

# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The REVIEW for April, 1894, is based on reports from 3,215 stations occupied by regular and voluntary observers. These reports are classified as follows: 153 reports from Weather Bureau stations; 41 reports from U. S. Army post surgeons; 2,165 monthly reports from State weather service and voluntary observers; 30 reports from Canadian stations; 223 reports through the Southern Pacific Railway Company; 567 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" weekly or monthly reports from

36 U. S. Life-Saving stations; 18 reports from navigators on the Great Lakes; 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.

The WEATHER REVIEW for this month has been prepared under the general editorial supervision of Prof. Cleveland Abbe. The statistical tables are furnished by the Division of Records and Meteorological Data, in charge of Mr. A. J. Henry, acting chief of that division.

## CHARACTERISTICS OF THE WEATHER FOR APRIL, 1894.

The most notable feature of the weather was the slow motion of the storm center off the coast of New Jersey and New England on the 11th to the 15th, and the attending extensive snowfall in the Middle States. The temperatures were decidedly above the normal in the Lake region and the entire eastern slope of the Rocky Mountains. The precipitation

was above the normal on the north Pacific coast and in North Dakota, but was generally below the normal.

The rivers were high in Arkansas and Louisiana and were rising in Oregon and Washington.

The ice on the coasts of Newfoundland and Nova Scotia was driven far west of the ordinary limit and was unusually heavy.

## ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level for April, 1894, as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart II, which also gives the so-called resultant wind direction for this month; these resultants are also given numerically in Tables VIII and IX of the present REVIEW. The pressures here charted are those shown by mercurial barometers as affected by local gravity and need to be reduced to standard gravity. That part of this reduction that depends on latitude is shown by the numbers printed on the border of Chart II; it should be applied and new isobars drawn by those engaged in special researches.

During the current month of April the pressures at sea level have been highest (30.17 to 30.10) on the coast of northern California, Oregon, and Washington, and nearly as high (30.12 to 30.10) on the coasts of Florida, Georgia, South Carolina, and North Carolina; these two regions of high pressure evidently represent, respectively, the northeastern border of the high pressure over the Pacific and the southwestern border of the high over the Atlantic. The regions of low pressure were 29.90, or less, from Yuma, Ariz., southward, as also 29.90, or less, in eastern Montana, and northward over Alberta, Assiniboia, and Saskatchewan.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of April were approximately shown on Chart VIII of the REVIEW for April, 1893, as computed by Prof. H. A. Hazen, and are not

now reproduced. As compared with the normal for April, the mean pressure for the current month was in excess at all stations in the Pacific and Atlantic States, the Lake region, the Mississippi Valley, and the Gulf States, but was below the normal on the east and north Rocky Mountain slopes. The principal excess was 0.10 to 0.15 in New England, Nova Scotia, and New Brunswick; also 0.05 to 0.09 in Washington and Oregon. The principal deficit was 0.05 to 0.10 in Assiniboia. The line of no departure passed from Alberta southeast to New Mexico, thence west into southern California; it reappeared in central Texas and ran northward to the center of Lake Superior.

As compared with the preceding month of March the mean pressure of April was lower at all stations, except in a portion of the Lake region and Washington and Oregon. The line of no change passed through Nova Scotia, Maine, northern New York, western Pennsylvania, southern Michigan, northern Illinois, central Wisconsin, Minnesota, and Manitoba; it reappeared in western Alberta, passed through central Idaho, Nevada, and northern California westward to the Pacific. The principal fall was from 0.10 to 0.12 in eastern Montana, and the principal rise was 0.10 to 0.17 on the coasts of Oregon and Washington.

The systematic periodic diurnal variations of pressure are shown by the hourly means given in Table VI.

### AREAS OF HIGH AND LOW PRESSURE.

The following sections give details as to the general phe-