

# UNITED STATES SIGNAL SERVICE

# MONTHLY WEATHER REVIEW.

VOL. XVI.

WASHINGTON CITY, MARCH, 1888.

No. 3.

## INTRODUCTION.

This REVIEW treats generally the meteorological conditions of the United States and Canada for March, 1888, and is based upon the reports of regular and voluntary observers of both countries. Descriptions of the storms that occurred over the north Atlantic Ocean are also given, and their approximate paths shown on chart i, on which also appear the distribution of icebergs and field-ice and the limits of fog-belts west of the fortieth meridian. In the vicinity of Newfoundland the aggregate quantity of ocean ice reported was largely deficient, when compared with the average for March.

The month was colder than the average in nearly all districts, the temperature departures ranging from  $4^{\circ}$  to  $10^{\circ}$  over a large part of the country. In northern New England, however, the mean temperatures were considerably above the average.

The rainfall was generally in excess of the average, although there are several areas in which it was deficient.

The severe storm of March 11-14th forms the most important feature of the month, a full report of which, with special charts showing the attending atmospheric conditions, is given herein.

In the preparation of this REVIEW the following data, received up to April 20, 1888, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at 133 Signal Service stations and 23 Canadian stations, as telegraphed to this office; 180 monthly journals and 176 monthly means from the former and 23 monthly means from the latter: 315 monthly registers from voluntary observers; 60 monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the Hydrographic Office, United States Navy, and the "New York Herald Weather Service;" monthly weather reports from the local weather services of Alabama, Arkansas, Colorado, Illinois, Indiana, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New England, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, and Tennessee, and the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

## ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean pressure for March 1888, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart-ii.

The mean pressure is greatest in the extreme northwest and over the region extending thence southeastward to the south Atlantic and east Gulf states, being 30.2, or slightly more, in the first-named districts, about 30.12 in the lower lake region, Ohio and central Mississippi valleys, and 30.15 in portions of Tennessee, Georgia, Florida, and the Carolinas. Eastward of this area of high mean pressure the barometric means fall to 29.95, or below, in northern New England and the Canadian Maritime Provinces; to the westward of the high area the mean pressure does not fall below 30.0, except over the southern Rocky Mountain districts, where a considerable area is inclosed by the isobar of 29.95. The extreme barometric means for the month are: highest, Fort Garry, Manitoba, 30.23; lowest, Sydney, N. S., 29.88; range, .35.

The departures from the normal pressure at the various Signal Service stations are given in the table of miscellaneous meteorological data. In the Rocky Mountain and Pacific coast districts the mean pressure is slightly below the normal, the deficiency not exceeding .06 at any station, and being less than .05, except over portions of the plateau districts and central California. Eastward of the Rocky Mountains the mean pressure is above the normal in all districts, the greatest departures occurring in the Lake region, where they range from .08 to .12; in New England, the Gulf States, and lower Missouri valley the mean pressure generally ranges from .02 to .05 above the normal.

Comparison of the mean pressure of March with that of the preceding month shows an increase in all districts, with the exception of the plateau and Pacific coast regions, and on the

Atlantic coast northward of Virginia. The deficiency exceeds .10 in the middle and northern plateau districts, on the north Pacific coast, and in the Maritime Provinces of Canada; the excess ranges from .05 to .14 in northern districts from Montana eastward to the lower lakes, and from .01 to .05 in the central valleys and Southern States.

## BAROMETRIC RANGES.

The monthly barometric ranges at the various Signal Service stations are also given in the table of miscellaneous meteorological data. The ranges, as usual, conform to the general rule, that is, they increase with the latitude and decrease slightly, though somewhat irregularly, with increasing longitude. In the states bordering on the Atlantic the extreme ranges are .38 at Key West, Fla., and 1.67 at Nantucket, Mass.; between the eighty-fifth and one hundredth meridians, .71 at Pensacola, Fla., and 1.47 at Saint Vincent, Minn.; eastern slope of the Rocky Mountains, .93 at Fort Davis, Tex., and 1.51 at Las Animas, Colo.; plateau region, .54 at Yuma, Ariz., and 1.04 at Salt Lake City, Utah; Pacific coast, .52 at San Diego, Cal., and .92 at Fort Canby, Wash. Compared with the normal barometric ranges for March, no very marked departures occur, except over the middle and southern Rocky Mountain slopes, where the ranges at some stations exceed the normal by more than half an inch.

## AREAS OF HIGH PRESSURE.

Six well-defined areas of high pressure were observed during the month of March, 1888, within the limits of territory covered by the tri-daily weather charts. Of this number, one apparently approached the north Pacific coast from the west and crossed the continent, moving eastward to the Lake region, then southward to the Atlantic. Four were first observed in