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INTRODUCTION.

This REVIEW is based on reports for May, 1891, from 2,461 regular and voluntary observers. These reports are classified as follows: 171 reports from Signal Service stations; 118 reports from United States Army post surgeons; 1,584 monthly reports from state weather service and voluntary observers; 28 reports from Canadian stations; 191 reports through the Central Pacific Railway Company; 369 marine reports through the co-operation of the Hydrographic Office, Navy Department; marine reports through the "New York Herald Weather Ser-

vice;" monthly reports from the local weather services of Alabama, Arkansas, Colorado, Illinois, Indiana, Iowa Weather and Crop Service, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New England, New Jersey, New York, North Carolina, North and South Dakota, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, and Wisconsin, and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR MAY, 1891.

The month was the coolest May on record at a number of stations in the south Atlantic and west Gulf states, the Ohio Valley, and southwest Arizona. The only districts in which the month was warmer than usual were the Canadian Maritime Provinces, the north Pacific coast, the greater part of the middle and northern plateau regions, and from the middle plateau northeast to Lake Superior. The highest maximum temperature reported by regular stations of the Signal Service was 100° at Yuma, Ariz., and Columbia, S. C., and by a voluntary observer, 110°, at Volcano Springs, Cal. At Bismarck, N. Dak., the maximum temperature was 1° higher than previously reported for May. The lowest minimum temperature reported by a regular station of the Signal Service was 15°, at Fort McKinney, Wyo., and by a voluntary observer, 1°, at Breckenridge, Colo. At a number of stations in the Atlantic coast states, the lower lake region, the upper Ohio valley, south Louisiana, east Texas, south Kansas, and the extreme northwest, the minimum temperature was lower than previously reported for May. Unusually cold weather prevailed east of the Mississippi and Missouri rivers from the 5th to 7th; in Kansas on the 11th; and from western New York to Michigan on the 17th. From the 5th to 7th killing frost occurred east of the Mississippi River as far south as Tennessee and North Carolina; on the 11th in Nebraska; on the 13th in Kansas; on the 17th in West Virginia, Michigan, and Iowa; and on the 27th in Ohio and New York, its occurrence in the districts named being two to seven weeks later than usual.

The monthly precipitation was the heaviest ever reported for May at Santa Fé, N. Mex., Fort Grant, Ariz., Winnemucca, Nev., and Fort Assiniboine, Mont., and it was the least ever reported for May at Eastport, Me., Wilmington, N. C., Mobile, Ala., Chattanooga, Tenn., Cincinnati, Ohio, Rochester, N. Y., Marquette, Mich., Moorhead, Minn., and Neah Bay, Wash. East of the Rocky Mountains the precipitation was generally deficient, except in the interior of the south Atlantic states, the greatest deficiency, 4.00 to 5.00 inches, being noted over south Louisiana and east Texas. Over the Rocky Mountain and plateau regions and on the middle Pacific coast the precipita-

tion was generally in excess of the average. Over the southern plateau region more than three times the usual amount of precipitation was reported, and on the northeast slope of the Rocky Mountains, over the middle plateau region, and along the middle Pacific coast the precipitation averaged about one-fourth greater than usual. At Key West, Fla., less than one-tenth of the usual precipitation fell, and in New England, the east and west Gulf states, the Ohio Valley and Tennessee, the Lake region, the upper Mississippi valley, and the northern plateau region the monthly precipitation averaged from one-fourth to one-half of the average amount for May. In western North Carolina the excessive rains of the latter part of the month damaged crops. In central New Mexico the month was reported the wettest May since 1866. In southwestern California some damage was caused to hay and grain by the rains of the middle part of the month. Very dry weather prevailed generally in the Mississippi and middle Missouri valleys, and thence eastward to the Atlantic coast. In the Ohio Valley and thence over Iowa, Minnesota, and the Dakotas, the drouth was broken by rains of the 18th to 21st.

On the 2d a severe storm visited Paducah, Ky., injuring a number of persons and damaging many buildings; and a severe local storm was reported near Goodrich, Kans. On the 4th a small whirling storm occurred at New Orleans, La. On the 20th a tornado moved eastward over Boone and Audrain counties, Mo., killing 4 persons, injuring 35 or more, and destroying property to the estimated value of over \$100,000, and destructive hail storms occurred in Missouri, Illinois, Kansas, Oklahoma Territory, and Arizona.

High water, due largely to melting snow in the mountains of southern Colorado, prevailed along the Rio Grande River in New Mexico and west Texas during the first half of the month, causing great destruction of property, etc., and the Pecos River was the highest ever known. The lower Mississippi river subsided and fell below the danger-line at Vicksburg, Miss., on the 15th, and at New Orleans, La., on the 22d. Destructive forest fires occurred in the pine and cranberry districts of south New Jersey; in the mountains of Pennsylvania and southeast New York; the upper part of lower Michigan; and about Duluth, Minn., and Superior, Wis.