surface drainage impracticable such as sloughs and marshes. Unless great economic gains result from such drainages, it would be better to retain the wet or marsh lands as a refuge for wild life, in some instances the deep sloughs or marshes might well become the drainage outlet for adjacent land in need of drainage.

As was previously pointed out, the slow lateral pull of gravitational water toward tile line in the heavy clay sub-soils of the Red River Valley and the difficulty of getting deep outlets for tile lines makes tile drainage on the level prairie farms impracticable. Lands subject to overflow in the spring run-off and from heavy summer rains present special problems. Roads, drives and dikes may be used to divert the over-flow waters, the farmers' problem then results in handling the rainfall that falls on the farm. The heavy clay sub-soils of the Red River Valley, which jealously hold the capillary water and prevent the rapid drainage of the gravitational water, serve as a water savings account for crops during the dry summers. Trees, shrubs, deep rooted crops like alfalfa, sugar beets and sweet clover not only reduce the water table in the soil but open up the soil for better penetration of summer rains.

A full report on the "Installation of an Experimental Drainage System can be seen in library copies of Bulletin 110, University of Minn., Northwest Experiment Station (now out of print).