

THE DROUGHT OF CENTRAL UNITED STATES, SUMMER AND AUTUMN, 1940

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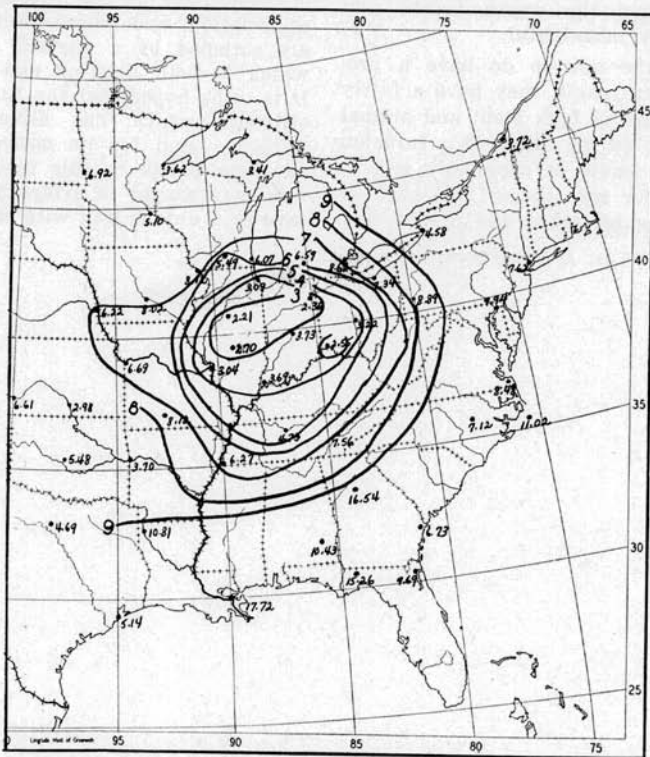


Fig. 1.—Rainfall in inches, July and August, 1940.

Droughts in the United States may be divided into two general classes. One of these is a transitory type affecting a relatively small area. The other type is the one which affects large areas over a number of years, in some cases a decade. Such a prolonged drought occurred in the United States during the decade 1930-1940, and another of the same type occurred in the later eighties and early nineties of the last century. The years 1934 and 1936 were the most serious drought years of the dry decade of 1930-1940.

Although the drought of the Central United States for the summer and autumn of 1940 came at the end of a decade of

low precipitation, it belongs to the transitory type of drought because it affected a comparatively small area, and heavy rainfall prevailed on all sides. However, in much of the area affected the precipitation was far below normal, and in some places lower than during the more serious general droughts of 1934 and 1936. The 1940 drought of central Illinois was actually one of 19 months duration extending from September, 1939, to April, 1941, and in some parts of the state it was not broken until the autumn of 1941. The average precipitation of central Illinois during this period was only 70% of normal. The deficiency of precipitation at Peoria during this 19 months was five

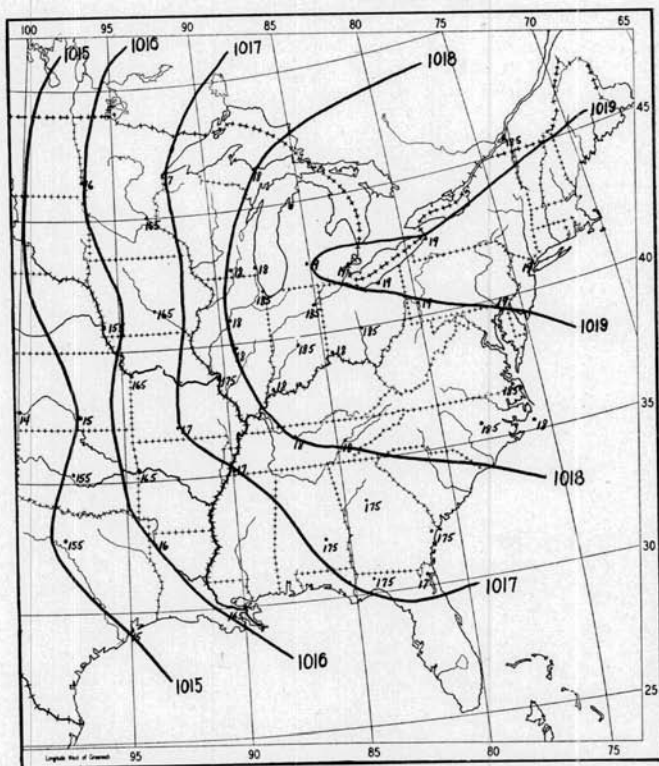


Fig. 2.—Average pressure, July and August, 1940.

per cent below that of any previous drought, thus setting a record for low precipitation for that station.

The normal rainfall for Peoria for July is 3.58 inches, but July 1940, had only .82 of an inch. The normal rainfall for the same station for July and August is 7.70 inches, but the 1940 rainfall for these months was only 2.21 inches or less than one-third of normal. Peoria may be taken as a type station since it lies near the center of the drought area.

It will be noted that the heart of the drought area is elliptical with the long axis running from northern Missouri through central Illinois, northern Indiana, and into northwestern Ohio, (Fig. 2). Perhaps the most striking fact emphasized by the isohyetal map is the increased precipitation which prevailed in all directions from the drought center, even toward the generally dryer west. The increase of rainfall outward from the center was rapid; so that within 100 miles in some directions the amount of rainfall trebled, and in some cases there

was actually too much precipitation for optimum crop conditions. The region lying to the north of the drought area, including northern Illinois, Wisconsin, Michigan, and parts of Iowa, had exceptionally heavy rainfall.

The explanation of this small but severe drought over a limited area appears to lie in the high pressure which persisted during the severe drought months of July and August, 1940 over much of eastern and southeastern United States. (Fig. 2). Undoubtedly it represents a westward extension of the Azores High Pressure Area over southeastern North America. The high pressure prevailing over that portion of the United States prevented rain bearing winds from coming into the central part of the country from the Gulf and South Atlantic. At the same time, cyclonic areas moved around the area of high pressure far north over the Lakes Region, thus leaving the drought area unaffected and without rain.