

# MONTHLY WEATHER REVIEW.

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BOARD OF EDITORS { Mr. Horace E. Smith, Chief Clerk Weather Bureau,  
Professors Henry A. Hazen, Thomas Russell, and Charles F. Marvin, and  
Mr. Edward B. Garriott, in charge of Review Room.

## INTRODUCTION.

This REVIEW is based on reports for August, 1891, from 2,575 regular and voluntary observers. These reports are classified as follows: 159 reports from Weather Bureau stations; 118 reports from United States Army post surgeons; 1,694 monthly reports from state weather service and voluntary observers; 34 reports from Canadian stations; 173 reports through the Central Pacific Railway Company; 397 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 Dakota, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, Washington, and Wisconsin, and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

## CHARACTERISTICS OF THE WEATHER FOR AUGUST, 1891.

The month was warmer than usual, except in the central river valleys and along the Saint Lawrence River, and on the Pacific coast it was the warmest August on record. Attending a warm wave which extended from the upper Missouri valley to New England and the middle Atlantic states from the 7th to 10th the maximum temperature was the highest ever noted for August at stations in the upper Mississippi valley, the middle lake region, eastern New York, and southern New England, and during a period of warm weather on the Pacific coast during the third decade of the month the temperature was the highest ever reported for August in northern California, Oregon, and Washington.

<sup>L<sup>o</sup>M</sup> During a cool wave which extended eastward from the Rocky Mountains to the Atlantic coast from the 22d to the 29th, the temperature was the lowest ever noted for August from the Lake region and the Dakotas to the Gulf of Mexico, and heavy frost was reported from the middle and northeast slopes of the Rocky Mountains to western New York.

### PRECIPITATION.

The monthly precipitation was greatest in areas from the lower Missouri valley to the south Atlantic and Florida coasts, where it exceeded 8.00 inches, and in parts of the south Atlantic states, Florida, Iowa, and Missouri it was more than 10.00 inches. Over the greater part of California, and at stations in the plateau region, no rainfall was reported. The areas of excess and deficiency were generally small and irregularly distributed. The greatest excess occurred in the south Atlantic states and southern Florida, where it was 4.00 to 5.00 inches, and the most marked deficiency on the middle Gulf coast, where it was 4.00 to 8.00 inches. At Wilmington, N. C., Statesburgh, S. C., Key West, Fla., Forsyth, Ga., Keokuk, Iowa, and Denver, Colo., the monthly precipitation was the greatest, and at Pensacola, Fla., Lead Hill, Ark., and Concordia, Kans., it was the least ever reported for August. Snow

was reported in the Paradise Mountains, Nevada, on the 6th, in the mountains of Colorado during the cool wave of the third decade of the month, in northwestern Wisconsin on the 22d and 23d, and at Buffalo, N. Y., on the 28th.

### STORMS.

Numerous local storms attended the passage of the low areas, their occurrence being most frequently reported in the states of the middle and upper Mississippi and lower Ohio valleys, Michigan, New Jersey, North Carolina, Georgia, and Texas. Many of these storms were destructive to life and property, and in a number of instances, notably at Ellsworth, Minn., on the 13th, at Elizabethtown, Ind., on the 15th, and at Hansford, Tex., on the 21st, they exhibited tornadic features. The night of the 18th a cyclone devastated the Island of Martinique, Windward West Indies, and reports indicate that about seven hundred persons were killed, many injured, and that property to the value of about \$10,000,000 was destroyed. A storm of marked strength moved northward east of Bermuda on the 27th.

### FLOODS.

Floods in rivers and streams were reported in Arkansas and Mississippi on the 2d, in south-central Nebraska on the 17th, in Macon county, Missouri, on the 21st, along the Schuylkill River, near Reading, Pa., on the 23d and 24th, in Baldwin county, Georgia, on the 26th, in eastern New York on the 27th, and along the Savannah River, Georgia, on the 27th and 28th.

### DROUGHT.

Drought injured vegetation in southeastern Massachusetts, Rhode Island, Connecticut, about Micco, Fla., in parts of Alabama, Mississippi, Louisiana, southern Texas, northern Arkansas, central New Mexico, southeastern Arizona, in northwestern and eastern Kansas, and central and northwestern Wisconsin.

### AURORAS.

Well-defined auroral displays were reported over the northern part of the country from New England to Washington the night of the 28-29th.