

MONTHLY WEATHER REVIEW.

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BOARD OF EDITORS { Mr. Horace E. Smith, Chief Clerk of 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 November, 1892, from 2,899 regular and voluntary observers. These reports are classified as follows: 165 reports from Weather Bureau stations; 48 reports from United States Army post surgeons; 1,961 monthly reports from state weather service and voluntary observers; 219 reports through the Central Pacific Rail-

way Company; 477 marine reports through the co-operation of the Hydrographic Office, Navy Department; 29 reports from Canadian stations; marine reports through the "New York Herald Weather Service"; monthly reports from local services established in all states and territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR NOVEMBER, 1892.

The month was characterized by an unusually large number of general storms. On the north Pacific coast heavy rain from the 17th to 23d caused great damage by flood, and from the 24th to 30th unusually severe gales and exceptionally heavy rain prevailed over a great part of California. The first heavy frost of the season occurred at Jacksonville, Fla., on the 12th, and at Olympia, Wash., on the 20th. Low temperature from the 9th to the 13th damaged cotton in parts of Arkansas and Louisiana. The Mississippi River was frozen from Keokuk, Iowa, northward, and the Missouri River was closed by ice in North and South Dakota. Drought prevailed in Ohio and Arizona. Meteoric displays were reported throughout the country the night of the 23d.

TEMPERATURE.

The month was warmer than usual in the Rocky Mountain and plateau regions, along the Pacific coast, and over the Canadian Maritime Provinces, the greatest excess in temperature, 4°, being noted over the northern plateau region and in New Brunswick. Over the eastern half of the United States and in the Northwest the temperature was below the normal, the most marked deficiency being noted in the western Saskatchewan and upper Mississippi valleys, where the mean readings were 4° to 6° below the November average. At points in North Carolina, South Carolina, and northern Georgia the cold wave of the 24-25th was attended by the lowest temperature recorded for November.

PRECIPITATION.

The monthly precipitation was unusually heavy on the Pacific coast, where the total rainfall was about double the November average. There was also a marked excess in the middle Mississippi valley, on the south New England coast, and in Nova Scotia. The most marked deficiency was noted

over Florida, along the immediate south Atlantic coast, and in central Texas, where the monthly precipitation was 2.00 inches less than the average. The heaviest snowfall was reported along the line of the Central Pacific Railway crossing the summit of the Sierra Nevada Mountains, where a depth of 70 inches was noted.

STORMS.

On the 1st heavy snow impeded travel in Colorado. The early morning of the 6th a destructive tornado visited Galveston Island, Tex.; one life was lost, and property was destroyed to the estimated value of \$10,000. On the same date a heavy snowstorm occurred in eastern Montana and the Dakotas, and a gale prevailed over the Great Lakes. On the 7th heavy gales prevailed over the lower lakes.

The night of the 16th a destructive tornado occurred in Boone county, Ark.; 3 persons were reported killed; 50 injured; and the damage to property was estimated at \$100,000. Severe local storms occurred in Missouri on that date.

The early morning of the 17th a tornado visited Red Bud, Ill.; 2 persons were reported killed and 7 injured; 82 buildings were destroyed; and the loss of property was placed at about \$100,000. On that date destructive local storms occurred in Ohio, Missouri, Louisiana, and Mississippi; heavy wind, with rain or snow, prevailed in Arkansas, Tennessee, Kentucky, Missouri, Iowa, Ohio, and Washington, and heavy gales prevailed over the Great Lakes.

On the 18th high winds prevailed over New England, New York, and the middle Atlantic states. On the 24th and 25th a heavy snowstorm, with high wind and low temperature, prevailed in the Northwest. On the 29th a strong gale, with rain changing to snow, occurred along the New England coast and over Long Island.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for November, 1892, 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 November the normal pressure is highest over the

middle plateau region, where it is above 30.20; it is above 30.15 over the interior of the middle and east Gulf and south Atlantic states. The normal pressure for November is lowest over the Gulf of Saint Lawrence, where it is below 30.00. There is usually an increase of pressure over the United