

MONTHLY WEATHER REVIEW.

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BOARD OF EDITORS { Mr. Horace E. Smith, Chief Clerk Weather Bureau,
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INTRODUCTION.

This REVIEW is based on reports for December, 1891, from 2,455 regular and voluntary observers. These reports are classified as follows: 159 reports from Weather Bureau stations; 118 reports from United States Army post surgeons; 1,581 monthly reports from state weather service and voluntary observers; 32 reports from Canadian stations; 158 reports through the Cen-

tral Pacific Railway Company; 407 marine reports through the co-operation of the Hydrographic Office, Navy Department; marine reports through the "New York Herald Weather Service;" monthly reports from local weather services established in all states and territories, except Idaho, and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR DECEMBER, 1891.

The month was warmer than usual in districts east of the Rocky Mountains, and from eastern Pennsylvania and eastern New York over New England the mean temperature was the highest ever noted for December. Over the plateau region and along the Pacific coast the mean temperature was below the normal, and at stations in the middle and southern plateau regions and on the middle and south Pacific coasts the month was the coldest December on record. The principal cold wave of the month appeared on the north Pacific coast on the 24th, and reached the Atlantic coast the night of the 26th. The temperature fell below freezing on the Pacific slope, except at points along the immediate coast, and was below -20° in the Red River of the North Valley. The line of zero temperature extended from central New Mexico to Upper Michigan, and the line of freezing weather reached the Gulf coast and northern Florida. The minimum temperatures attending this cold wave were the lowest ever recorded for December over the southwestern districts, and tender vegetation, oranges, and nursery stock were injured in southern California and Arizona.

PRECIPITATION.

The monthly precipitation was in excess of the December average from the north Pacific coast to the west Gulf states, from the southeast slope of the Rocky Mountains to the Lake Superior region, and from Mississippi northeastward over New York and southern New England, the greatest excess being noted on the north Pacific coast, where it was 4.00 to 6.00 inches. Over the north-central districts, west of the Lake region, in extreme southwest, southeast, and northeast parts of the country, and from the middle Mississippi valley to eastern Ontario the monthly precipitation was deficient, the most marked deficiency appearing on the south Atlantic and south Pacific coasts, where it was more than 2.00 inches. At points

in northwest Washington, west Oregon, north Kansas, north Iowa, southeast Minnesota, and central Pennsylvania the monthly precipitation was the greatest on record for December, and at Fort Assinaboine, Mont., the amount, 0.08 inch., corresponded with the least December precipitation, noted in 1881. More than 100 inches of snow fell at stations on the line of the Central Pacific Railroad crossing the summit of the Sierra Nevada Mountains, and the monthly snowfall was slightly less than that amount in the mountains of Colorado. Over the eastern part of the country the snowfall was very deficient, and in New England and the middle Atlantic states the amount was insufficient to afford protection to grass and grain.

STORMS.

The storms of the north Atlantic Ocean were generally of slight intensity over the western part of the ocean, but developed great energy after leaving American waters. The most destructive of these storms visited the British Isles between the 6th and 12th, causing loss of life and much damage to property and shipping. A remarkable succession of cyclonic areas from the north Pacific Ocean caused unusually stormy weather on the north Pacific coast, and during the latter part of the month the storms which visited that region were notably persistent and severe. On the 3d destructive storms occurred from the north-central districts to the Gulf States, and on the 4th stormy weather was general from the Mississippi Valley to the Atlantic coast. The latter part of the month was marked by storms of considerable energy in all districts, save along the middle and south Pacific coasts.

INLAND NAVIGATION.

Navigation closed at a number of ports on the Great Lakes and on the Erie Canal, and the rivers in the northern tier of states were generally frozen.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for December, 1891, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart II by isobars.

In December the pressure is usually highest over the middle plateau region and in an area covering eastern Tennessee and adjoining parts of the Carolinas and Georgia, where it is above 30.20, and is lowest over the Gulf of Saint Lawrence,