

# MONTHLY WEATHER REVIEW.

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## INTRODUCTION.

The MONTHLY WEATHER REVIEW for August, 1905, is based on data from about 3486 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; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25. Total, 3486.

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.

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; Capt. H. M. Hodges, U. S. N. (Retired), Hydrographer, United States Navy; Anastasio Aljaro, 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; Señor Enrique A. Del Monte, Director of the the Meteorological Service of the Republic of Cuba; Rev. L. Gangoiti, Director of the Meteorological Observatory of Belen College, Havana, 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  $157^{\circ} 30'$ , or  $10^{\text{h}} 30^{\text{m}}$  west of Greenwich. The Costa Rican standard meridian is that of San José,  $5^{\text{h}} 36^{\text{m}}$  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.

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.

Hereafter the titles of the respective forecast districts will be as used in the current REVIEW to accord with paragraph 236 of Station Regulations, dated June 15, 1905.

## FORECASTS AND WARNINGS.

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

From the 1st to 6th and 17th to 20th barometric disturbances of moderate strength advanced northeastward over the western British coasts, and during the third decade of the month an extensive, though shallow, depression covered the British Isles and moved thence eastward over continental Europe. In the vicinity of the Azores prevailing high barometer was interrupted only from the 12th to 14th. Several disturbances of slight intensity passed from the American Continent over Newfoundland, and during the last three days of the month pressures were low over New England and Nova Scotia. From the 17th to 19th the barometer was relatively low on the south Atlantic coast and over Florida. On the 27th and 28th low pressure prevailed from Florida over Bermuda, and during the night of the 27-28th a steamship foundered off the extreme north Atlantic coast of Florida and a number of vessels put into port in distress. Advices regarding the threatening character of the weather on the south Atlantic coast were telegraphed to all Florida ports at noon of the 27th.

No well defined storms of the hurricane type visited any of the islands of the West Indies. About the 20th, however,

there was evidence of a storm to the southeast of the Windward Islands.

The barometric disturbances that visited the United States were of slight intensity and shipping on the seacoast and Great Lakes was not imperiled by general storms.

Attending the passage of the barometric depressions traced on Chart II, heavy local rains occurred at points along the middle and east Gulf coasts from the 1st to 5th, and in middle and northern districts at intervals during the month. During the evening of the 30th tornadic storms appeared in central New York and northeastern Pennsylvania. Reference is made in the report of the Denver Forecast District to a torrential rain near Trinidad, Colo., during the evening of the 24th. On the evening of the 27th a heavy wind and dust storm visited Oregon and Washington.

Although no prolonged periods of excessively high temperature were experienced in the middle and northern districts, high temperatures prevailed at intervals in the Great Plains region, and on the 24th maximum readings were above  $100^{\circ}$  in parts of Kansas. Frost-bearing cool waves visited some of the northern districts during the third decade of

the month, without, however, causing material damage to vegetation.

#### BOSTON FORECAST DISTRICT.

The month was cooler than usual with more than the average number of clear days, and during the closing week light and killing frosts occurred in some of the northern sections of New England. Local storms were less frequent than usual although several of great violence were reported. No heavy rain or windstorms visited the coast.—*J. W. Smith, District Forecaster.*

#### NEW ORLEANS FORECAST DISTRICT.

No important disturbances occurred along the Gulf coast. The weather was generally mild, and precipitation was deficient over portions of the district.—*I. M. Cline, District Forecaster.*

#### CHICAGO FORECAST DISTRICT.

The weather for the month was, as a whole, fine. Storm warnings were not ordered nor required for the upper Lakes. The barometric depressions that crossed the Western and Northwestern States were in several instances attended by thunderstorms and heavy local rains. There was no stagnation of barometric areas and no prolonged periods of heat. Injurious frost or frost temperatures were not produced by the cooler weather of the third decade of the month.—*E. B. Garriott, Professor and District Forecaster.*

#### DENVER FORECAST DISTRICT.

Over the greater part of the district the month was warm and drier than usual and no frost warnings were required. During the evening of August 24 a torrential rain fell in the foot hills, twelve miles northwest of Trinidad. The canyon soon carried deep torrents. In Road Canyon, a deep and very narrow gorge, in which Berwind and Tabasco are located, many houses and their occupants were carried away by the wall of water 30 feet high that swept down the canyon during the darkness and the storm. About 35 lives were lost, the failure of many to escape being accounted for by the steepness of the sides of the canyon. Railroad tracks were washed out and two railroad bridges near Ludlow were carried away. The Apishapa and the Purgatory rivers drain the region; these streams did not leave their banks.—*F. H. Brandenburg, District Forecast Official.*

#### SAN FRANCISCO FORECAST DISTRICT.

The month as a whole was without special features of interest and no frost, cold wave, or storm warnings were issued.—*A. G. McAde, Professor and District Forecaster.*

#### PORTLAND FORECAST DISTRICT.

The month was unusually dry and east of the Cascade Mountains it was warmer than usual. During the 27th a

shallow low pressure area, central over western Idaho, rapidly deepened, and, at the same time, a high pressure area moved inland from off the Oregon and northern California coasts. These conditions produced a severe dust storm from 4 to 8 p. m. The storm was first noticed in northeastern Oregon, and afterwards in eastern Washington as far north as Spokane. The wind velocities were not sufficiently high to be destructive, but being attended by clouds of dust, they caused great annoyance and excited considerable attention. Warnings for light frost were issued on the morning of the 31st and were partially verified. No storm warnings were ordered.—*Edward A. Beals, District Forecaster.*

### RIVERS AND FLOODS.

The rivers of the Mississippi system maintained good average stages during the month, the quantity and equitable distribution of the rainfall preventing the steady decline that usually sets in about this time of the year. The flood that began on July 29 in the White and Black rivers of Arkansas was neither prolonged nor destructive, although danger-line stages were general, except along the extreme northern portion of the White River. Along the rivers of the Atlantic system the month was comparatively uneventful, except in southeastern Pennsylvania, where the heavy local storms of the 24th and 25th caused a flood in the smaller streams that has not been equaled since the great floods of May 31–June 1, 1889. It was particularly severe at and in the vicinity of the city of York. Codorus Creek overflowed its banks in many places, necessitating the suspension of business, including railroad traffic, and causing a great amount of damage. There were also moderate floods from the 11th to the 16th in the northern and eastern portions of South Carolina, due to the heavy rains of the 8th, 9th, and 10th. The Wateree and Pedee rivers and their tributaries were generally above the danger lines, and some damage was done to growing crops. Warnings for these floods were issued at the proper time.

The highest and lowest water, mean stage, and monthly range at 275 river stations are given in Table VI. Hydrographs for typical points on seven principal rivers are shown on Chart V. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*H. C. Frankenfield, Professor of Meteorology.*

### CLIMATE AND CROP SERVICE.

By Mr. JAMES BERRY, Chief of Climate and Crop Division.

The following summaries relating to the general weather and crop conditions during August are furnished by the directors of the respective sections of the Climate and Crop Service of the Weather Bureau; they are based upon reports from cooperative observers and crop correspondents, of whom there are about 3300 and 14,000, respectively:

*Alabama.*—Temperature about normal; average rainfall for the State excessive, but deficient in northeastern, some central, and southeastern counties. Cotton deteriorated steadily, except that it continued fairly satisfactory in some northern and central counties; rust, shedding, and boll rot became general, causing much damage; some early cotton ceased blooming by the 20th; bolls opened slowly; picking general by the 24th. Corn and other food crops made generally satisfactory progress; some early corn gathered. Much fodder and hay damaged by rain.—*F. P. Chaffee.*

*Arizona.*—There was more than the usual amount of cloudiness; thunderstorms were frequent; the rainfall, although slightly deficient, was quite evenly distributed, and the temperature was above the normal. Harvesting of grain progressed slowly in the northern section. Crops made good growth. Fall garden truck was planted extensively. Late corn was in tassel at the end of the month. Potatoes came up to good stands. Local winds and hail injured gardens slightly. Fifth cutting of

alfalfa began on the 26th. Stock thrifty. Water supply abundant for all purposes.—*L. N. Jesunofsky.*

*Arkansas.*—Weather favorable for farm work and growing crops. Cotton improved, fruited fairly well, and began opening by close of month; it was injured locally by rust, shedding, and insects. Early corn good, matured nicely; the late improved and ranged from poor to good. Threshing practically completed; wheat poor yield, oats good, quality of both excellent. Sweet and Irish potatoes, field peas, and turnips did well. Considerable hay saved in good condition. Apples poor crop of inferior quality.—*O. C. Burrows.*

*California.*—Although the mean temperature for the month was slightly below normal, exceedingly hot weather prevailed on the 7th and 8th in the central and northern sections and records of maximum temperatures in southern California were broken on the 28th and 29th. Grapes and beans were somewhat damaged by the heat, which in other respects was beneficial. Grape picking and raisin making commenced toward the close of the month.—*Alexander G. McAde.*

*Colorado.*—The weather conditions were generally favorable. Harvesting, haying, and threshing progressed very satisfactorily. The yield of winter wheat was very good and the quality fine, but reports as to spring wheat were not so favorable. The yield of barley, rye, and oats was generally good, as was also the quality. Corn and sugar beets were very promising, and the condition of potatoes generally good. Ranges afforded adequate feed, but the need of rain was felt at close of month.—*P. McDonough.*