

# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The MONTHLY WEATHER REVIEW for February, 1902, is based on reports from about 3,100 stations furnished by employees and voluntary observers, classified as follows: Regular stations of the Weather Bureau, 162; West Indian service stations, 13; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific ~~Railway~~ Company, 96; Hawaiian Government Survey, 200; Canadian Meteorological Service, 33; Jamaica Weather Office, 160; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3; Costa Rican Service, 7. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander W. H. H. Southerland, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San Jose, Costa Rica; Capt. François S.

Chaves, Director of the Meteorological Observatory, Ponta Delgada, St. Michaels, Azores; W. M. Shaw, Esq., Secretary, Meteorological Office, London; and Rev. Josef Algué, S. J., Director, Philippine Weather Service.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the Review, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is  $157^{\circ} 30'$ , or  $10^{\text{h}} 30^{\text{m}}$  west of Greenwich. The Costa Rican standard of time is that of San Jose,  $0^{\text{h}} 36^{\text{m}} 13^{\text{s}}$  slower than seventy-fifth meridian time, corresponding to  $5^{\text{h}} 36^{\text{m}}$  west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now always reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

## FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

The month opened with a storm of marked intensity central near the Azores. At Horta, the barometer had fallen rapidly to 29.42 inches and a gale was blowing from the southeast. At 10:50 a. m. of the 1st, Lloyds, London, and Atlantic ports of the United States from Boston to Norfolk, were advised with regard to this storm, and informed that it would probably be encountered by west bound vessels which left European ports that day. During the next three days the center of this disturbance moved eastward and disappeared over southern Europe, its passage being attended by northeast gales between the fortieth and fiftieth parallels east of the thirtieth meridian. The barometer continued abnormally low, with prevailing gales, from the Atlantic coast of the United States eastward to southern Europe, until the 7th, with minimum pressure, 29.18 inches, at Horta, Azores, on the 5th; from the 8th to the 11th the presence of a deep barometric depression over the Canadian Maritime Provinces caused a continuation of stormy weather over the western Atlantic. Moving slowly eastward this latter depression reached the Grand Banks on the 13th; it apparently remained nearly stationary during forty-eight hours, with barometric pressure below 29.00 inches, and then moved north of east over mid-ocean in high latitudes. On the morning of the 13th advices were cabled Lloyds, London, and telegraphed to

United States Atlantic ports regarding the character and probable course of this storm.

This disturbance was followed by another of exceptional strength, which passed northeastward along the Atlantic coast from Georgia to Nova Scotia from the 15th to the 18th, crossed Newfoundland during the 19th, and moving thence eastward was felt over the British Isles from the 22d to the 26th. On the 17th Lloyds, London, were notified of the position, character, and calculated course of this disturbance.

The storms of February in the United States first appeared either in the middle Rocky Mountain districts, or on the north Pacific coast; with one exception they passed southeastward over the Southern States, and thence northeastward over the Atlantic seaboard, where they developed great strength.

The most important of these storms in the Atlantic coast districts were those of the 2-3d and the 17-18th; they were attended on the middle and north Atlantic coasts by gales of unusual severity, and on the extreme north Atlantic coast by barometric pressure below 29.00 inches.

The severest storm of the month in the west and northwest districts appeared off the north Pacific coast during the 23d. By the 25th the barometer had fallen rapidly in the middle and north Pacific coast districts, with a minimum of 28.84