

But this is not the place to moralise. I must hasten on to the close of the subject, in the discussion of which the difficulty lies more in what I shall leave unsaid, than in that which I shall say.

One part of the subject, however, and which perhaps after all is the most important, is the mode and manner in which our profession can be most effectually assisted by the application of science.

Amongst many of our farmers, both Canadian and old country, the *theory* and *practice* of agriculture are still studiously kept in *opposition* to each other, and form, when thus understood, a sort of "vexed question," which will at times excite in their several advocates unseemly and unprofitable contention.

I am not myself one of those who believe that there was no science in agriculture until *Davy* and other modern chemists wrote. Although we have no account of the *theory* of agriculture having been taught by the early eastern nations, yet a steady advance in the art is clearly discernible in the Old Testament, whose records abound with descriptions and accounts of "flocks" and "herds," cattle, sheep, and even their diseases, as well as "sheep-folds," "stalls for all manner of beasts," and the manner in which their provender was prepared. That they were acquainted with the arts of the dairy is also manifest. "Surely," says Solomon, "the churning of milk bringeth forth butter." And Samuel speaks of the "cheese of kine." Their chief productions of grain were, wheat, barley, beans, lentils and rye. We have no reason in fact to doubt that they were skilful husbandmen. They ploughed and sowed much the same as we do at this day. They had hoes and mattocks. "On all hill sides," says the prophet, "that shall be digged with the mattock there shall not come thither the fear of briers and thorns." In Egypt they irrigated their lands. When their corn was ripe it was cut with the sickle or scythe, bound into "sheaves," threshed, fanned and ground into flour.

The Greeks, too, it is evident, improved upon the art to a very considerable extent. Xenophon, who lived some hundreds of years before the Christian era, wrote largely upon agriculture, and that he thought deeply upon the subject is evident from his writings. "No man," he says, "can be a farmer until he is taught by experience; observation and instruction may do much, but practice teaches many particulars which no master would ever have thought to remark upon." "Before we commence the cultivation of the soil," he observes, "we should notice what crops flourish best upon it; and we may even learn from the weeds it produces what crops it will best support." He recommends "fallowing" and "frequent ploughing." Xenophon also recommends green plants to be ploughed in, and even crops to be raised for the purpose; for "such," he says, "enrich the soil as much as dung." He also recommends earth that has been long under water to be put upon land to enrich it, upon scientific principles. He says the stubble should be left long, and burned upon the land. Homer enforces the necessity

of "water courses and ditches," that they may be made to drain away the wet, which is apt to do great damage to corn." There is, indeed, scarcely an end to the writings of the Romans upon agriculture. And it is really curious to notice how their system two thousand years ago, goes nearly on all fours with ours at this day; so much so, indeed, that one is almost brought to doubt whether much improvement in agriculture as an art has taken place. Now will any one undertake to prove that there is no science in all this?

I have made these observations in support of those who argue that modern agriculture is not so very far ahead of the ancient system as many would make us believe. "There is nothing new under the sun," says Solomon; and this remark holds as good at this day as it did three thousand years ago. The principal difference in agriculture as an art, and indeed as formerly practised, and agriculture as a science, and as now placed before the world, consists in having, by the aid of a knowledge of chemistry—that is, the power of discovering the constituents of bodies—been enabled to bring the laws of nature under subjection to our will, and adapting them at pleasure to the useful purposes of life. Of this the ancients knew nothing. And that the wonderful discoveries made in chemical science are one day destined to make two grains of wheat grow where but one grew before, no reading man can any longer doubt. It is true that chemistry is but of modern date; there are indeed those living who may be said to have rocked the cradle of its infancy; and it is intimately connected with the practical arts, and especially with the advancement of the great art of agriculture, the most important benefits to which must result from its study and application. In thus looking at both sides of this disputable ground, my desire is to bring the theory and the practice of agriculture a little nearer together. They are, in fact, inseparable. Give me, says the common thinker, only a little practice, and a fig for the visions of theory. Science, however, is, without any doubt, the great source of instruction for practice; and it would be just as reasonable for the man who lights the gas lamps in our streets, to laugh at the German philosopher who discovered the use of gas, as it is for practice in general to undervalue theory.

It is not yet sixty years since a Scottish nobleman gave the first hints as to the application of chemical science to agriculture. It is not forty years since these hints were enlarged upon and enforced by Sir Humphrey Davy; and even to this day, important as agriculture is to all men, most rural operators proceed upon practice alone, and are totally ignorant of many methods suggested by scientific men, of cultivating the ground in a much superior manner.

Now, gentlemen, although I am unwilling to undervalue practice, I cannot too much overvalue reading. In this single suggestion—reading—not theory, lies the difficulty, and also, in my opinion, the very germ of our prosperity as farmers. I have known many a person, both as farmer and mechanic, labour hard and die a poor man, whilst on the other hand I have known those who have