MONTHLY WEATHER REVIEW.

DECEMBER, 1894.

VOL. XXII. WASHINGTON, D. C. No. 12.

INTRODUCTION.

The REVIEW for December, 1894, is based on reports from 3,318 stations occupied by regular and voluntary observers. These reports are classified as follows: 151 reports from Weather Bureau stations; 35 reports from U. S. Army post surgeons; 2,313 monthly reports from State Weather Service and voluntary observers; 32 reports from Canadian stations; 217 reports through the Southern Pacific Railway Company; 546 marine reports through the cooperation of the Hydrographic Office, Navy Department, and "New York Herald Weather Service;" monthly reports from 24 U. S. Life-Saving stations; 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. Unless otherwise specifically noted, the text is written by the Editor, but 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 DECEMBER, 1894.

The most interesting meteorological features of December were the persistent ridge of high pressure over the Rocky Mountain plateau; the heavy rain on the coast of California, Oregon, and Washington; the unprecedented snowfall on the Sierra and Coast ranges; the great cold wave and freeze that extended over Florida on the 28th and 29th; the severe storm of the 27th on the middle Atlantic and New England coasts.

ATMOSPHERIC PRESSURE.

[*In inches and hundredths.*]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers not reduced to standard gravity and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), during December, 1894, is shown by isobars on Chart II. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border. This Chart also gives the so-called resultant wind directions for this month, based on the data given in Table IX of this REVIEW.

During the current month of December the highest mean pressures were: 30.32, Idaho Falls; 30.31, Laramie; 30.29, Cheyenne; 30.27, Salt Lake City; 30.26, Denver; 30.25, North Platte.

The lowest mean pressures were: 29.90, Fort Canby; 29.91, Tatoosh Island; 29.94, Port Angeles; 29.96, Seattle; 29.98, Roseburg; 29.99, Marquette. To the northward of this region the lowest pressures at Canadian stations were: 29.98, at Calgary and Port Arthur.

The normal distribution of atmospheric pressure and normal resultant wind direction for the month of December were approximately shown on Chart V of the REVIEW for December, 1893, as computed by Prof. H. A. Hazen, and are not now reproduced. As compared with the normal for December, the mean pressure for the current month was decidedly in excess in New England, Nova Scotia, and Newfoundland, and also in Wyoming, Colorado, and Texas.

The principal excesses were: Sydney, 0.16; St. Johns, 0.15; Halifax and Cheyenne, 0.12; Eastport, 0.10. Pressures were deficient from the western part of Lake Superior along the northern part of the United States as far as the Pacific Ocean and along the coast of Washington and Oregon as far south as Los Angeles, the maximum deficits being: 0.14, Roseburg and Calgary; 0.09, Eureka, and 0.08, Medicine Hat.

As compared with the preceding month of November, the pressures reduced to sea level show a rise in the northeastern and eastern portions of the United States from Maine to North Carolina, the Lake region, the Lower Mississippi Valley, and Northwest. The large rises were: Sydney, 0.15; St. Johns, 0.14; Chatham, Father Point, and Halifax, 0.12; Quebec, 0.11; Eastport, 0.10. The large falls were: Fort Canby, 0.23; Tatoosh Island, 0.21; Portland, Oreg., Roseburg, and Port Angeles, 0.18; Seattle and Eureka, 0.17; Carson City, 0.10.

DIURNAL VARIATIONS.

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 some details as to the phenomena attending the individual areas of high and low pressure. Hitherto it has been customary to enumerate the storm wind signals in connection with special areas of low pressure. During the summer months high winds occur in connection with