A Science Service Feature

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? WHY THE WEATHER ? Mailed February 18, 1930

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PREDICTING RIVER STAGES

The work of predicting river stages and issuing flood warnings is conducted on a more extensive scale in the United States than in any other part of the world. The work began in 1870 and was entrusted to the Signal Corps of the Army as an adjunct of the national weather service. It passed to the Weather Bureau in 1890. At present the Bureau has about 500 stations where observations of river stages and rainfall are made daily in connection with this work, and 500 more for measuring rainfall only. The stations are located in the basins of all the good-sized rivers of the country. There are 65 river districts, each under the supervision of a regular Weather Bureau station, from which flood warnings are issued when required. In addition to these warnings, daily forecasts of coming river stages are made at many points on the navigable rivers for the benefit of vessel-men and others.

Flood warnings are generally issued at least a day in advance for relatively small precipitous streams. For the headwaters of large streams the advance period gradually lengthens, until it is possible to give three to four days' notice of a flood in the Ohio at Cincinnati, about eight days' notice for the mouth of the Ohio at Cairo, about twelve days for the Mississippi at Vicksburg, and from three to four weeks for the Mississippi at New Orleans. Four weeks' advance notice of floods can be given for St. Louis.

These preliminary warnings are usually correct to within a foot or two, so long as there are no intervening heavy rains. As the crests approach it is possible to forecast the maximum stage from three to seven days in advance with a limiting error of a few tenths of a foot.

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