

to the mechanical and daily routine of business, by the practical farmer, is not compatible with that leisure and those habits of mind, which are essential to the successful prosecution of the physical sciences. Nevertheless, we advocate the propriety of introducing, as far as practicable, agricultural chemistry, geology, animal and vegetable physiology, and indeed whatever has a reference to rural affairs, both into our colleges and common schools. In a country like Canada, too much cannot be done to educate the rising race of our farmers, and thus to elevate the standard of that important art on which alone depends so much of the wealth and prosperity of our country. But let no one imagine, that our youth can be made into efficient farmers, either in a school or college; the instructions there given may be highly advantageous afterwards, if a proper use be made of them: but it must be in the field, behind the plough, amidst the numerous and not unfrequently complicated duties of the farm, the real art of culture must be learned, if it be learned in reality and to good practical purpose. Experimental farms in connexion with educational institutions might no doubt be made highly beneficial; but then they must be conducted by men who are practically acquainted with farming pursuits, possessing extensive experience, as well as general scientific attainments. To attempt otherwise the teaching of farming, would only end in disappointment. Practice must be the test of science.

That we are not singular in the opinions above expressed, we will quote two of the highest authorities within the wide range of our modern agricultural literature. Mr. STEPHENS, the very able editor of the *Scottish Journal of Agriculture*, in the most elaborate work on practical husbandry that ever issued from the press (*The Book of the Farm*, vol. 1. page 83), says—"The only other science which bears directly on agriculture, and with which the pupil farmer should make himself acquainted, is *chemistry*; that science which is cognizant of all the changes in the constitution of matter, whether effected by heat, by moisture, or other means. There is no substance existing in nature, but is susceptible of chemical examination. A science so universally applicable, cannot fail to arrest popular attention. Its popular character, however, has raised expectations of its power to assist agriculture, to a much greater degree than the results of its investigations yet warrant. It is very generally believed, not by practical farmers, but chiefly by amateur agriculturalists, who profess great regard for the welfare of agriculture, that the knowledge derived from the analysis of soils, manures, and vegetable products, would develop general principles, which might lead to the establishment of a system of

agriculture, as certain in its effects as the unerring results of science. Agriculture, in that case, would rank among the experimental sciences, the application of the principles of which would necessarily result in increased produce. The positive effects of the weather seem to be entirely overlooked by these amateurs. Such sentiments and anticipations are very prevalent in the present day, when every sort of what is termed *scientific* knowledge is sought after with an eagerness as if prompted by the fear of endangered existence. This feverish anxiety for scientific knowledge is very unlike the dispassionate state of mind induced by the patient investigation of true science, and very unfavourable to the right application of the principles of science to any practical art. Most of the leading agricultural societies, instituted for the promotion of practical agriculture, have been of late assailed by the entreaties of enthusiastic amateur agriculturists, to construct their premiums to encourage only that system of agriculture which takes chemistry for its basis."

The professor of agriculture in the university of Edinburgh, Mr. Low, to whose able pen the world is deeply indebted for much valuable instruction on rural subjects, observes in his excellent treatise, entitled "*Elements of Practical Agriculture*,"—a work that embodies the substance of his lectures to his agricultural class,—“A knowledge of the intimate chemical constitution of the soil is highly worthy of being obtained, and the subject would deserve to be pursued by men of science, were there no other aim or result than the resolving of chemical and physiological questions. But too much must not be looked for from such inquiries, as teaching the farmer new methods of practice. The farmer knows, for the most part, better than the chemist, when a soil is good or bad; when it is improvable by ordinary means, and when it is too barren to repay the expenses of culture; and he knows better than the chemist how to keep it clean, dry, and as productive as the means at his command will allow, with a due reference to the return as compared with the expenditure. But this latter knowledge is not derived from the laboratory but the fields, and is a branch of a practical business, in which chemistry can render little aid. Whatever results chemical analyses of the soil may hereafter conduct us to, it must be admitted, that as yet they have been interesting to the scientific inquirer, rather than useful to the farmer. Every garden and well-cultivated field shews that the soil may be brought to its maximum of fertility without dependence on any conclusions yet arrived at by the physiologist and the chemist. Perhaps not more than a dozen of chemical analyses of soils have yet been made in Europe, sufficiently exact to aid the pur-