

was able, at the age of eighteen, to take the complete management of the Deanston works. He competed, in 1812, for the £500 premium offered for an effective reaping-machine, by the Dalkeith Farmers' Club, and though unsuccessful, after several trials, received from the Club a piece of plate, of the value of fifty guineas, besides silver cups and a gold medal from Russia. In 1823, Mr. Smith commenced his celebrated drainage operations, which ended in the reclamation of the Deanston Farm; and, in 1831, published his pamphlet on "Thorough Draining and Deep Working." He was named one of Peel's Sanitary Commissioners, in 1843, and propounded, in that capacity, his great plan for economising sewerage manure, which, high as the name of Mr. Smith, of Deanston, stands, and widely as it is known in agriculture, is destined to extend it still further, as a benefactor of the human race, by whom the sources of reproductive industry have been multiplied through science.

NORTON'S ELEMENTS OF SCIENTIFIC AGRICULTURE.

Elements of Scientific Agriculture, or the Connection between Science and the Art of Practical Farming. Prize Essay of the New York State Agricultural Society. By John P. Norton, M.A., Professor of Scientific Agriculture in Yale College. 12mo. pp. 208. Albany: Erastus H. Pease & Co., No. 82, State Street. 1850.

We have looked through Professor Norton's new Treatise with some degree of care, and find it well adapted to the purpose for which it was mainly composed, namely, to supply correct elementary instruction in Scientific Agriculture, for the use of schools, and inquiring young men, engaged in the business of farming. The application of scientific principles to the art of cultivating the earth, management of the dairy, the breeding and feeding of animals, &c., is treated of in simple language, with scientific accuracy, and in considerable fulness. The publication is alike creditable to the talent and industry of the author, and the discriminating judgment of the valuable Society which has been the means of calling it forth. We should be happy to see it introduced into all the schools, and the family of every farmer, of this country. We shall present our readers with a very brief and imperfect synopsis of its contents.

The author first describes the *organic* and

inorganic constituents of plants, whence and how supplied. *Soils*, their composition, clarification, and management. *Manures*, their varieties, modes of action, and application. Composition of cultivated crops, with their application to the purposes of feeding. Milk and dairy produce generally. Nature of chemical analysis, and the applications of geology to agriculture. These topics, in connection with others of a collateral nature, are so explained and illustrated, as to be readily understood by persons who have paid but little, or no previous attention to scientific subjects.

The author's views respecting the analysis of soils, &c., by practical farmers, are so much in accordance with our own, and so well calculated to correct a false impression, which has made of late years considerable progress in the public mind, that we subjoin, without abridgment, his remarks under that head. We should be sorry to insinuate the slightest doubt of the ability of chemistry to assist the farmer in the practical details of his daily vocation; something has already been done in advancing the art of agriculture, and much more, we believe, remains to be accomplished, by invoking the aid of science; but to suppose that any practicable educational system will ever convert the farmers of a country (that is, such as pursue their calling for a living) into expert analytical chemists, appears to us perfectly wild and visionary. Many that speak and write upon these matters seem to have no definite conception of the time and patience, the deep and accurate knowledge, with the habit of delicate manipulation, which are required in every satisfactory analysis of organic compounds. The farmers must remain content to leave this business in the hands of those to whom such matters properly belong. An imperfect analysis is worse than useless, for any purpose, either practical or theoretical.

THE TRUE NATURE OF CHEMICAL ANALYSIS.

Among all of the subjects that have been presented to the consideration of farmers, since the work of agricultural improvement commenced, none has been less understood, even by many of those who have pretended to be its expounders, than that of analytical chemistry as applied to agriculture.

Many authors and speakers have labored to establish it as a fact, that there is no difficulty in chemical investigations, beyond what may be overcome by a few days of study: thus a large portion of the farming community have been led into the belief that when proper institutions are established, they themselves do all their own analytical work; just as they do their own ploughing, and as well as the most accomplished chemist could do it.