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? WHY THE WEATHER ? Mailed April 10, 1935

VARYING RAINFALL

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A good deal of new information about the rainfall of the United States is found in a report recently published by the National Resources Board in Washington. This document contains, for example, a striking pictorial representation of the average rainfall over the country, in which depth of rain is represented by layers of various thicknesses. Another chart shows in much detail the average runoff in different parts of the country, and still another the average extent, expressed as percentage, to which the rainfall of any single year varies from the normal.

The variation of rainfall from year to year is a matter of great practical interest. The text of the report says on this subject:

"In the more humid areas of the East and Northwest, the average deviation is low, and it becomes much higher in the arid regions. This has important economic consequences, and explains the necessity for extremely large storage reservoirs in the arid portions of the country. In New England there is a 50-50 chance that the precipitation in any one year will not differ from the average by more than about 10 per cent., while there is an equal probability that in parts of the Imperial Valley of California it may depart 40 to 50 per cent. from the average. Moreover, the significance of these relative probabilities of departures from the mean is accentuated by the respective magnitudes of the average rainfall. Thus in New England, with an average of around 45 inches, a variation of 10 per cent. below would still yield 41.5 inches, which is reasonably adequate. But in the Imperial Valley the annual average is only 5 inches or less, and a variation of 40 per cent. below would yield only 3 inches, which has tremendous implications with respect to agriculture, and the amount of water required from sources other than local rainfall. In general the widest variations from the average annual precipitation occur where such variations are most serious, namely, in the arid and semi-arid regions."

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