

SECTION III.—FORECASTS.

STORMS AND WARNINGS FOR FEBRUARY.

By EDWARD H. BOWIE, District Forecaster.

[Dated: Washington, Mar. 13, 1915.]

The month opened with three low-pressure areas on the map; the first over Nova Scotia whence during the next 24 hours it passed from the region of observations, the second over northern Missouri, and the third on the extreme north Pacific coast. High-pressure areas were central as follows: Near Bermuda, over the northern Plains States with an extension eastward along the northern border to Quebec, and on the south Pacific coast.

The Missouri low-pressure area on the morning of the 2d showed two centers, one over southern Indiana and the other over eastern Ohio. The general disturbance advanced to the Virginia coast by the 3d and during the 24 hours following passed out to sea. General precipitation attended this disturbance over almost the entire country, heavy rains being reported from the Ohio Valley and portions of the Gulf States and heavy snow and sleet in portions of the upper Mississippi Valley, the Lake region and New England. At Yankton, S. Dak., during the 24 hours ending at noon of the 1st, the snowfall was 20 inches, the heaviest of record at this station. On the Atlantic coast high winds occurred during the 2d, 3d, and 4th, storm warnings having been previously issued.

The low area hereinbefore referred to was followed by the high which on the 1st of the month was over the northern Plains States and southern Canada. This high moved eastward along the northern border to the mouth of the St. Lawrence by the evening of the 2d, causing decided changes to colder weather and frosts along the middle and east Gulf coasts and in northern Florida, warnings of which were disseminated previously to their occurrence.

The low area that was on the extreme north Pacific coast on the 1st, passed east-northeastward to Alberta by the morning of the 2d at which time another low area of greater intensity was central on the middle Pacific coast. The Pacific coast low moved to northeastern Wyoming and during the next 24 hours a secondary developed which on the morning of the 4th was over northeastern Kansas. During the next three days it moved northeastward to eastern Quebec, while in its trough a secondary developed which, on the evening of the 2d was near Nantucket and on the following morning off the Maine coast. It passed north-northeastward during the following 24 hours. The storm was a producer of general rains. Winds of gale force occurred on the Pacific coast, storm warnings being issued before their occurrence.

This disturbance was followed by a high-pressure area that first appeared on the south Pacific coast and advanced northward and eastward to southwestern Wyoming by the 6th. On the 7th there were two centers, one over southwestern Texas and Colorado and the other over South Dakota. The southern center passed to the west Gulf coast with decreasing intensity while the northern center moved to the upper Lakes by the 9th and thence southeastward to the south Atlantic coast by the 12th. The frosts reported along the middle and east Gulf coasts and in northern Florida in connection with this high pressure were successfully announced in the forecasts.

There was a reaction to lower pressure followed by the appearance of a high over Manitoba on the 11th. This high moved eastward along the northern border to a position south of Nova Scotia by the 15th.

Following its passage a low pressure area from the north Pacific Ocean appeared on the evening of the 8th off the Washington coast. During the succeeding 12 hours it moved northward, thence moving south-south-eastward to Nevada by the 10th and by the 12th to Colorado. From Colorado it passed eastward and north-eastward to the Hudson Bay region during the next three days. An offshoot from this storm appeared on the evening of the 13th over the Rio Grande Valley and moved eastward across the Gulf of Mexico. After reaching south-eastern Florida on the evening of the 16th, it moved northeastward, passing north of the Bermudas during the 19th. In connection with these disturbances precipitation occurred over the greater part of the country. In the Missouri Valley high winds caused the snow to drift to the extent of seriously interfering with railway traffic. High winds occurred on the Pacific coast and were fully covered by warning advices. On the 12th warnings for high winds were disseminated for the Texas coast and winds of storm character occurred during the succeeding 24 hours. In connection with the low that passed across the Gulf and thence northeastward near Bermuda, warnings for moderate to fresh gales off the south Atlantic coast were issued on the morning of the 17th and, although Hatteras was the only station reporting really high winds, gales undoubtedly occurred off the coast. Warnings were issued on the 18th for the north Atlantic coast and gales occurred as indicated.

A high pressure area was on the middle Pacific coast on the 12th, passed thence northward to western Washington by the evening of the following day. It then advanced eastward and southeastward to Missouri by the 16th and thence slowly northeastward to the St. Lawrence Valley with increased intensity by the 20th and to New Brunswick by the 22d.

A secondary low-pressure area that developed over eastern Colorado moved southward to Texas by the evening of the 18th and thence northeastward to Missouri, where it lost its identity.

A high-pressure area moved from Alberta on the morning of the 18th to Manitoba by the 19th and thereafter lost its identity.

Following the disintegration of the low and high just mentioned, a development occurred over Nevada during the 18th and a low of slight intensity was over Arizona by the evening of the 19th. It moved eastward to Oklahoma during the next 24 hours and thence northeastward to northeastern Iowa by the 22d, where it disappeared during the following 12 hours. It was immediately followed by a north Pacific low area that was central on the evening of the 19th over western Oregon and moved thence southeastward during the following 48 hours to Arizona. After passing to Oklahoma it moved north-eastward to Lake Michigan by the 24th. An offshoot from this storm was central near the mouth of the Mississippi River on the 23d, whence it moved northeastward and northward up the Atlantic coast to Newfoundland by the 28th. Precipitation occurred generally through-

out the country, except in the northern Rocky Mountain region, heavy snows being reported in parts of Kansas, Iowa, and surrounding States with consequent damage to telegraph and telephone lines and delay to railway traffic. On the 24th storm warnings were ordered for the middle and north Atlantic coast and gales occurred as indicated in the advices. In connection with the passage of this disturbance, temperatures occurred at points from the lower Lake region eastward that were within a few degrees of the highest ever before recorded during the month of February.

On the evening of the 20th pressure was high over Saskatchewan and by the 22d a high pressure area was over Manitoba, whence it passed to the Canadian Maritime Provinces by the 24th. Another high-pressure area appeared over eastern Manitoba on the 24th and remained nearly stationary in that region for several days. On the 27th it was over northern Lake Superior, whence it moved southward to northeastern Texas by March 1. It later lost intensity over the lower Mississippi Valley.

On the evening of the 24th an offshoot from a low-pressure area, that was central on that morning on the north Pacific coast, was over the southern Plateau and during the following two days passed southeastward to the Valley of the Rio Grande. At the end of the month it occupied a position off the northern coast of eastern Florida,

having caused precipitation over the Pacific and Plains States and over southern districts from the Rocky Mountains eastward.

At the end of the month pressure was low off the northern coast of eastern Florida, the Grand Banks, and over the middle Plateau, while high pressure prevailed from the upper Mississippi Valley southward to Texas.

NORTHERN HEMISPHERE PRESSURE.

Alaska.—Pressure averaged above normal over western and below normal over central and eastern portions. The principal lows of the month occurred about the 3d, 6th, 10th, 14th-15th, and 18th; and highs about the 8th, 12th, and 25th. The pressure at Dutch Harbor remained above 30.00 inches, nearly one-half inch above normal, from the 10th to 16th, inclusive.

Honolulu.—Pressure averaged well above normal. Lows occurred on the 11th-12th, 15th, and 25th, none, however, being of importance. Highs occurred on the 2d-3d, 6th, 9th, 18th-20th, and 27th.

Azores.—Pressure at Horta averaged above normal. Lows occurred on the 1st, 3d, and 16th; and highs on the 8th-11th, 14th, and 17th to 20th.

Reports from Iceland and Siberia are not available.