

RIVERS AND FLOODS.

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During the first half of the week beginning Sunday, October 2, general low pressure prevailed over the interior of the country and a decided high area over the Atlantic States and the North Atlantic Ocean. Heavy rain set in over the lower Ohio Valley during the night of Monday, October 3, and continued until the night of Thursday, October 6. During October 5 and 6 the heavy rains extended northeastward into the upper Lake region, but were not excessive east of the State of Ohio. The greatest rainfall reported from river stations was 10.95 inches at Cairo, Ill., and 10.88 inches at Evansville, Ind., while between the two places as much as 15 inches was reported. As a whole, the rainfall was greatest over the watershed of the Wabash River, although above Evansville through the States of Indiana, Kentucky, and Ohio the fall ranged from 4 to 7 inches. The normal dry season and the antecedent low-water conditions operated to prevent a flood in the Ohio River, and the highest stage reported was 26.8 feet at Cairo, on October 11, 18.2 feet below the flood stage. At Evansville the highest stage reached was 25.8 feet. The northern tributaries of the Ohio River, however, and the interior rivers, generally, of the States of Ohio and western Kentucky soon responded to the unusual conditions and the resulting floods were widespread and destructive.

Damage to railroads, bridges, etc., was of the usual character and was very heavy, but the greatest losses were occasioned by the destruction of standing crops, especially of corn in the shock. The estimated losses were between \$3,000,000 and \$3,500,000. Detailed accounts of the floods will be found in another portion of this REVIEW.

Warnings were first issued on October 6, and thereafter until the waters began to subside. Flood stages were first reached during the night of October 6-7.

There were no other floods during the month.

Very low stages prevailed over the greater portion of the Arkansas River, and at Wichita, Kans., and Little Rock, Ark., the lowest stages of record were reached. At Wichita the lowest stage was 4.3 feet below zero from October 23 to 31, inclusive, and at Little Rock, zero on October 31, with a further fall indicated.

The recent completion of Dam No. 6, on the Cumberland River, about 90 miles from Nashville, marks an epoch in the history of the navigation of the Cumberland River. Lock No. 7 was also completed a short time ago, and the effect of the entire series of eight dams is the all-the-year maintenance of a stage of from 6 to 6.5 feet of water from Lock A, about 41 miles below Nashville, to a point just above Carthage, Tenn., a total distance of about 166 miles. A list of the locks and dams follows:

Designation.	Put in operation.	Distance from Nashville.
Lock A.....	November 24, 1904.	41.4 miles below.
Lock No. 1.....	November 26, 1904.	2.6 miles below.
Lock No. 2.....	October 9, 1907.....	9.0 miles above.
Lock No. 3.....	October 15, 1908.....	26.0 miles above.
Lock No. 4.....	November 17, 1909.....	44.8 miles above.
Lock No. 5.....	October 18, 1909.....	72.0 miles above.
Lock No. 6.....	October 21, 1910.....	89.6 miles above.
Lock No. 7.....	October 18, 1910.....	106.6 miles above (9.2 miles below Carthage).

Hydrographs for typical points on several principal rivers are shown on Chart I. 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.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZBUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a —.

Azores. Service météorologique. Résumé d'observations. 1909. Lisbonne. 1910. 17p. ob. 4°.

Bologna. Osservatorio della R. università. Osservazioni meteorologiche. 1909. Bologna. 1910. 31p. f°.

Bradtke, Franz. Stehende Seespiegelschwankungen (Seiches) beobachtet am Lagower See und Tschetschsee in der Mark. Halle a/S. 1910. 92p. 8° (Inaug.-Diss.—Halle-Wittenberg.)

Briggs, Lyman J. & Belz, J. O. Dry farming in relation to rainfall and evaporation. Washington. 1910. 71p. 8°. (U. S. Bureau of plant industry. bull. 188.)

Coimbra. Observatorio meteorologico. Observações meteorologicas e magneticas. 1909. Coimbra. 1910. viii, 157p. f°.

Colombo (Ceylon). Observatory. Report. 1909. [Colombo.] [1910.] viii, 50p. f°.

Costanzo, G. & Negro, C. Meteorologia agricola. Milano. 1911. xi, 200p. 24°.

Deluc, [Jean] André. Recherches sur les modifications de l'atmosphère, contenant l'histoire critique du baromètre, & du thermomètre, ... Nouvelle édition. Paris. 1784. 4v. 8°.

Gorczyński, Władisław. Sur la valeur de la "constante solaire" d'après les mesures prises à Ursynów (Pologne) en été 1909. Varsovie. 1910. 8°. (Extr., C-r., Soc. sci. Varsovie, Cl. sci-math et nat., 3. Année, 1910, p. 130-145.)

O przebiegu rocznym i dziennym usłonecznienia w Krakowie. Sur la marche annuelle et diurne de la durée de l'insolation à Cracovie. [Résumé in French.] Warszawa. 1910. 8°. (Extr., C-r., Soc. sci. Varsovie, Cl. sci-math et nat., 3. Année, 1910, p. 162-178.)

Günther, Siegmund. Ein Beitrag zur Vorgeschichte der modernen Gewitterkunde. München. 1910. 22p. 8°. (S-A., Sitzber. K. Bay. Akad. Wiss., Math.-phys. Kl., Jhrg. 1910, Abh. 4.)

Hands, Alfred. Lightning and the churches. London. 2d. ed. 1910. 92p. 8°.

Harts, W. W. Forestry and stream flow. (In Proc. eng. assoc. south, 1910, 21:20-46.)

International catalogue of scientific literature. F. Meteorology including terrestrial magnetism. 7th. Annual issue, 1907. London. 1909. viii, 284p. 8°.

International council for the study of the sea. Bulletin hydrographique pour l'année juillet 1908-juin 1909. Copenhague. [1910.] v. p. f°.

Ninth international geographical congress. Comptes-rendu... publié... par Arthur de Claparède. Genève. 1909-1910. 2v. 8°.

Internationale Luftschiffahrts-Ausstellung (ILA). Denkschrift der 1sten... zu Frankfurt a/M. Bd. I. Wissenschaftliche Vorträge. Berlin. 1910. [8], 293p. 4°.

[Imperial academy of sciences of Saint Petersburg.] Protokoly zasiedanié vtorogo meteorologicheskago s'êzda pri Imperatorskoi akademii nauk, 11-17 ianvaria, 1909 g. [Protocol of the sessions of the 2d. meteorological congress under the imperial academy of sciences, January 11-17, 1909.] Sanktpeterburg. 1910. viii, 344p. 4°.

Japan. Central meteorological observatory. Annual report, 1908, Pt. I. Tokio. 1910. 387p. 4°.

Jurva, Risto. Öfver Åskväden i Finland, 1905. Helsingfors. 1910. 168p. 8°. (Bidrag till Kännedom af Finlands Natur och Folk. H. 68, No. 1.)

Lockyer, William J. S. Southern hemisphere surface-air circulation: Being a study of the mean