

in the chemical investigations at Rothamsted, was chosen to deliver the first course of lectures before the Association of American Agricultural Colleges and Experiment Stations at Washington in August of last year. The choice was a wise one. Mr. Warington being connected with Rothamsted more or less closely since 1859 was thoroughly conversant with the many lines of experiments carried on and the results obtained there. His own work there has been of a varied character. The analyses of the ash of plants and animals, the chemical examination of soils, rain, drainage and well-waters, a lengthy investigation into the process of nitrification in soils and the chemical action of certain soils and bacteria form a few of the most important subjects upon which Mr. Warington has been engaged.

It would be impossible with the space at our command to give an adequate account of all Mr. Warington said at Washington. The lectures have recently been issued by the U. S. Department of Agriculture and form an octavo pamphlet of over 100 pages. They are well worthy of careful perusal by those interested in modern and progressive agriculture; it must suffice us here to do little more than indicate the subjects there expanded.

Lecture 1. Contains an historical account of the Rothamsted institution and enumerates many of the experiments conducted with animals and in the field. In this connection we must quote one experiment, as the result is both interesting and important. It proves that wheat as we know it is the outcome of artificial development and emphatically teaches the choking power of weeds. In 1882 a plot of wheat was not harvested, *i. e.* the grain was left to fall when ripe upon the ground and sow itself. "The first self-sown crop (1883) came up strong, but was so starved by the weeds that the produce of grain probably did not exceed a few pints per acre". Self-seeding was again allowed, but the end was near. "The last appearance of the wheat was in 1885." Sickly and stunted the wheat struggled for a few years against the choking weeds that grew and flourished so vigorously until its very existence became a thing of the past. Here is a lesson full of import to many a Canadian farmer.

Lecture 2. Agricultural chemists have determined that of all the elements of plant food, three may be termed essentials, since they must