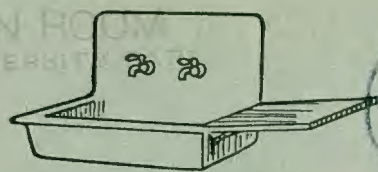
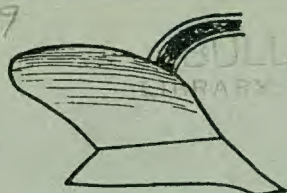
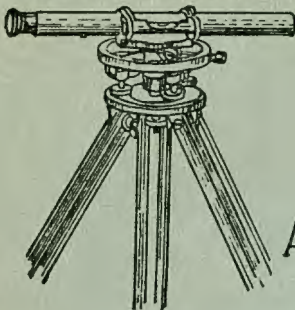


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WHEN WILL THE DROUGHT END?

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It is said that devout Mohammedans never talk about the weather because to do so might be construed as criticizing Allah. It is strongly suspected, though, that even a devout Mohammedan would occasionally say something about the weather were he farming in parts of the upper Mississippi and Missouri River basins during the hot dry season of 1934.

Undeniably many parts of the Middle West have been experiencing extremely dry weather this season. Unfortunately this area also has had precipitation quite generally below average for a number of years, or at best very slightly above average, so that soil moisture already was deficient. This year the accumulated effect of these dry years has been marked by the drying-up of many wells, ponds, and lakes and greatly lowering of water in many others.

The natural question in the minds of many is how long will the dry weather continue. There is no exact answer to this question, as accurate predicting of weather, beyond some three or four days, is not generally accepted as possible in the light of present scientific knowledge. Perhaps the nearest approach to any answer to the query is to be found after a study of existing precipitation records because the statement, "History repeats itself," certainly applies to weather. This does not mean that there are so-called "weather cycles" but means that variations in precipitation, temperature, etc., in a given locality ordinarily range between well established limits. The oldest known authentic continuous precipitation records in the Mississippi Valley are for St. Louis, Missouri and for the Twin City area of Minnesota. Since we are most interested in conditions in Minnesota there is presented a graph showing the precipitation for each of the past 97 years as recorded in the Minneapolis office of the U. S. Weather Bureau. There is also shown a graph based on records of 117 years from the Baltimore, Maryland, of-

fice of the U. S. Weather Bureau. Baltimore is a long way from the Mississippi Valley and records at this station are shown chiefly because of their exceptional value due to the length of time they have been kept. Both these graphs clearly indicate that dry weather is not peculiar to recent years.

In particular, note that the present dry period which the upper Mississippi River basin is experiencing is by no means unprecedented. As example, the total precipitation for the twenty years 1914-1933, inclusive, has been 518 inches, while away back between the twenty years 1837-1856 it totaled but 501 inches. Also during the twenty years 1882-1901 the precipitation totaled 519 inches—only one inch more rain during this twenty years than has fallen during 1914-1933. Furthermore, during the ten years 1924-1933 the precipitation has totaled 246 inches, compared with a total of but 241 inches for the ten years 1882-1891. At Baltimore the records show that the total precipitation for the 58 years between 1817-1874 averaged 38.10 inches per year, while for the

59 years between 1875-1933 it averaged 42.59 inches—4.49 inches per year more during the past 59 years than during the 58 years ending 1875.

Casual study of the graph for the Twin Cities area might lead to the conclusion that there had been a certain regularity of precipitation behavior on the order of cycles that could be used as a basis for a prediction as to when wetter years would reoccur. It is believed though that this is merely a coincidence as the Baltimore graph does not give an impression of cycles nor do records studied from a number of other long established stations of the United States.

There is a measure of gratification to note that dry periods of the past eventually have been followed by wetter years, and it seems fair to conclude that this dry period likewise will come to an end. With wetter years should come a general rise of ground water, increased run-off, higher lake levels and more water in wells and streams, although it is not possible to predict exactly when this will come about.

