

## RIVERS AND FLOODS.

Good boating stages continued over the larger navigable rivers except the upper Tennessee, where low water necessitated a suspension of navigation during much of the month. Navigation on the upper Mississippi was practically suspended after the middle of the month despite the fact that there was ample water for all the business.

The principal occurrence of interest during the month was a flood of considerable proportions over the Wisconsin tributaries of the Mississippi River, due to excessive rains over that district. At La Crosse, Wis., 7.23 inches of rain fell during the twenty-four hours ending at 8 a. m. of the 28th, and heavy rains had also occurred during the early days of the month. Great damage was wrought by the high waters in the Chippewa, Black, and Wisconsin rivers, and the total losses reported are said to have exceeded \$100,000. Streets in towns were flooded, families driven from their homes, stock drowned, crops ruined, and railroads washed out, but very fortunately, no lives were lost. At Portage, Wis., on the 9th, the Wisconsin River reached 12.5 feet on the gage, the highest known stage, and the lowlands for five or six miles around, were from four to six feet under water. The Government levee at Portage gave way and the lower portions of the city were flooded in a very few minutes.

The upper Mississippi also rose rapidly from these accretions, and damage, mostly of a minor nature, was reported as far south as the vicinity of Davenport, Iowa. No danger-line stages were reached along the Mississippi, although they were closely approached from La Crosse to Dubuque.

The lower Ohio system was somewhat affected by an outflow through the Great Kanawha River from the New River. Heavy rains occurred on the 23d and 24th over the watershed of the latter, and at Radford, Va., a stage of 22 feet, or 8 feet above the danger line, was reached on the 24th, being a rise of 21.6 feet in twenty-four hours. At Hinton, W. Va., there was a rise of nearly 11 feet. Warnings were sent to localities interested, and they were very instrumental in saving insecure floating property. In the Ohio River there was a rise of from five to eight feet from Portsmouth, Ohio, to Madison, Ind. It did not extend below Louisville until after the close of the month.

The highest and lowest water, mean stage, and monthly range at 129 river stations are given in Table XI. 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, Forecast Official.*

## CLIMATE AND CROP SERVICE.

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

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches and temperature in degrees Fahrenheit.

**Alabama.**—The mean temperature was 68.8°, or 5.4° above normal; the highest was 98°, at Pushmataha on the 1st, and the lowest, 44°, at Valley Head on the 12th and at Riverton on the 19th. The average precipitation was 5.64, or 3.37 above normal; the greatest monthly amount, 11.42, occurred at Riverton, and the least, 2.30, at Pineapple.—*F. P. Chaffee.*

**Arizona.**—The mean temperature was 65.0°, or 0.8° below normal; the highest was 102°, at Blaisdell on the 8th and at Parker on the 9th, and the lowest, 11°, at Flagstaff on the 30th and 31st. The average precipitation was 0.48, or 0.52 below normal; the greatest monthly amount, 1.60, occurred at Strawberry, while none fell at Pantano, Sentinel, and Tombstone.—*L. M. Dey, Jr.*

**Arkansas.**—The mean temperature was 66.0°, or 4.2° above normal; the highest was 97°, at Camden on the 6th, and the lowest, 32°, at Ione on the 10th. The average precipitation was 4.31, or 1.95 above normal; the greatest monthly amount, 8.43, occurred at Spielerville, and the least, 1.19, at Brinkley.

The rains and warm weather caused some cotton to rot and sprout in the bolls, and picking was pushed as rapidly as the weather permitted. Wheat sowing was delayed during the early part of the month on account of the ground being too hard and dry for plowing, but the general rains later put the ground into better condition for plowing, and sowing of wheat became more general and progressed satisfactorily.—*E. B. Richards.*

**California.**—The mean temperature was 58.8°, or 1.6° below normal; the highest was 107°, at Raymond on the 13th, and the lowest, 1°, at Bodie on the 30th. The average precipitation was 2.37, or 1.22 above normal; the greatest monthly amount, 15.68, occurred at Delta, while none fell at 7 stations.—*A. G. McAdie.*

**Colorado.**—The mean temperature was 49.7°, or more than 3.0° above normal; the highest was 92°, at Holly on the 5th, and the lowest, 1° below zero, at Breckenridge on the 30th. The average precipitation was 0.68, or 0.34 below normal; the greatest monthly amount, 5.00, occurred at Twin Lakes, while none fell at several stations.—*F. H. Brandenburg.*

**Florida.**—The mean temperature was 75.7°, or 2.5° above normal; the highest was 95°, at De Funiak Springs on the 1st and at Hypoluxo

and Ocala on the 8th, and the lowest, 49°, at Jasper on the 19th. The average precipitation was 5.49, or 0.99 above normal; the greatest monthly amount, 14.10, occurred at Hypoluxo, and the least, 2.13, at Archer.—*A. J. Mitchell.*

**Georgia.**—The mean temperature was 68.7°, or 4.7° above normal; the highest was 97°, at Thomasville on the 1st, and the lowest, 38°, at Dahlonga on the 18th. The average precipitation was 4.12, or 1.44 above normal; the greatest monthly amount, 9.64, occurred at Valona, and the least, 1.27, at Macon.

It was the warmest October on record since the establishment of the voluntary observation service in the State, in 1891. The weather conditions were generally favorable for fall plowing and seeding.—*J. B. Marbury.*

**Idaho.**—The mean temperature was 46.5°, or 1.1° above normal; the highest was 87°, at Hagerman on the 16th, and the lowest, 5°, at Chesterfield on the 27th. The average precipitation was 2.27, or 0.69 above normal; the greatest monthly amount, 5.07, occurred at Priest River, and least, 0.52, Lost River.—*S. M. Blandford.*

**Illinois.**—The mean temperature was 62.0°, or 7.2° above normal; the highest was 93°, at Hallidayboro on the 1st, at Cobden on the 2d, 3d, and 4th and at St. John on the 4th; the lowest, 23°, at Lanark on the 17th. The average precipitation was 2.47, or 0.25 above normal; the greatest monthly amount, 4.70, occurred at La Harpe, and the least, 0.73, at Halfway.

The month was very favorable for the advancement of fall farm work, and in many localities it was brought almost to completion. Corn matured and large quantities husked and cribbed. The seeding of wheat and rye was practically finished, and the excellent condition of the ground brought them generally to a good stand.—*M. E. Blystone.*

**Indiana.**—The mean temperature was 61.9°, or 7.9° above normal; the highest was 96°, at Paoli on the 5th, and the lowest, 26°, at Fairmount on the 17th. The average precipitation was 2.56, or 0.18 above normal; the greatest monthly amount, 5.50, occurred at Rockport, and the least, 0.50, at Valparaiso.

Warm, dry weather was very favorable for farm work; wheat sowing was completed, and, although the ground was dry in many fields, it germinated well, and at the end of the month had come up nicely and the fields looked green. Corn ripened well and was gathered in good condition.—*C. F. R. Wappenhans.*

**Iowa.**—The mean temperature was 59.3°, or 9.0 above normal; the highest was 90°, at Bedford on the 3d and 4th and at Toledo on the 4th, and the lowest, 21°, at Plover on the 14th. The average precipitation was 3.91, or about 1.63 above normal; the greatest monthly amount, 8.00, occurred at College Springs, and the least, 1.20, at Sibley.

The pastures are extra good, affording more than the usual amount of fall feed for stock, and fall sown wheat and rye, though limited in