30.54	26	29.87	23	0.67	66.6	+0.6	88.1	30	76.8	47.8	22	58.1	40.3	36.7	29	10.2	4	69.4	54.7	0.71	−3.53	5,999	e.	28	e.	9	4	3	12	15
Jacksonville	43	30.10	+.10	30.16	30.47	26	29.90	20	0.57	70.1	+1.1	88.0	30	80.7	49.0	22	61.9	39.0	32.7	29	10.7	9	72.7	60.1	0.93	−1.41	5,148	ne.	26	ne.	25	5	1	15	14
Florida Peninsula.										73.2	+0.6														0.62	−1.50									
Titusville	12	30.16	...	30.17	30.43	26	29.94	20	0.49	71.6	...	86.8	11	79.0	56.0	24	62.6	30.8	28.0	23	5.0	9	77.4	63.6	2.59	...	7,922	se.	37	n.	19	5	1	13	16
Cedar Keys	22	30.15	+.12	30.17	30.42	26	29.98	20	0.44	70.6	+1.6	81.2	5	76.9	55.0	22	64.7	26.2	19.2	27	4.2	6	74.0	61.1	0,09	−2.82	6,146	w.	26	e.	10	2	1	17	12
Key West	22	30.12	+.10	30.14	30.31	6	30.02	20	0.29	75.7	−0.3	82.5	4	79.7	64.5	26	70.8	18.0	14.0	5	5.4	21	74.4	66.7	1.15	−0.19	6,938	e.	38	ne.	26	8	5	13	12
Jupiter	28	30.12	...	30.14	30.37	5	29.93	20	0.44	72.9	...	88.5	20	80.0	58.8	16	66.0	29.7	23.4	20	6.1	26	79.7	66.0	4.08	...	7,212	se.	36	ne.	25	7	4	12	14
Eastern Gulf States.										68.2	+2.4														1.96	−3.66									
Atlanta	1,129	28.99	+.14	30.17	30.57	26	29.88	2	0.69	64.1	+3.1	84.3	18	74.3	39.7	21	54.1	44.6	27.2	13	10.0	10	52.7	44.3	1.34	−3.12	6,868	w.	28	w.	10	4	2	13	15
Pensacola	56	30.10	+.09	30.16	30.38	26	29.98	2	0.40	69.9	+2.9	78.5	5	75.0	54.0	21	61.8	24.5	21.5	15	5.2	1	74.7	61.0	1.60	−3.18	6,016	sw.	30	...	11	5	5	12	13
Mobile	35	30.12	+.12	30.16	30.39	26	29.94	2	0.45	68.0	+1.0	84.0	16	76.7	50.0	21	60.9	34.0	25.0	14	7.6	1	80.5	61.0	3.39	−2.33	6,078	s.	24	se.	23	5	6	16	8
Montgomery	217	29.92	+.12	30.15	30.49	26	29.88	2	0.61	68.7	+3.7	86.6	17	79.3	44.0	21	57.9	42.6	33.9	22	11.6	7	56.2	50.2	1.08	−4.92	3,779	sw.	24	e.	17	4	5	15	10
Vicksburg	222	29.89	+.11	30.12	30.31	12	29.84	2	0.47	68.7	+2.7	85.0	3	79.2	45.8	21	58.7	39.2	36.0	22	9.8	23	66.1	55.6	2.44	−4.41	4,922	s.	30	n.	6	5	2	18	10
University	...	...	...	...	...	..	...	..	...	66.4	...	85.0	16	77.8	42.0	13	55.1	43.0	34.0	22	13.0	2	...	...	1.69	...	...	s.	...	...	..	8	..	..	..
New Orleans	52	30.08	+.12	30.14	30.33	26	29.96	2	0.37	69.9	+0.9	85.0	5	78.4	56.3	13	63.3	28.7	22.0	22	6.8	12	77.3	61.8	1.89	−3.99	5,201	e.	26	n.	23	8	1	21	8
Auburn	...	...	...	...	...	..	...	..	...	66.7	...	83.0	16	75.4	48.0	24	58.0	35.0	24.0	16	8.0	9	...	...	2.47	...	...	sw.	...	...	..	9	..	..	..
Western Gulf States.										68.9	+2.4														5.01	+0.79									
Shreveport	249	29.83	+.09	30.08	30.34	13	29.78	2	0.56	69.3	+2.3	87.0	2	78.7	46.0	30	59.9	41.0	28.3	14	11.6	11	69.4	57.6	4.49	−1.18	5,115	s.	27	s.	27	9	9	13	8
Fort Smith	470	29.60	+.15	30.10	30.39	12	29.72	9	0.67	65.0	+4.0	89.7	1	76.3	41.5	30	55.4	48.2	35.2	1	9.5	27	60.1	49.2	7.24	+2.36	4,311	se.	24	sw.	9	10	9	5	16
Little Rock	309	29.79	+.13	30.12	30.40	13	29.78	9	0.62	66.2	+3.2	86.0	5	76.8	43.0	21	55.0	43.0	33.0	22	13.5	29	59.7	50.5	0.84	−4.28	4,990	se.	27	s.	6	6	9	9	12
Corpus Christi	20	30.05	+.15	30.06	30.31	13	29.84	9	0.47	72.6	+2.6	79.3	24	76.0	57.3	30	67.4	22.0	16.0	28	2.9	18	83.7	67.4	1.45	...	10,898	se.	48	e.	20	4	10	18	2
Galveston	44	30.06	+.11	30.10	30.30	13	29.91	9	0.39	71.2	+1.2	78.0	23	75.3	55.5	30	67.7	22.5	15.3	30	5.2	28	85.5	66.6	3.13	+0.09	9,109	s.	36	s.	27	9	6	18	6
Palestine	533	29.53	+.09	30.08	30.31	13	29.85	2	0.46	68.5	+2.5	84.4	4	77.7	41.9	30	61.3	34.5	23.4	17	4.4	26	74.9	59.1	6.62	+2.81	7,190	s.	30	se.	8	8	9	15	6
San Antonio	781	29.26	+.11	30.08	30.37	12	29.86	8	0.51	69.3	+1.3	86.0	4	78.5	50.2	30	62.7	35.8	26.4	14	7.6	27	77.9	61.3	7.72	+4.92	6,434	se.	34	n.	24	13	14	12	4
Rio Grande Valley.										74.4	+1.4														4.14	+3.42									
Rio Grande City	230	29.84	+.10	30.09	30.39	12	29.87	9	0.52	74.5	+2.5	92.4	9	83.7	58.8	30	67.6	33.6	26.6	2	7.9	28	81.0	67.6	3.50	+2.60	6,314	se.	28	n.	29	7	9	12	9
Brownsville	57	29.99	+.11	30.05	30.29	13	29.84	9	0.45	74.2	+0.2	84.1	24	81.1	60.9	14	68.4	23.2	19.3	29	5.2	20	85.2	69.4	4.79	+4.23	7,264	s.	37	ne.	29	9	4	25	1
Ohio Val. & Tenn.										57.9	+1.6														2.72	−1.51									
Chattanooga	783	29.33	+.13	30.15	30.58	26	29.82	2	0.76	63.6	+3.6	83.7	29	75.5	40.0	21	52.3	43.7	34.2	15	7.2	9	59.8	47.4	4.43	−0.49	5,096	s.	26	sw.	10	7	4	8	18
Knoxville	980	29.13	+.14	30.16	30.58	26	29.82	2	0.76	61.3	+3.3	84.8	29	73.4	35.5	21	49.5	49.3	36.0	15	13.0	9	59.1	45.5	4.00	−1.44	4,885	n.	36	w.	5	9	4	7	19
Memphis	320	29.79	+.14	30.13	30.40	12	29.78	1	0.62	65.5	+0.5	86.5	4	75.8	43.0	21	55.8	43.5	32.5	17	7.5	23	54.1	47.3	1.15	−4.80	5,309	ne.	32	nw.	6	6	5	12	13
Nashville	549	29.55	+.14	30.13	30.46	26	29.73	1	0.73	61.9	+2.9	85.0	17	73.9	38.0	21	50.9	47.0	38.0	15	10.1	9	51.3	41.8	4.18	−0.99	4,804	nw.	35	sw.	17	7	3	10	17
Louisville	551	29.56	+.15	30.15	30.48	25	29.61	1	0.87	59.6	+3.6	84.8	28	69.7	32.5	21	48.0	52.3	33.6	17	11.0	10	52.2	40.2	2.99	−1.70	6,010	ne.	35	nw.	5	7	4	8	18
Indianapolis	766	29.33	+.17	30.15	30.50	25	29.55	1	0.95	52.6	+0.6	83.3	28	64.0	30.9	3	42.0	52.4	34.9	17	7.7	22	54.2	34.7	4.05	+0.49	4,758	nw.	24	nw.	6	9	6	13	11
Terre Haute	...	...	...	...	...	..	...	..	...	55.0	...	82.2	29	67.1	32.4	31	42.8	49.8	35.8	15	8.1	30	...	...	3.93	...	...	w.	...	...	..	6	..	..	..
Cincinnati	628	29.47	+.16	30.15	30.52	25	29.57	1	0.95	54.7	+0.7	84.1	29	65.5	33.4	20	44.1	50.7	32.4	17	8.0	22	51.9	35.7	1.14	−1.27	5,922	n.	30	sw.	1	5	4	10	16
Columbus	812	29.29	+.17	30.16	30.58	25	29.56	1	1.02	51.0	0.0	84.3	29	62.1	30.4	8	40.2	53.9	34.4	1	10.4	15	54.1	33.0	1.53	−1.75	5,989	w.	42	sw.	30	11	5	8	17
Pittsburg	847	29.22	+.14	30.12	30.57	25	29.55	1	1.02	50.5	−0.5	86.0	29	61.6	25.5	8	38.9	60.5	38.1	1	8.5	20	61.1	36.0	1.04	−1.66	5,254	nw.	36	w.	14	14	10	11	9
Lexington	...	29.10	...	...	...	..	...	..	...	55.6	...	84.0	28	67.5	32.4	21	43.8	51.6	39.0	17	11.5	10	52.9	36.9	3.17	...	5,581	ne.	30	sw.	10	6	5	9	16
Lower lake region.										42.2	−1.7														1.94	−0.41									
Buffalo	690	29.38	+.16	30.12	30.59	25	29.58	1	1.01	38.8	−2.2	66.0	27	46.1	21.4	8	32.0	44.6	32.6	9	4.5	11	70.4	29.0	3.46	+1.15	7,212	sw.	45	sw.	11	13	5	12	13
Oswego	335	29.73	+.12	30.10	30.54	25	29.51	2	1.03	38.1	−1.9	72.0	27	44.0	19.2	8	32.1	52.8	31.7	27	5.0	15	72.4	29.2	2.09	+0.03	7,870	w.	36	w.	18	13	8	11	11
Rochester	621	29.44	+.14	30.12	30.58	25	29.60	2	0.98	40.5	−1.5	79.5	28	49.0	21.0	8	32.9	58.5	31.0	27	7.8	24	67.3	29.1	1.22	−1.41	8,739	nw.	42	w.	18	11	6	13	11
Erie	681	29.40	+.16	30.14	30.58	25	29.52	1	1.06	41.8	−2.2	73.0	29	50.4	22.5	8	34.7	50.5	29.4	5	6.4	20	66.7	30.4	2.70	+0.16	7,007	nw.	44	sw.	5	12	8	10	12
Cleveland	690	29.40	+.16	30.15	30.59	25	29.54	1	1.05	44.5	−0.5	79.0	29	54.0	26.5	8	36.2	52.5	37.3	1	5.6	20	65.5	32.6	2.18	−0.19	6,196	nw.	39	s.	5	11	11	7	12
Sandusky	629	29.42	+.11	30.16	30.58	25	29.57	1	1.01	45.4	−0.6	85.1	28	55.0	28.5	8	37.7	56.6	37.0	5	6.9	5	62.0	31.9	1.61	−0.84	7,298	e.	42	nw.	5	7	9	7	14
Toledo	673	29.42	+.14	30.16	29.56	25	29.57	1	0.99	45.6	−1.4	83.0	29	55.1	25.8	3	36.7	57.2	36.5	29	6.9	19	60.2	31.0	0.86	−1.36	7,654	nw.	38	w.	10	9	10	11	9
Detroit	662	29.43	+.16	30.16	30.57	25	29.58	1	0.99	42.9	−3.1	82.0	28	51.8	23.2	8	34.7	58.8	41.5	29	3.0	15	63.3	29.9	1.44	−0.84	7,179	nw.	36	s.	13	9	11	9	10
Upper lake region.										38.8	−1.5														2.49	+0.14									
Alpena	609	29.46	+.14	30.15	30.47	24	29.44	10	1.03	34.5	−1.5	70.6	27	41.9	13.2	8	27.6	57.4	30.3	27	4.0	30	80.0	28.4	2.82	+0.80	7,270	nw.	36	e.	10	9	6	15	9
Escanaba	608	...	...	...	...	..	...	..	...	35.2	−0.8	61.0	27	45.3	10.0	3	25.1	51.0	34.4	4	5.5	29	...	...	2.80	+0.80	...	n.	...	w.	..	14	..	..	..
Grand Haven	620	29.45	+.15	30.13	30.49	24	29.51	10	0.98	41.5	−2.5	74.0	28	49.9	37.6	24	34.4	36.4	33.5	29	4.7	20	67.7	30.6	1.54	−1.00	8,820	nw.	36	s.	13	12	11	7	12
Lansing	883	29.18	...	30.14	30.50	25	29.53	10	0.97	43.0	−2.0	82.3	28	53.8	22.0	3	33.0	60.3	40.2	29	7.9	30	69.2	32.3	1.45	...	6,228	nw.	30	sw.	10	8	9	9	12
Marquette	672	29.40	+.14	30.16	30.56	24	29.61	5	0.95	33.2	−3.8	61.8	27	40.6	13.5	8	26.5	48.3	33.0	8	4.0	19	76.9	26.5	5.07	+3.22	6,488	nw.	36	nw.	5	15	8	16	6
Port Huron	639	29.45	+.17	30.16	30.59	25	29.51	10	1.08	40.0	−1.0	81.9	28	48.9	20.3	8	31 6	61.6	34.9	26	3.0	24	68.5	29.4	1.25	−0.83	8,629	n.	48	w.	6	8	5	14	11
Chicago	715	29.37	+.16	30.15	30.54	12	29.58	1	0.96	45.4	−0.6	83.0	28	55.7	30.0	7	37.1	53.0	35.5	29	5.7	24	62.4	32.2	2.13	−1.18	9,112	ne.	37	sw.	13	10	5	13	12
Milwaukee	697	29.37	+.15	30.13	30.51	12	29.53	10	0.98	41.1	−0.9	77.9	27	49.8	27.5	3	33.6	50.4	36.4	28	4.2	30	69.2	31.0	2.34	−0.47	7,763	se.	45	w.	13	10	7	15	8
Green Bay	616	29.47	...	30.16	30.57	12	29.61	10	0.96	39.4	+0.4	81.8	27	47.3	21.0	8	31.6	60.8	30.1	25	4.5	30	79.1	32.5	2.90	...	6,511	n.	36	ne.	29	10	13	13	4
Duluth	672	29.41	+.15	30.16	30.53	24	29.61	5	0.92	35.0	−2.0	66.8	25	45.3	17.5	4	28.5	49.3	33.9	25	9.1	22	81.7	29.3	1.97	−0.25	6,085	ne.	29	ne.	4	9	10	10	10
Extreme northwest.										38.3	−0.1														0.67	−1.16									
Moorhead	926	29.10	+.14	30.13	30.60	11	29.46	4	1.14	37.9	−2.1	76.0	25	47.1	7.0	2	29.3	69.0	32.0	25	4.0	19	73.1	29.2	1.43	−0.96	8,860	s.	54	se.	24	10	8	18	4
Saint Vincent	804	29.22	+.09	30.12	30.70	28	29.46	4	1.24	34.8	−0.2	77.2	25	45.2	5.8	6	24.3	71.4	32.7	29	7.6	19	76.1	27.4	1.06	−0.31	9,141	s.	40	s.	25	9	6	15	9
Bismarck	1,681	28.26	+.11	30.10	30.67	28	29.37	4	1.30	42.2	+2.2	81.2	24	55.6	6.1	2	29.9	75.1	44.7	8	7.6	1	67.9	30.4	0.11	−2.57	9,346	nw.	48	nw.	26	5	2	21	7
Fort Buford	1,930	27.99	+.07	29.99	30.71	28	29.32	24	1.39	41.3	+0.3	82.2	24	54.7	3.5	2	29.5	78.7	43.3	24	7.4	28	66.8	29.3	0.61	−0.80	7,679	e.	48	nw.	17	5	9	17	4
Fort Totten	1,487	28.46	+.11	30.12	30.70	28	29.48	4	1.42	35.1	−0.9	74.2	25	45.8	−0.6	2	25.5	74.8	33.8	24	11.5	3	74.1	26.5	0.65	−1.08	12,925	se.	54	nw.	17	6	5	17	8
Fort Yates	...	...	...	...	...	..	...	..	...	46.9	...	83.0	24	60.7	12.4	2	33.1	70.6	44.0	8	7.0	1	...	...	0.14	−1.22	...	nw.	...	...	..	5	..	..	..

Table of miscellaneous meteorological data for April, 1888—Signal Service observations—Continued.

Stations and districts.	Elevation above sea-level, feet.	Atmospheric pressure: Mean actual barometer.	Departure from normal.	Mean reduced barometer.	Extremes: Highest barometer.	Date.	Lowest barometer.	Date.	Monthly range of barometer.	Temperature of the air: Monthly mean.	Departure from normal.	Extremes: Max.	Date.	Mean max.	Min.	Date.	Mean min.	Monthly range.	Daily ranges: Greatest.	Date.	Least.	Date.	Mean relative humidity, per cent.	Mean temperature of dew-point, degrees Fahrenheit.	Precipitation, in inches.	Departure from normal precipitation, in inches.	Winds: Total movement, miles.	Prevailing direction.	Maximum velocity: Miles p. h.	Direction.	Date.	No. of rainy days.	No. of cloudy days.	No. of fair days.	No. of clear days.
Upper Miss. Valley.										**51.1**	**− 0.4**														**2.47**	**− 0.52**									
Saint Paul	831	29.20	+.15	30.12	30.57	12	29.49	4	1.08	40.5	− 5.5	76.0	26	50.6	22.6	6	32.6	53.4	27.0	26	6.0	29	76.7	33.1	5.14	+ 2.83	5,710	e.	40	e.	4	11	9	15	6
La Crosse	744	29.34	+.18	30.15	30.61	12	29.63	5	0.98	44.1	− 3.9	74.2	27	53.0	26.0	6	35.7	48.2	31.0	28	7.2	29	61.8	30.2	3.29	+ 1.29	6,714	nw.	28	nw.	17	13	11	15	4
Davenport	615	29.45	+.14	30.12	30.57	12	29.60	1	0.97	49.5	− 0.5	81.3	26	60.8	29.2	12	39.1	52.1	34.4	13	7.1	30	60.5	34.7	1.57	− 1.27	6,867	nw.	48	sw.	13	6	3	15	12
Des Moines	866	29.18	+.14	30.11	30.62	12	29.58	4	1.04	51.0	+ 1.0	79.6	26	62.4	21.4	20	40.0	58.2	35.9	6	6.3	30	63.6	37.3	1.45	− 1.47	5,967	n.	30	nw.	17	9	7	11	12
Dubuque	665	29.41	+.16	30.14	30.60	12	29.62	5	0.98	47.9	− 0.1	81.6	26	58.2	28.5	6	37.9	53.1	31.0	13	5.7	30	65.9	35.6	2.58	− 0.22	4,921	nw.	25	sw.	13	12	7	12	11
Keokuk	618	29.43	+.14	30.09	30.56	12	29.58	1	0.98	53.2	+ 1.2	81.0	26	64.7	29.3	20	42.5	51.7	34.6	1	7.0	9	59.2	37.6	1.85	− 1.09	7,450	se.	34	sw.	15	6	2	12	16
Cairo	359	29.76	+.16	30.14	30.45	12	29.66	1	0.79	61.4	+ 2.4	82.5	17	71.3	40.0	20	52.5	42.5	28.1	3	9.7	6	51.7	41.8	3.08	− 1.06	7,671	n.	36	nw.	22	7	5	12	13
Springfield	644	29.46	+.16	30.15	30.55	12	29.60	1	0.95	53.4	− 0.6	80.0	27	65.7	30.0	13	41.5	50.0	38.8	13	13.7	29	56.2	36.4	1.41	− 2.11	6,721	s.	36	w.	17	6	6	13	11
Saint Louis	571	29.51	+.14	30.12	30.52	12	29.56	1	0.96	58.7	+ 2.7	87.5	1	70.5	34.8	20	48.4	52.7	33.4	17	12.2	29	53.0	39.5	1.88	− 1.59	9,370	se.	44	s.	5	4	4	8	18
Missouri Valley.										**51.0**	**+ 2.5**														**1.88**	**− 1.16**									
Lamar	1,028	29.05	.....	30.14	30.60	12	29.68	9	0.92	58.7	.....	82.8	22	70.3	30.8	20	48.5	52.0	33.2	3	10.4	8	64.2	45.1	3.27	− 1.13	8,356	se.	37	nw.	5	7	5	14	11
Springfield	1,356	28.68	.....	30.10	30.45	12	29.64	1	0.81	55.6	− 0.4	84.3	1	70.8	30.8	20	48.9	53.5	35.6	21	8.5	27	57.3	42.3	1.82	....	8,640	se.	36	s.	4	7	4	12	14
Leavenworth	842	29.22	+.15	30.11	30.62	12	29.60	9	1.02	56.5	+ 2.5	87.4	22	68.8	29.5	20	45.8	57.9	41.6	21	9.4	8	59.5	40.9	2.32	− 1.28	6,067	s.	30	se.	4	8	6	15	9
Topeka	.....	.....	.....	.....	.....	..	.....	..	....	55.7	.....	90.1	22	70.3	27.0	20	43.1	63.1	43.9	21	10.0	8	65.0	42.1	1.36	....	.....	.....	...	.....	..	7	4	14	12
Omaha	1,113	28.93	+.15	30.13	30.65	12	29.52	4	1.13	52.5	+ 2.5	86.5	21	65.5	28.0	20	42.1	58.5	41.7	21	8.0	9	58.4	36.1	2.95	− 0.34	7,465	n.	36	n.	18	8	9	13	8
Crete	.....	.....	.....	.....	.....	..	.....	..	....	53.5	.....	87.3	21	68.2	26.0	20	40.7	61.3	43.3	21	7.5	29	67.2	41.4	2.31	....	.....	.....	...	.....	..	5	8	11	11
Valentine	2,614	27.33	.....	30.06	30.58	11	29.31	4	1.27	50.0	+ 5.0	88.0	21	66.0	23.2	30	36.1	64.8	48.2	21	11.8	25	54.9	30.9	1.05	− 0.91	9,692	n.	56	s.	24	6	4	12	14
Fort Sully	1,600	28.34	+.08	30.06	30.62	28	29.30	4	1.32	49.7	+ 4.7	83.0	21	63.0	22.5	19	36.2	60.5	44.3	8	11.9	1	56.2	32.7	0.53	− 1.23	8,007	se.	47	nw.	16	8	3	15	12
Huron	1,307	28.68	+.12	30.10	30.59	11	29.41	4	1.18	44.8	+ 0.8	79.8	21	60.2	20.0	19	31.4	59.8	47.0	20	11.0	28	62.2	30.7	0.88	− 2.01	9,156	se.	54	sw.	8	5	5	13	12
Yankton	1,234	28.76	+.12	30.08	30.60	11	29.40	4	1.20	48.2	+ 2.2	84.8	21	63.0	24.2	19	37.0	60.6	42.0	21	5.2	29	65.3	35.1	2.16	− 1.17	7,621	n.	48	s.	17	9	6	13	11
Northern slope.										**46.5**	**+ 4.1**														**1.05**	**− 0.22**									
Fort Assinaboine	2,720	27.17	+.05	30.01	30.78	28	29.45	4	1.33	44.6	+ 2.6	80.0	20	58.8	15.1	5	32.9	64.9	40.0	19	12.5	10	57.2	28.7	0.50	− 0.56	7,680	nw.	49	w.	8	7	11	15	4
Fort Custer	3,040	26.86	+.07	30.01	30.73	28	29.39	4	1.34	50.5	+ 5.7	81.3	24	64.5	25.4	1	34.7	55.9	45.8	12	14.8	28	50.5	29.0	0.63	− 0.68	5,748	n.	38	w.	1	6	6	14	10
Fort Maginnis	4,340	25.57	+.06	30.00	30.72	28	29.46	4	1.26	43.2	+ 4.2	74.7	23	58.3	17.4	11	32.7	57.3	40.6	11	10.6	2	65.2	31.3	1.57	+ 0.50	8,398	nw.	48	nw.	26	7	6	16	8
Helena	4,069	25.84	+.04	29.99	30.65	28	29.51	4	1.14	48.8	+ 6.8	78.0	20	60.4	27.5	17	38.2	50.5	32.5	12	10.0	2	44.2	24.9	0.56	− 0.93	5,941	sw.	30	sw.	1	6	13	15	2
Poplar River	2,030	27.89	+.08	30.03	30.82	28	29.42	25	1.40	38.6	− 2.4	84.3	24	52.8	− 4.5	2	26.5	88.8	46.8	24	9.0	28	70.9	28.8	0.78	+ 0.08	6,615	n.	40	nw.	17	7	3	17	10
Cheyenne	6,105	24.04	+.11	30.03	30.58	28	29.42	25	1.16	47.8	+ 7.8	76.3	21	61.2	24.6	28	34.4	51.7	40.5	20	8.2	28	37.0	14.2	0.94	− 0.35	8,627	nw.	48	nw.	4	4	4	12	14
Laramie	.....	.....	.....	.....	.....	..	.....	..	....	51.6	.....	84.5	21	69.3	22.0	3	33.9	59.9	53.0	20	8.8	28	....	.....	0.30	....	.....	nw.	...	.....	..	2	..	..	..
North Platte	2,841	27.12	+.11	30.06	30.56	11	29.45	4	1.11	52.1	+ 4.1	88.9	21	67.9	26.2	28	37.0	62.7	48.0	21	9.2	27	55.0	32.0	2.36	+ 0.40	8,526	se.	48	n.	16	6	3	17	10
Rapid City	.....	26.64	.....	.....	.....	..	.....	..	....	49.6	.....	84.0	21	64.0	20.0	11	34.6	64.0	44.4	12	14.0	28	58.7	33.2	0.41	....	7,732	nw.	46	sw.	24	6	6	12	12
Fort Washakie	.....	24.47	.....	.....	.....	..	.....	..	....	48.8	.....	76.0	21	63.1	26.4	29	34.6	49.6	38.8	12	13.7	1	52.7	30.4	0.64	....	4,674	sw.	42	sw.	30	3	3	10	17
Fort McKinney	.....	25.00	.....	.....	.....	..	.....	..	....	48.0	.....	77.0	21	25.2	23.0	28	37.2	54.0	34.0	16	4.0	17	56.0	31.2	0.73	....	7,565	w.	48	.....	28	6	5	12	12
Fort Robinson	.....	.....	.....	.....	.....	..	.....	..	....	51.1	.....	85.0	21	69.3	20.1	28	32.9	64.9	48.9	13	19.9	9	....	.....	0.84	....	.....	e.	...	.....	..	6	..	..	..
Middle slope.										**56.3**	**+ 4.5**														**2.69**	**+ 0.41**									
Colorado Springs	.....	.....	.....	.....	.....	..	.....	..	....	51.5	.....	80.0	21	65.8	27.0	29	36.9	53.0	42.7	20	7.4	28	44.9	25.6	1.51	....	.....	.....	...	.....	..	4	5	16	9
Denver	5,281	24.79	+.13	29.99	30.58	28	29.38	25	1.20	53.2	+ 6.2	80.6	21	67.0	30.0	28	39.5	50.6	39.8	12	7.1	27	41.3	24.4	1.71	− 0.40	5,714	s.	40	sw.	7	5	4	12	14
Pike's Peak	14,134	17.81	.....	30.05	30.53	28	29.56	25	0.97	20.8	.....	38.0	21	28.3	1.8	28	15.4	36.2	22.5	12	6.4	27	74.6	13.1	2.09	− 1.66	13,756	w.	75	w.	1	12	1	17	12
Las Animas	3,899	26.06	+.11	29.97	30.52	12	29.48	25	1.04	56.7	+ 6.7	87.5	22	72.6	31.0	29	41.5	56.5	50.0	22	11.0	28	44.5	29.4	2.59	+ 1.16	6,586	e.	48	n.	9	5	6	10	14
Concordia	1,384	28.61	.....	30.07	30.62	12	29.48	4	1.14	55.7	+ 5.7	92.6	21	69.7	28.3	12	43.1	64.3	47.3	21	7.3	29	56.3	38.2	0.65	− 2.02	8,237	se.	54	s.	4	6	8	12	10
Dodge City	2,524	27.45	+.14	30.08	30.66	12	29.55	4	1.11	56.9	+ 3.9	89.8	22	71.7	31.0	29	43.4	58.8	49.7	1	9.2	8	69.0	45.1	4.08	+ 2.69	10,357	s.	66	se.	26	10	6	9	15
Fort Reno	.....	.....	.....	.....	.....	..	.....	..	....	62.6	.....	95.0	1	76.1	34.3	30	49.1	60.7	....	..	....	..	....	.....	2.41	− 0.07	.....	s.	...	.....	..	7	..	..	..
Fort Supply	.....	.....	.....	.....	.....	..	.....	..	....	61.6	.....	88.2	24	76.6	37.1	29	46.7	51.1	40.6	1	12.2	29	....	.....	4.73	+ 0.96	.....	se.	...	.....	..	9	..	..	..
Fort Elliott	2,650	27.30	+.13	30.00	30.48	12	29.66	9	0.82	59.0	0.0	88.0	1	72.0	37.4	30	47.0	50.6	37.2	14	7.0	8	63.5	44.2	2.69	+ 0.55	10,825	se.	48	n.	17	8	8	12	10
Southern slope.										**63.2**	**+ 1.9**														**2.92**	**+ 1.55**									
Fort Sill	1,200	28.82	+.12	30.07	30.46	12	29.67	9	0.79	62.7	+ 1.7	92.2	1	74.4	36.5	3	51.2	55.7	45.7	1	10.0	27	72.6	52.5	3.63	+ 1.30	9,154	s.	48	s.	26	10	7	8	15
Abilene	1,748	28.24	.....	30.05	30.45	12	29.66	8	0.79	65.4	+ 2.4	92.0	3	75.6	41.5	30	55.8	50.5	34.6	3	7.3	28	76.9	56.4	5.16	+ 3.10	8,664	sw.	60	se.	27	8	8	15	7
Fort Davis	4,928	25.21	+.06	29.99	30.41	12	29.64	26	0.77	61.5	+ 1.5	84.0	4	74.1	36.0	13	50.0	48.0	35.8	1	10.0	19	49.5	36.7	1.21	+ 0.71	5,109	sw.	36	sw.	26	11	4	11	15
Fort Stanton	6,154	23.99	.....	29.89	30.21	12	29.53	26	0.68	52.8	.....	73.5	15	65.6	31.0	29	39.1	42.5	37.8	3	4.8	20	41.3	25.8	1.69	+ 1.10	4,958	w.	30	sw.	17	8	4	13	13
Southern plateau.										**61.8**	**+ 5.4**														**0.38**	**− 0.04**									
El Paso	3,764	26.23	+.04	29.96	30.31	12	29.63	26	0.68	66.9	+ 3.9	86.8	16	80.4	44.0	28	52.2	42.8	38.0	3	17.0	19	41.6	40.1	0.74	+ 0.57	4,253	w.	36	n.	26	1	1	5	24
Lava	.....	.....	.....	.....	.....	..	.....	..	....	59.0	.....	85.0	15	74.9	37.9	28	43.2	47.1	41.9	2	13.4	27	....	.....	0.45	+ 0.28	.....	sw.	...	.....	..	7	..	..	..
Santa Fé	7,026	23.31	+.11	30.02	30.43	12	29.73	25	0.70	49.9	+ 4.9	72.5	15	61.9	29.0	28	39.3	43.5	30.2	13	12.0	26	47.4	27.1	1.42	+ 0.73	4,428	e.	26	e.	17	10	10	12	8
Fort Apache	5,020	.....	.....	.....	.....	..	.....	..	....	54.4	.....	83.0	14	74.9	30.0	3	38.2	53.0	46.5	3	24.7	8	....	.....	0.71	− 0.08	.....	ne.	...	.....	..	7	..	..	..
Fort Bowie	.....	.....	.....	.....	.....	..	.....	..	....	62.4	.....	80.5	17	73.3	40.5	27	51.4	40.0	....	..	....	..	....	.....	T.	− 0.08	.....	sw.	...	.....	..	..	..	..	..
Fort Grant	4,910	25.21	.....	29.98	30.19	12	29.76	26	0.43	61.5	.....	82.4	15	73.0	40.8	27	50.8	41.6	30.4	15	12.0	18	30.6	28.8	0.50	....	5,024	n.	40	se.	13	1	3	10	17
Fort McDowell	.....	.....	.....	.....	.....	..	.....	..	....	71.2	.....	99.0	30	90.4	41.0	1	51.9	58.0	47.0	3	21.0	25	....	.....	0.14	− 0.18	.....	w.	...	.....	..	3	..	..	..
Fort Thomas	2,710	.....	.....	.....	.....	..	.....	..	....	66.2	.....	91.1	30	83.7	38.4	10	49.3	52.7	44.0	30	27.7	12	....	.....	0.37	+ 0.11	.....	s.	...	.....	..	5	..	..	..
Fort Verde	.....	.....	.....	.....	.....	..	.....	..	....	63.4	.....	90.3	14	81.6	35.0	27	45.2	55.3	45.3	14	22.2	20	....	.....	0.43	− 0.27	.....	sw.	...	.....	..	5	..	..	..
Phœnix	.....	.....	.....	.....	.....	..	.....	..	....	70.9	.....	95.0	13	85.8	47.0	1	56.0	48.0	38.0	11	21.0	3	....	.....	0.01	....	.....	.....	...	.....	..	2	..	..	..
Prescott	5,389	24.75	+.08	29.99	30.24	6	29.74	25	0.50	55.3	+ 6.3	78.5	14	70.1	31.3	26	39.6	47.2	38.5	29	17.5	4	57.4	38.2	0.52	− 0.55	5,020	sw.	40	sw.	24	6	2	18	10
San Carlos	.....	.....	.....	.....	.....	..	.....	..	....	66.6	.....	92.0	16	83.7	36.0	1	48.7	56.0	44.5	1	15.5	20	....	.....	0.0	− 0.21	.....	s.	...	.....	..	0	..	..	..
Willcox	.....	.....	.....	.....	.....	..	.....	..	....	61.6	.....	88.8	16	81.0	32.0	28	42.3	56.8	49.0	2	24.1	21	....	.....	0.03	+ 0.01	.....	w.	...	.....	..	2	..	..	..
Yuma	141	29.76	.00	29.93	30.11	6	29.68	16	0.43	75.3	+ 6.3	101.7	12	90.4	47.0	1	57.7	54.7	40.3	11	19.6	7	37.0	43.4	T.	− 0.11	4,660	w.	40	w.	25	0	0	5	25
Keeler	3,622	26.32	.....	29.92	30.14	12	29.57	30	0.57	63.4	.....	85.8	13	75.1	39.0	25	51.3	46.8	30.1	13	15.2	24	33.5	32.3	0.12	− 0.67	4,501	s.	42	nw.	16	2	0	15	15
Middle plateau.										**55.0**	**+ 7.6**														**0.59**	**− 1.13**									
Fort Bidwell	4,615	25.43	.....	30.08	30.37	11	29.75	3	0.62	51.6	.....	81.2	20	66.1	24.2	9	36.7	57.0	37.8	9	13.9	4	61.6	36.9	0.16	....	4,606	w.	36	sw.	2	3	2	12	16
Winnemucca	4,344	25.68	+.11	30.05	30.35	28	29.60	30	0.75	54.6	+ 7.6	83.2	20	68.1	21.0	5	35.2	62.2	49.0	18	15.2	25	25.9	13.6	0.20	− 0.96	6,806	w.	38	w.	30	3	1	12	17
Brock's Ranch	.....	.....	.....	.....	.....	..	.....	..	....	54.6	.....	88.3	20	72.9	27.2	3	36.2	61.1	48.4	20	17.7	25	....	.....	0.25	....	.....	w.	...	.....	..	11	..	..	..
Salt Lake City	4,348	25.65	+.08	30.00	30.36	12	29.49	25	0.87	55.5	+ 7.5	80.1	22	66.7	31.1	5	42.9	49.0	32.5	15	11.6	16	43.2	30.2	0.99	− 1.63	4,150	nw.	30	s.	24	5	2	11	17
Montrose	5,780	24.31	.....	29.95	30.35	12	29.54	25	0.81	53.0	.....	76.0	21	66.4	28.8	29	38.5	47.2	37.5	13	9.7	8	46.8	30.7	0.42	− 1.65	5,049	se.	40	s.	25	8	8	9	13
Fort Bridger	6,643	23.55	.....	30.05	30.43	12	29.46	25	0.97	44.3	.....	72.1	21	57.7	26.0	29	32.6	46.1	40.2	18	10.2	4	54.7	27.9	0.75	− 0.28	4,869	w.	42	sw.	30	6	6	17	7
Carson City	.....	.....	.....	.....	.....	..	.....	..	....	53.8	.....	82.4	21	68.0	20.7	5	36.0	61.7	42.3	20	12.1	24	38.4	25.3	0.18	....	.....	.....	...	.....	..	1	0	5	25
Northern plateau.										**55.4**	**+ 6.0**														**0.40**	**− 1.48**									
Boisé City	2,750	27.20	+.07	30.03	30.41	28	29.58	3	0.83	56.5	+ 7.5	88.1	25	71.2	25.0	5	40.0	63.1	39.7	15	16.3	1	46.0	33.9	0.12	− 2.12	3,328	w.	40	e.	15	3	4	16	10
Ashland	.....	.....	.....	.....	.....	..	.....	..	....	55.6	.....	87.0	19	71.5	28.0	9	39.7	59.0	46.0	11	16.0	30	....	.....	1.01	− 1.21	.....	n.	...	.....	..	7	..	..	..
Fort Klamath	.....	.....	.....	.....	.....	..	.....	..	....	45.9	.....	78.0	19	62.4	18.0	9	29.4	60.0	47.0	18	13.0	1	....	.....	0.41	....	.....	w.	...	.....	..	5	..	..	..
Lakeview	.....	.....	.....	.....	.....	..	.....	..	....	50.1	.....	81.5	19	63.3	26.0	26	36.9	55.5	38.5	18	21.0	25	....	.....	0.02	− 1.58	.....	s.	...	.....	..	2	..	..	..
Linkville	.....	.....	.....	.....	.....	..	.....	..	....	50.8	.....	80.1	19	65.5	24.3	5	36.0	55.8	38.9	12	18.9	3	....	.....	0.20	− 1.90	.....	nw.	...	.....	..	1	..	..	..
Spokane Falls	1,909	28.01	+.06	30.03	30.45	11	29.58	3	0.87	51.5	+ 4.5	79.9	20	63.6	27.3	17	38.2	52.6	42.1	19	13.0	8	60.3	36.6	0.39	− 1.12	4,386	sw.	30	sw.	4	6	14	15	1
Walla Walla	1,018	28.98	+.06	30.08	30.42	11	29.67	3	0.75	58.1	+ 6.1	85.0	19	69.3	36.2	10	46.4	48.8	35.1	11	10.3	8	41.5	33.0	0.69	− 0.93	5,165	sw.	45	sw.	4	5	4	22	4
N. Pac. coast region.										**51.6**	**+ 3.8**														**2.00**	**− 1.25**									
Fort Canby	179	29.92	.....	30.12	30.35	10	29.72	3	0.63	49.1	.....	64.5	18	54.8	39.5	16	44.3	25.0	20.0	11	4.7	26	81.8	43.4	3.53	....	8,454	s.	54	s.	7	16	10	16	4
Neah Bay	.....	.....	.....	.....	.....	..	.....	..	....	48.2	.....	63.0	30	56.3	31.0	27	40.2	32.0	....	..	....	..	....	.....	7.79	....	.....	sw.	...	.....	..	20	..	..	..
Olympia	36	30.08	+.09	30.12	30.37	11	29.68	3	0.69	50.4	+ 2.4	78.8	19	61.1	31.0	16	40.6	47.8	40.6	19	7.5	26	76.4	42.8	1.72	− 2.08	2,727	s.	24	sw.	4	13	12	10	8
Port Angeles	14	30.08	+.07	30.09	30.34	10	29.58	3	0.76	46.1	+ 2.1	61.3	19	52.7	29.6	9	38.4	31.7	23.5	19	6.0	30	83.3	41.0	1.56	0.00	3,434	s.	30	w.	4	11	13	16	1
Pysht	.....	.....	.....	.....	.....	..	.....	..	....	46.3	.....	62.0	19	52.9	31.0	27	39.8	31.0	21.0	19	5.5	30	....	.....	4.49	....	.....	sw.	...	.....	..	21	..	..	..
Tatoosh Island	86	30.00	.....	30.09	30.35	10	29.61	3	0.74	46.5	.....	59.7	22	51.6	34.0	4	43.3	25.7	14.8	22	3.8	13	89.8	43.5	5.92	....	9,055	sw.	45	w.	4	23	19	11	0
Astoria	.....	30.08	.....	30.10	30.34	8	29.70	3	0.64	50.6	+ 5.6	66.0	22	58.1	36.0	9	43.4	30.0	23.5	16	6.0	7	81.4	44.8	4.04	− 0.32	3,926	sw.	28	sw.	28	20	18	5	7
Portland	80	30.04	+.08	30.13	30.36	9	29.77	3	0.59	55.0	+ 4.0	83.5	19	66.5	32.0	9	44.1	51.5	35.7	11	11.5	8	70.1	44.2	2.06	− 1.36	3,751	nw.	22	s.	30	13	15	8	7
Roseburg	523	29.57	+.05	30.13	30.34	8	29.82	3	0.52	56.0	+ 5.0	83.8	19	69.0	29.0	9	42.0	54.8	43.0	17	11.0	4	65.0	42.8	0.63	− 2.47	2,640	n.	36	sw.	23	7	8	11	11
Mid. Pac. coast reg.										**59.1**	**+ 3.1**														**0.25**	**− 2.61**									
Eureka	.....	30.09	.....	30.14	30.33	27	29.88	3	0.45	50.9	− 3.1	68.0	23	56.9	38.6	7	46.4	29.4	19.2	23	3.4	29	80.9	45.0	1.05	....	4,240	n.	33	sw.	23	10	9	15	6
Red Bluff	342	29.67	+.02	30.02	30.27	6	29.80	30	0.48	67.0	+ 8.0	93.1	21	80.1	40.7	2	51.7	52.4	38.5	10	18.0	4	53.7	48.0	0.53	− 2.28	4,355	s.	26	nw.	30	2	0	12	18
Sacramento	64	29.95	.00	30.02	30.27	6	29.81	16	0.46	62.3	+ 5.3	89.0	14	76.7	42.7	25	49.2	46.3	33.0	20	16.9	24	65.0	49.2	0.10	− 3.28	4,140	sw.	24	sw.	23	2	2	5	23
San Francisco	60	30.01	+.03	30.08	30.31	6	29.90	16	0.41	56.2	+ 2.2	87.7	14	65.9	46.0	7	49.8	41.7	33.5	14	8.3	24	73.9	47.3	0.11	− 2.27	7,030	w.	36	w.	30	2	3	13	13
S. Pac. coast region.										**61.4**	**+ 3.8**														**0.11**	**− 1.48**									
Fresno	313	29.68	.....	30.01	30.23	6	29.73	16	0.50	67.1	.....	97.5	14	81.9	40.9	6	50.3	56.6	43.4	11	19.3	24	56.6	49.4	0.22	....	3,862	nw.	20	nw.	25	2	0	7	23
Los Angeles	339	29.66	.00	30.02	30.22	6	29.87	13	0.35	61.9	+ 4.9	99.0	13	74.4	44.0	25	52.0	55.0	43.0	11	8.8	16	75.2	52.9	0.12	− 2.05	4,154	w.	28	w.	25	3	8	8	14
San Diego	67	29.96	.00	30.03	30.21	6	29.86	12	0.35	60.8	+ 2.8	93.0	12	61.8	47.0	6	54.7	45.8	35.8	12	6.4	25	79.8	54.1	0.10	− 0.91	3,918	nw.	24	nw.	25	12	9	9	9

NOTE.—The data at Pike's Peak, Colo., and stations having no departures are not used in computing the district averages.