

MONTHLY WEATHER REVIEW,

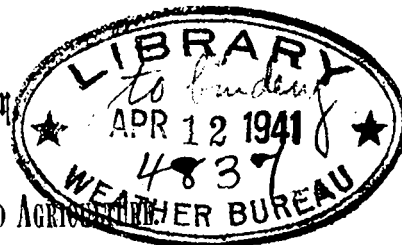
JANUARY, 1878.

WAR DEPARTMENT,

Office of the Chief Signal Officer

DIVISION OF

TELEGRAMS AND REPORTS FOR THE BENEFIT OF COMMERCE AND AGRICULTURE



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INTRODUCTION.

In compiling the present REVIEW the following data, received up to February 14th, have been made use of, viz: the regular tri-daily weather charts, containing the data of the simultaneous observations taken at one hundred and twenty-eight Signal Service stations and twelve Canadian stations; monthly journals and means from one hundred and thirty-four of the former, and means from thirteen of the latter; two hundred and forty monthly reports from Volunteer Observers; thirty-five monthly reports from United States Army Post Surgeons; Marine Records; International Simultaneous reports; monthly reports of the Weather Services of Canada and of the States of Iowa and Missouri; reliable newspaper extracts; special reports. The most prominent events of the month have been: the high temperatures of the Missouri and Upper Mississippi valleys and the Lake region; the high pressures over the same region; the severe storms of the 11th and the 31st on the Atlantic coasts, and of the 14th to the 16th and the 24th to the 28th on the Pacific coasts; the excessive rain-fall in northern California; the remarkable measured wind-velocities of 120 miles per hour at Cape Lookout and 186 at Mt. Washington; the forward state of vegetation in the western and northern sections; the aurora of the 23rd.

BAROMETRIC PRESSURE.

In General.—The general distribution of atmospheric pressure is shown by the isobars on chart No. II. A comparison with former years shows that pressures have been normal over Lakes and upper Canada, but above the mean on the Pacific and Atlantic coasts, and 10 or 15 hundredths of an inch above the mean in the Gulf States.

Barometric Ranges.—The largest and smallest monthly ranges have been as follows: California—Red Bluff, 0.98; Los Angeles, 0.42. Rocky Mountains—Denver, 0.56; Pike's Peak, 0.49. Northwest—Yankton, 1.07; Deadwood, 0.64. The Southwest—Jacksboro', 1.08; Uvalde, 0.60. Upper Mississippi valley—St. Paul, 1.03; Davenport, 0.95. Upper Lakes—Chicago, 0.97; Escanaba, 0.80. Lower Lakes—Oswego, 1.17; Detroit, 0.89. Ohio valley—Cincinnati, 1.22; Pittsburgh, 1.11. East Gulf States, Vicksburg, 1.05; Key West, 0.55. South Atlantic States—Cape Lookout, 1.36; Jacksonville, 0.87. Middle States—Albany, 1.54; Baltimore, 1.23. New England—Portland, 1.85; New Haven, 1.54, and Mount Washington, 1.13.

Departures from Normal Pressures.—The following synopsis of the tri-daily map of departures from normal values of the pressures observed but not reduced to sea-level, (inasmuch as the normal annual and diurnal periodicities, and the normal geographical distribution, of the pressure are thereby eliminated,) will in connection with the subsequent history of areas of low and high pressure, as defined by the isobars for sea-level, give a complete view of the pressure during the month. The month began with a depression of -50 hundredths of an inch over Nova Scotia, and an excess $+30$ over Manitoba and Oregon; the line of no departure extended from Minnesota to Louisiana. On the 2nd the pressure rapidly fell in the Northwest, and a depression developed along the east slope of the Rocky Mountains, being greatest, -59 , at Dakota at 11 p. m., while $+23$ was reported from Oregon and $+19$ from the Lower Lakes. The 3rd began with a depression of -40 in Dakota and Texas, and an excess, $+80$, in the St. Lawrence valley and $+13$ in California. The depressions extended eastward, and, at 11 p. m.,

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