

MONTHLY WEATHER REVIEW.

VOL. XV.

WASHINGTON CITY, JANUARY, 1887.

No. 1.

INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during January, 1887, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i. In tracing the centres of the paths of these storms, data from the reports of one hundred and eighty-three vessels have been used.

The general character of the weather over the north Atlantic Ocean during the month was seasonable, although, in instances, storms of unusual severity were encountered.

The presence of an iceberg to the northeastward of the Banks of Newfoundland on the 30th indicated a seasonable breaking up of the Arctic ice fields, and large quantities of icebergs and field-ice will doubtless move southward over the Banks during February.

On chart i for this month are traced the paths of fourteen areas of low pressure; the average number for January during the past thirteen years being 13.0. The most noteworthy atmospheric disturbances of the month occurred during the prevalence of low area number viii on the 13th and 14th, producing rain, snow, and sleet with high winds on the Lakes and thunder-storms in the south Atlantic states, Florida, and the Ohio Valley. The low area which was central in the Indian Territory and northern Texas on the morning of the 22d was attended on that and the succeeding day by thunder-storms in the Gulf States and very heavy rain in Tennessee and the lower part of the Mississippi Valley, numerous stations in these districts reporting over two inches of precipitation in twenty-four hours.

The mean temperature of the month is below the normal in Dakota, Nebraska, and over the entire eastern half of the country, except along the coast of New England and the middle Atlantic states where it is about normal; the temperature of the western part of the country has been above that of the average January.

With the exception of portions of Georgia and South Carolina, the precipitation of the month is below the normal in all parts of the country lying south of the fortieth parallel; it is also deficient in northern Idaho, northern Montana, Nebraska, Iowa, and northern Michigan.

In the preparation of this REVIEW the following data, received up to February 20, 1887, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-three Canadian stations, as telegraphed to this office; one hundred and sixty-two monthly journals; one hundred and fifty-seven monthly means from the

former, and twenty-three monthly means from the latter; two hundred and eighty-six monthly registers from voluntary observers; fifty-six monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Arkansas, Illinois, Minnesota, Mississippi, Missouri, Nebraska, New England, New Jersey, North Carolina, South Carolina, and Tennessee; and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[Expressed in inches and hundredths.]

The distribution of mean pressure for January, 1887, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

Two areas of high pressure appear on chart ii, one covers the southwestern part of Oregon and the northern and central parts of California; within this area the mean pressure of the month varies from 30.16 at Sacramento, California, to 30.19 at Roseburg, Oregon; the second area extends over Georgia and the greater part of South Carolina, Alabama, and northern Florida; within this area the pressure of the month is 30.15 or more. The mean pressure in the south Atlantic states, east Gulf states, Florida, Louisiana, and eastern Texas is 30.10 and above. Two areas of low pressure are shown on chart ii, one extends over the northern plateau region of the Rocky Mountains and exhibits a mean barometric pressure of 29.95 or less; the other covers the state of Michigan, Lake Huron, and the northern and eastern parts of Canada; over these districts the pressure is also 29.95 or less. The highest mean pressure of the month, 30.19, occurred at Roseburg, Oregon, and the lowest, 29.81, at Fort Maginpis, Montana.

The departures from the normal pressure are given in the table of miscellaneous meteorological data, and are also shown on chart iv by lines connecting stations of equal departure. The pressure of the month is normal or slightly above in the south Atlantic states, the Gulf States, Florida, Arizona, California, and southern Oregon, in all other districts of the United States it is largely below the normal. The greatest deficiencies occur in Montana, northern Idaho, and the eastern part of Washington Territory, where the departures range from .20 to .26 below the normal. The deficiencies in the middle slope, Missouri Valley, upper Mississippi valley, and the Lake region are also large, ranging from .07 at La Crosse, Wisconsin, to .14 at several stations on the lower lakes. In the extreme eastern part of Canada the pressure of the month is normal or slightly above; in the Saint Lawrence Valley and New England it averages about .08 below, the departures varying from .05 at Eastport, Maine, to .10 at Boston, Massachusetts.

As compared with the pressure of the preceding month, December, 1886, very large deficiencies occur in all parts of the United States, except in the south Atlantic states, east Gulf states, and on the Pacific slope; in these districts the pressure for January, 1887, coincides with, or is slightly above, that of the preceding month. In the northern plateau region, Mis-