

# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The MONTHLY WEATHER REVIEW for May, 1905, is based on data from about 3583 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 176; West Indian Service, cable and mail, 4; River and Flood Service, regular 52, special river and rainfall, 363, special rainfall only, 98; cooperative observers, domestic and foreign, 2565; total Weather Bureau Service, 3258; Canadian Meteorological Service, by telegraph and mail, 33; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Meteorological Service, 1; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25. Total, 3583.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; 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, General Superintendent of the United States Life-Saving Service; Commander H. M. Hodges, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; and Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba.

Attention is called to the fact that at regular Weather

Bureau stations all data intended for the Central Office at Washington are recorded on seventy-fifth meridian or eastern standard time, except that hourly records of wind velocity and direction, temperature, and sunshine are entered on the respective local standards of time. As far as practicable, only the seventy-fifth meridian standard of time, which is exactly five hours behind Greenwich time, is used in the text of the REVIEW. The standards used by the public in the United States and Canada and by the cooperative 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<sup>h</sup> 30<sup>m</sup> west of Greenwich. The Costa Rican standard meridian is that of San José, 5<sup>h</sup> 36<sup>m</sup> west of Greenwich.

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.

Since December, 1904, the Weather Bureau has received an average of about 1700 reports from as many observers and vessels, giving international simultaneous observations over the Atlantic and Pacific oceans at 12 noon, Greenwich time, or 7 a. m., seventy-fifth meridian time. These are charted, and, with the corresponding land observations, will form the framework for daily weather charts of the globe.

In conformity with Instructions No. 43, March 29, 1905, the designation "voluntary", as applied to the class of observers performing services under the direction of the Weather Bureau without a stated compensation in money, is discontinued, and the designation "cooperative" will be used instead in all official publications and correspondence.

## FORECASTS AND WARNINGS.

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

The disturbances that advanced from the American Continent over the western Atlantic were of slight intensity. In the vicinity of the Azores barometric pressure was high, except from the 15th to 20th, when that region was occupied by a depression that appeared to pass thence over Portugal and Spain. The advance of depressions over the eastern Atlantic was attended by low pressure over the British Isles on the 1st to 3d, 10th, 11th, and 18th to 20th, and pressure fluctuated in that region from the 27th to 31st. From the 4th to 9th, and 12th to 17th the barometric pressure was high over and near the British coasts.

In the United States the more important barometric disturbances advanced from the middle Plateau and middle Rocky Mountain regions over the central valleys and the Great Lakes. The effect of the development and presence, during a great part of the month, of depressions in the western mountain and Plateau districts was an alternation of periods of precipitation and low temperature over the western half of the country. In the Plateau and western mountain districts the precipitation was partly in the form of snow. During the early part of the month frost and freezing temperatures occurred as far south as northern New Mexico and northern Arizona. The western depressions lost intensity in crossing

the central valleys and the center of but one low area, No. XII, advanced over the Southern States east of the Mississippi.

In several instances the eastward advance of low areas was attended by tornadic storms in the Middle West and Southwest. One of the most important of these storms occurred on the night of the 8th at Marquette, Kans., and the most destructive tornado of the month visited Snyder, Okla., the evening of the 10th. In each instance the tornado occurred in the eastern quadrant of a barometric depression that advanced over Colorado and Kansas.

In the early part of the month, bottom lands along the Brazos River between Hearne and Richmond, Tex., were flooded, the damage being lessened by timely warnings. At the close of the 2d and in the early part of the 3d decade water stages were high in the rivers and streams of the middle and lower Ohio Valley, and during the latter part of the month flood stages were reached in the Arkansas and Red rivers in western Arkansas and northwestern Louisiana, and in the Rio Grande in New Mexico. The high stages of rivers and streams and the warnings issued in connection therewith are discussed under the heading "Rivers and Floods."

The following from the Rocky Mountain News, Denver, Colo., of May 30, 1905, shows results accomplished in the