MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW for January, 1894, is based on reports from 3,071 stations occupied by regular and voluntary observers. These reports are classified as follows: 154 reports from Weather Bureau stations; 41 reports from United States Army post surgeons; 2,162 monthly reports from state weather service and voluntary observers; 29 reports from Canadian stations; 220 reports through the Southern Pacific Railway Company; 429 marine reports through the co-operation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" 36 weekly reports from 10 U. S. Life-Saving stations; no 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 data is furnished by the Records Division, in charge of Mr. A. J. Henry, acting chief of that division.

CHARACTERISTICS OF THE WEATHER FOR JANUARY, 1894.

HIGH AREAS.

The most important area of high pressure was that which attended the cold wave of January 23–26; the highest pressures recorded in this connection were 31.24, at Calgary, Alberta, and 31.08 at Havre, Mont., on the 23d, a. m. The lowest temperatures recorded were —38, at Valentine, Nebr., and St. Vincent, Minn.; —36 at Williston, N. Dak., January 24, a. m., and —44 at White River, Ont., January 25, a. m.

LOW AREAS.

The lowest pressures recorded during the month were 28.48, at Sidney, C. B. I., on the 13th, a. m.; 28.88, at Halifax, N. S., on the 12th, p. m.; 28.78, at Boston, Mass., on the 30th, a. m.; 28.78, at Eastport, Me., on the 30th, p. m.; 28.88, at Sydney, C. B. I., 31st, a. m. The storms attending these lows were the severest of the month.

TEMPERATURE.

Temperatures were generally above the average throughout the United States, the only exceptions being Montana, the Dakotas, California, and Arizona.

PRECIPITATION.

The total quantity of rain or melted snow was slightly below the average in the Gulf and Atlantic States, but above the average in northern California, Washington, Oregon, Idaho, Montana, Manitoba, the upper Lake region, and Ontario.

ATMOSPHERIC PRESSURE.

[*In inches and hundredths.*]

The distribution of mean atmospheric pressure reduced to sea level for January, 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, as explained on pages 365–367 of the REVIEW for December, 1893. The computation of these resultants for January, 1894, is also given in a subsequent part of the present REVIEW. The pressures here charted are those shown by mercurial barometers uncorrected for the effect of the variations of gravity with latitude. This correction 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.

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

As compared with the normal for January, the mean pressure for the current month was deficient throughout the interior of the country, but in excess over California and on the Atlantic coast. The line of no departure passes through Sault Ste. Marie and Grand Haven, Mich., Cincinnati, Ohio, central Kentucky, western Tennessee, Montgomery and Mobile, Ala., central Louisiana, and southward into the Gulf; it reappears in central Texas, passes northward along the one hundred and ninth meridian, westward on the forty-second parallel, southwest to central Nevada, northwest to Eureka, Cal., and the Pacific coast. The greatest excess of pressure was 0.09 in central New England, Maine, and the Maritime Provinces; 0.05 at San Francisco and Los Angeles, Cal. The greatest deficiencies were 0.18 at Calgary, Alberta, 0.13 at Medicine Hat, Assiniboia, and 0.11 at Tatoosh Island, Wash.

As compared with the preceding month of December, 1893, the mean pressure for January, 1894, has fallen decidedly in Washington and Oregon, but risen in Nova Scotia, New England, and the St. Lawrence Valley. The line of no change enters California at San Francisco, and passes out between Yuma and San Diego; it also passes from central Alberta southeast to central Nebraska and thence to the center of