gauge 35.6 lbs. per acre, equivalent respectively to 239, 209 and 228 lbs. of ordinary sodium nitrate. This, then, is the amount annually produced (and lost) in land left for many years unmanured, lying in its natural state of consolidation, and receiving no aëration from tillage. All vegetation that appears on these soils is removed."

Lecture 5. Deals with the "Nitrification of Soils and Manures." In it Mr. Warington points out by means of tables that the greatest loss of nitrogen as nitrates by drainage takes place during those months when the soil is not covered by a growing crop. "In June it is rare to find nitrates in this drainage water. Out of the twenty-five samples of drainage collected in June, July and August during twelve years, only three contained any nitric acid. In September, the crop being now removed, nitrates are always found in the drainage water. In a wet season the maximum amount of nitrates will occur in October. The proportion of nitrates will be maintained with little diminution during the winter months and begin to fall again in March." The crop, therefore, which has the longest growing season will be the best to conserve the nitrates in the soil. "From this point of view maize (Indian Corn) is a more economical crop than either wheat, oats or barley, its growing period extending during the whole of the summer." This lecture is brimful of practical information of a most valuable nature, and the inclination is strong to make very copious extracts, but a few more must suffice. The explanation why the cereals more especially respond to the application of soluble nitrogenous manures is given in the following words: "After a wet winter cereal crops begin to grow in a soil impoverished of its nitrates, and the growth of most cereals is over before the summer production of nitrates is half accomplished. Cereal crops are then especially benefitted by nitrogenous manures, and particularly by the application of nitrates, while for the reason already given, maize is more independent of such manuring than wheat or barley. The beneficial influence of a dry winter upon the crops of the ensuing year is now generally recognized." Mr. Warington gives scientific reasons for practicing rotation, and shows how a proper succession of crops tends to preserve and use the nitrates. This lecture proceeds to give the loss of nitrates in soils fertilized with different manures and cropped with wheat and barley. He summarizes his