MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for May, 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; 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° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard of time is that of San Jose, $0^h\ 36^m\ 13^s$ slower than seventy-fifth meridian time, corresponding to $5^h\ 36^m$ 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 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 storms of the north Atlantic were of moderate intensity. During the 15th and 16th a disturbance passed from west of Scotland over the North Sea. It increased in strength during the 17th and 18th, and on the morning of the 18th the reading of the barometer at Cuxhaven, Germany, was 29.28 inches. By the 19th the storm center had disappeared over the continent. The most important storm of the month over the British Isles covered the north of Scotland on the 28th, when the barometer read 28.96 inches at Stornoway, and 28.98 inches at Sumburg. During the 29th this disturbance disappeared east of Scotland. On the 31st the barometer read 29.58 inches at Lisbon, Spain, and a disturbance was apparently central over or slightly west of the Bay of Biscay.

No important storm occurred on the Atlantic seaboard or the Great Lakes of the United States after the first decade of the month. During the 6th and 7th a storm center passed north of east over the upper lakes and eastern Ontario attended by high winds that reached a reported maximum velocity of 48 miles an hour at Buffalo, N. Y. This storm was followed by a disturbance that passed rapidly from the British Northwest Territory to Lake Superior during the 7th and and 8th, and thence to the lower St. Lawrence Valley by the morning of the 9th, attended by winds that reached a velocity of 52 miles an hour at Chicago, Ill., 48 miles at Cleveland, Ohio, and Buffalo, N. Y., 60 miles at New York, N. Y., and 40 miles at Portland, Me. Storm warnings were displayed on the Great Lakes during the 8th, 9th, and 10th; advisory messages were telegraphed Atlantic ports from Hatteras, N. C., to Eastport, Me., on the 8th, and storm warnings were displayed on the New England coast during the 9th.

There was an unusual amount of frost in the northern tier of States, and in the Rocky Mountain and Plateau districts, and on the 27th snow was reported in the mountains of Maryland and western Pennsylvania, and in western and northern New York. Timely warnings were issued in the agricultural district in which frost occurred.

During the 17th, 18th, and 19th thunderstorms occurred from the States of the lower Missouri Valley to Texas, the severest storm of this period being reported at Goliad, Tex., where 200 people were killed and considerable property was destroyed.

The Weather Bureau forecasts conditions that favor the occurrence of thunderstorms; it is not possible, however, to define the localities in which storms of this general type will assume the form and acquire the intensity of tornadoes.

BOSTON FORECAST DISTRICT.

The gales of the early part of the month, and the frost that