2. THE RESULTS AND SIGNIFICANCE OF THE SPUR (TEXAS) RUN-OFF AND EROSION EXPERIMENTS

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In nearly every section, water or soil fertility, or both, are limiting factors in crop production. Until quite recently the losses in soil fertility were accredited chiefly to poor judgment on the part of the farmer in the selection of the cropping system on his land. But it is being recognized more and more that the losses of soil fertility taking place through erosion are many times greater than the losses by even the poorest cropping system. With the realization of this fact we can consider soil fertility losses by erosion and water losses as concomitant, as water is merely the vehicle by which soil fertility is transported from the land. Since we know that by certain methods conservation can be practiced by the land-owner, a great field lies before us in developing information as to the extent to which these losses occur on our farming, grazing, and forest lands, together with studies to determine the most effective means of checking these losses.

The characteristic downpours of rain, so common in the West, contribute heavily to this wastage of water and soil, which seems to be avoidable in a large measure if suitable methods are developed to hold the water on the land until it has had time to penetrate.

This wastage of both water and soil fertility becomes a matter of urgent importance to the whole western half of the United States as this region generally produces its crops under limited water conditions and is rapidly becoming depleted of its soil fertility which has probably played an important rôle in the production of grains and other products rich in protein. Already the wheat growers realize that with the declining supply of nitrogen in the soil there is a reduction in the protein content of wheat. The same might be said for cotton, although the development of cotton farming in the western part of the region has been carried on hardly long enough to show noticeable effects.

RESEARCH NEEDED

Very little is known about the nature of the rainfall. We have records, it is true, and know with a fair degree of accuracy the average annual rainfall for any given region. We have measures of the monthly rainfall and even the daily rainfall, but we have failed in

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