

STORMS AND WEATHER WARNINGS

WASHINGTON FORECAST DISTRICT

The month was very quiet in the Washington district. Few disturbances of importance reached the Atlantic coast, and the only tropical disturbance that required advisory warnings was the one that was central southwest of Bermuda and moving northwestward on the morning of the 11th. During the day it recurved to the north and later toward the northeast, passing to the north of Bermuda early on the night of the 11th. No storm warnings were required during the month, but small-craft warnings were issued for the Rhode Island and Massachusetts coasts at 10:30 a. m. of the 1st, in connection with a disturbance of only moderate intensity that developed south of Cape Hatteras and passed inland over Connecticut shortly after 8 p. m. of the 1st.

No frost occurred in the Washington district until the morning of the 21st, when stations in Kentucky, western Ohio, and northwestern Tennessee reported light frost. The only heavy frost reported during the month was at Northfield, Vt., on the 22d. Warnings of light frost were issued on the 21st and 22d for eastern West Virginia, the extreme western portions of Maryland, Virginia, and North Carolina, and the cranberry bogs of New Jersey, and on the 23d for northern Vermont.—*C. L. Mitchell.*

CHICAGO FORECAST DISTRICT

The mean temperature for the month was above the seasonal normal for practically the entire forecast district, the only exception being the extreme western portion of the Great Plains. The month, moreover, was exceedingly warm up to about the 17th, and relatively cool weather prevailed for about six days following. The first half of the month showed record-breaking means at several stations. Indeed, at some stations abnormally high maxima were reported, 95° being quite common; 99° at Des Moines, Iowa, was the high mark at any regular Weather Bureau station, and readings in excess of 100° were recorded at some cooperative stations. Thus the temperature conditions were quite abnormal, but they had a decidedly favorable effect in bringing crops, such as corn, to maturity. During this protracted warm period the weather was mostly fair, with very little rainfall in the district; but considerable rainfall occurred during the last two weeks, the amounts in some places in the eastern portion of the district bringing the totals up to more than twice the monthly averages.

The movement of high and low pressure areas was decidedly sluggish, especially during the dry and warm period; and the lows which appeared in the West were largely dissipated before they reached the Mississippi Valley. However, weather conditions were much more active during the closing week of the month.

Frosts worthy of note were first brought in by an area of high pressure which appeared in British Columbia on the 17th. On the 19th, 20th, 21st, and 22d frosts were noted over the northern and central Great Plains and on the last two dates they extended southeastward over the Ohio Valley; and there were also frosts in the

district from Lake Michigan westward across the Dakotas on the 23d. Warnings for these frosts were issued for practically the entire areas affected, although in some instances these areas were not exactly coincident with the limits set by the warnings.

The weather conditions, as stated above, were more or less unsettled during the third decade, "weatherbreeders," so to speak, the barometer being low over a wide area, especially in the closing days of the month. A disturbance, which afterward became of marked importance, appeared in the Northwest on the 27th. This took a southeastward direction with a more or less irregular development, and on the morning of the 28th it was centered in the middle Missouri Valley. The lowest barometer was then 29.34 inches at Concordia, Kans., and thunderstorms and rain prevailed throughout most central districts. By 2 p. m. the storm had moved northeastward to northwestern Iowa, the lowest barometer reading being 29.24 inches at Sioux City and Des Moines, Iowa. It was just at this time that a tornado of considerable importance occurred at St. Louis,¹ which was located in the southeast quadrant of the storm area. Showers and thunderstorms were forecast for the area affected by this storm, and storm warnings were displayed before and during the passing of the storm on the Great Lakes, where strong winds and squalls almost generally prevailed.

Special services in the way of frost warnings were continued to the cranberry marshes of Wisconsin, and fire-weather warnings were sent to the station at Duluth for distribution to the forests of Minnesota from September 15 to 24, inclusive.

Special service by this office was given in the interest of the international balloon race which started at Detroit on the afternoon of September 10. This service was confined to extended forecasts of Zone Four for wind and weather conditions at surface and aloft, in greater detail than is customary in the bidaily forecasts, which were wired to several points for special broadcast at Detroit, Albany, New York, and Cincinnati on the 10th and 11th, and the one on the 10th for special use at the starting point at Detroit.

Special flying-forecasts were made for the flying routes over this forecast district during the national air derby from New York to Spokane, starting in New York on the 19th. The flyers were met upon their arrival at the municipal airport in Chicago by the forecasters, and the special forecasts were given to the pilots before their departure westward. Additional forecasts were wired to St. Paul en route.—*H. J. Cox.*

NEW ORLEANS FORECAST DISTRICT

Summer types of pressure distribution, with persistently warm weather and periods of local showers, continued until the 18th–20th, when high pressure from the Northwest advanced to the west Gulf coast, attended by cooler weather, which prevailed for about a week and was followed by warm weather during the last few days of the month.

¹ See p. 405 of this REVIEW.

Warnings were issued on the 20th for frost in the extreme northern portion of the district, on the 26th for probably freezing weather in northwestern Oklahoma and the Texas Panhandle, and on the 27th for frost in northern Oklahoma "if weather clears." Conditions were approximately as forecast in the first two instances, but cloudy weather prevented frost on the morning of the 28th.

No storm warnings were issued or required. Small-craft warnings were displayed in the Corpus Christi, Tex., district on the 19th and on the east coast of Texas on the 29th and were justified.—*R. A. Dyke.*

DENVER FORECAST DISTRICT

Lows of marked intensity moved eastward along the northwestern border with unusual frequency, while troughs of pressure extended southward or southwestward across the Rocky Mountain region during much of the month. A number of disturbances also advanced eastward from the Plateau States. HIGHS of important development passed across the northern Rocky Mountain sections from the 17th to the 20th and on the 24th and 25th.

These pressure conditions were attended by precipitation much in excess of normal in the central and northeastern portions of the district and by a deficiency in portions of central and western Montana and along the southwestern border. It was colder than the seasonal average from Montana southward to Utah and northern New Mexico. On the 25th and 26th snow extended southward along the eastern slope of the Rockies to northeastern Colorado.

Brisk to strong westerly winds were forecast on the morning of the 1st for Wyoming and Montana, strong westerly winds on the evenings of the 13th and 27th for Wyoming and eastern Colorado, and brisk to strong westerly winds on the morning of the 28th for eastern Colorado and strong westerly winds for Wyoming and that portion of Montana east of the Divide. The forecasts were generally verified.

Frost or freezing temperature warnings were issued for those portions of the district where they were required on the 7th, 10th, 13th, 14th, 15th, 17th, 18th, 19th, 20th, 21st, 24th, 25th, 26th, 27th, 29th, and 30th. These also were generally verified.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

A disturbance of the Cordova type required small-craft warnings to be displayed at Washington seaports on the 2nd, which were changed to southwest-storm warnings at coast stations later in the day. Winds along the coast reached gale force the following night. On the 4th southeast-storm warnings were displayed at Oregon and Washington seaports, which were followed by gales on the coast during the ensuing 24 hours. On the 11th a disturbance which originated in the Gulf of Alaska called for small-craft warnings at Washington stations. After this no further warnings were required until the 26th, when a very large low-pressure system of winter type, central near the Alaskan Peninsula, encroached upon the North Pacific coast, and southeast-storm warnings were displayed at points north of Cape Blanco. Southerly gales prevailed along the coast the following night.

Warnings of local frosts were issued on the 14th and 15th for parts of the plateau and intermountain regions.—*Thomas R. Reed.*

RIVERS AND FLOODS

By H. C. FRANKENFIELD

There were no floods of consequence during the month of September. Heavy rains on September 5 and 6 over the drainage basins of the Little Arkansas River and Chisholm Creek necessitated flood warnings on the 6th for those rivers. No material damage was done along the Little Arkansas River, but waters from Chisholm Creek inundated about 40 acres of land in North Wichita, Kans., some of which was residential, and some stockyards property. The damage amounted to several thousand dollars.

On September 6 a warning was issued for the Solomon River at Beloit, Kans., and two days later a crest of 22.5 feet occurred, 4.5 feet above the flood stage.

Persistent low pressure over the plateau region and Arizona caused a period of showery weather with occasional local downpours of rain from September 6 to 14. On the 10th and 11th the San Juan River at Farmington, N. Mex., rose above the flood stage of 8 feet, reaching a crest of 9.6 feet on the 11th. There was also a decided rise in the Colorado River, for which warnings were necessary, although flood stages were not reached except at Parker, Ariz., where the flood stage of 7 feet was exceeded by 3.8 feet on September 18, the river remaining above the flood stage from September 14 to 25, inclusive.

Although no serious damage was done, the heavy local rains caused numerous washouts and earth slides along the highways and railroads in southwestern Colorado and northwestern New Mexico.

Following heavy local rains in Arizona on September 12 and 13, flash rises occurred in a number of streams, but without damage. Warnings were issued on September 12.

River and station	Flood	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
	Feet			Feet	
Wabash-Tipppecanoe River: Norway, Ind.	6	30	(¹)	8.0	30
Solomon River: Beloit, Kans.	18	7	8	22.5	8
Rio Grande: San Marcial, N. Mex.	2	14	14	4.0	14
Colorado River: Parker, Ariz.	7	14	25	10.8	18
Colorado-San Juan River: Farmington, N. Mex.	8	10	11	9.6	11
Gila River, Kelvin, Ariz.	5	12	12	6.0	12
Salt River, Phoenix, Ariz.	5	12	12	8.5	12

¹Probably continued at end of month.

MEAN LAKE LEVELS DURING SEPTEMBER, 1927

By UNITED STATES LAKE SURVEY

[Detroit, Mich., October 5, 1927]

The following data are reported in the "Notice to Mariners" of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during September, 1927:				
Above mean sea level at New York.....	602.70	579.16	571.68	245.27
Above or below—				
Mean stage of August, 1927.....	-0.07	-0.30	-0.33	-0.50
Mean stage of September, 1926.....	+1.37	+0.65	+0.25	+0.41
Average stage for September last 10 years.....	+0.46	-0.96	-0.44	-0.43
Highest recorded September stage.....	-1.38	-4.27	-2.26	-2.34
Lowest recorded September stage.....	+1.37	+0.94	+0.75	+1.27
Average departure (since 1860) of the September level from the August level.....	+0.05	-0.20	-0.25	-0.40

¹ Lake St. Clair's level: In September, 1927, 574.36 feet.