

STORMS AND WEATHER WARNINGS.

WASHINGTON FORECAST DISTRICT.

Storm warnings.—A storm of decided intensity was central over eastern Minnesota and moving eastward at 8 p. m. of the 1st, with rapidly falling pressure to the eastward, and southwest storm warnings were ordered displayed at 10 p. m. from Delaware Breakwater to Eastport, Me. These warnings were fully verified, the highest velocity reported being 52 miles an hour from the southwest at Atlantic City, N. J.

At 8 p. m. of the 6th a disturbance of considerable intensity was centered over Georgia and it was followed by a decided rise in pressure over the west Gulf States. Northwest storm warnings were displayed at 10 p. m. from Jacksonville, Fla., to Fort Monroe, Va. The following morning they were extended northward to Boston, Mass., and at 9.30 p. m. to Eastport, Me. They were fully verified, several stations reporting maximum velocities in excess of 50 miles an hour.

Northeast storm warnings were ordered displayed at 2 p. m. of the 12th in connection with the very rapid movement of a disturbance from the middle Mississippi Valley to the lower Lake region. However, no verifying velocities were reported.

A disturbance that developed over the western Gulf of Mexico during the 14th was central near the Louisiana coast at 8 p. m. of that date with a strong area of high pressure to the northeastward. As it was expected that this disturbance would move rapidly northeastward with increasing intensity, northeast storm warnings were ordered displayed at 9.30 p. m. on the east Gulf coast from Bay St. Louis, Miss., to Cedar Keys, Fla., and on the Atlantic coast from Cape Hatteras to Sandy Hook, N. J. The following morning they were extended to include the entire Atlantic and east Gulf coasts. These warnings were fully verified.

On the 23d southwest storm warnings were ordered displayed on the Atlantic coast from Washington, N. C., to Eastport, Me., in connection with a disturbance of marked intensity that moved rapidly across the southern Lake region and down the St. Lawrence Valley. The warnings were fully verified.

At 10 a. m. of the 28th northeast storm warnings were displayed on the east Gulf coast from Bay St. Louis, Miss., to Cedar Keys, Fla., and at 10 p. m. on the Atlantic coast from Charleston, S. C., to Delaware Breakwater. At this time a disturbance was forming over the western Gulf of Mexico while a strong area of high pressure covered practically the entire United States. On March 1 the warnings were extended northward to Nantucket, Mass. These warnings were only partially verified on account of the disturbance failing to develop the intensity expected.

Advisory warnings of strong winds were sent to the open ports on Lake Michigan on the 1st, 2d, 10th, 11th, 12th, 17th, 19th, 21st, 22d, 23d, and 27th.

Cold-wave warnings.—There were no widespread cold waves in the Washington Forecast District during the month. However, cold-wave warnings were issued for limited areas on 11 days, the most important being as follows:

February 12.—For Indiana, western Kentucky, western Tennessee, and extreme northern Mississippi.

February 15.—For Kentucky, Tennessee, Alabama, Georgia, northern and central Florida, and the South Carolina coast.

February 16.—For New England, eastern New York, and northeastern Pennsylvania.

February 22-23.—The southern Lake region, the Ohio Valley, Tennessee, the east Gulf States, northern New England, and northern and central New York.

The warnings of the 15th and 16th were fully verified and the others only partially so.

Frost warnings.—Frost warnings were issued for Mississippi on the 6th and for the east Gulf and south Atlantic States as far south as the interior of southern Florida on the 7th, 8th, and 16th.—*Charles L. Mitchell.*

CHICAGO FORECAST DISTRICT.

The month was marked by frequent movement of low-pressure areas across the forecast district, but until near the close of the third week these disturbances were attended by light precipitation because they took a northerly route. On this account, also, the mean temperature was above normal for the month, except in the northwestern States where severe cold prevailed for a long period.

The first storm, which was attended by general precipitation and which took a middle route across the Chicago district, first appeared in the Pacific Coast Region on the 18th and 19th, reaching the Great Lakes region by the morning of the 23d, accompanied by rain, snow, and sleet, and shifting gales, and followed by a sharp fall in temperature. This storm only partially broke the prolonged drouth in the winter wheat section of the Southwest, as the resulting precipitation in portions of that area was inappreciable. The snowfall accompanying this storm was especially heavy in the upper Mississippi Valley and the northern Lake region, and at several points the snow was preceded by sleet, which, together with the high winds and following snowfall, raised havoc with railroad and other means of transportation, as well as telephone and telegraph lines. The storm was especially severe in Wisconsin and eastern Minnesota, and in the Northwestern States it had all the characteristics of a "blizzard"—gales, biting cold, and snow. Forecasts of snow, or rain turning to snow, with shifting gales were made for the entire area affected well in advance of the storm, but the ensuing damage was, nevertheless, most serious, and could not be avoided.

Cold-wave warnings were issued at various times during the month, but general warnings were confined to the period from the 10th to the 12th and again from the 21st to the 23d, and these were verified at nearly every station.

Advices were sent a number of times to the live-stock interests to protect the range cattle when high winds, low temperature, and precipitation were anticipated, and, as a consequence, it is believed that there was very little loss. Under date of February 23, the observer at Rapid City, S. Dak., writes as follows:

As I am sure western South Dakota will neglect to voice any appreciation of the weather forecaster who has saved herds of cattle the past three days. I take great pleasure in informing you that the forecasts were exceedingly accurate and the means of an enormous saving of live stock. Wide distribution was given the forecasts, and if there was any loss it was surely not the fault of the Weather Bureau service.

We had a "pippin" of a blizzard here on Wednesday night and Thursday. Wires are nearly all down to-day, and trains are annulled on account of cuts being filled with drifted snow.

Forecasts for a week in advance for Montana and North Dakota were sent each Monday to the Wenatchee