THE INTERPRETATION OF FIELD EXPERIMENTS.

CHAS. E. THORNE,

Experiment Station, Wooster, Ohio.

Presented at the Washington Meeting, 1908.

As a practically universal rule our experiment stations have been located without any reference to the adaptability of the land selected to the purposes of field experiment. The stations were generally established as appendages to the agricultural colleges, and the college farms were expected to supply the experiment fields; but these farms had been selected at a time when experience in scientific field experiment was practically limited to Rothamsted, and when the popular conception of an experiment farm was that it should contain as many kinds of soil as possible.

Thus the earlier field experimenter, himself without either personal experience in this method of research or the guidance of those who had had such experience, and beginning on a soil selected under a theory of the requirements for field investigation the exact opposite of the true one, obtained such unsatisfactory results that there were those who were ready to declare that no progress in scientific discovery could be made through this form of research.

The Ohio station had the unusual good fortune to be permitted to relocate, after spending ten years in preliminary work, and in this relocation to be able to give chief consideration to the adaptability of the chosen soil to field experiment. It was soon discovered, however, that it was not possible to find in Ohio the ideal experiment field; such a field, for example, as might have been seen forty years ago west of the Mississippi, still clothed in the native herbage of the prairie, or if under cultivation, having been uniformly cropped and not thrown out of balance by uneven manuring; the topography a broad, uniform, gentle slope from which the surplus water of heavy rains or melting snows drains off in uniform sheets, as it flows from the roof of a house, and without depressions to gather the fertility or excess of water from higher portions, or to retain moisture when they had become dry.

This ideal we were able to closely approximate in topography, but on land that had been cleared from the forest at different periods, and had been under the plow from one quarter to three quarters of a century, receiving during the latter part of this period the spasmodic treatment, as to cropping and manuring, that goes with tenant husbandry under our pernicious system of short-term leases.