cept heath to live upon in winter where there were no natural meadows, and whenever the winter was unusually severe, great numbers of cattle died. Each farmer worked his land as his father had done before him, and as Scotland produced little, it was accounted a poor barren country. Yet during the long period that this mode of farming prevailed there, the Flemish husbandry, there is reason to think, was as perfect as it is now*, and many enterprising Scotchmen (often men of high rank) were serving in that country in the armies, but at that time a gentleman was only a Soldier and a Politician, as ignorant of the science of cultivation as the poor labourer. Thousands of Englishmen had also been in Flanders, and returned, having seen nothing; yet finally, the eyes of two or three were opened, and they introduced the most important improvements into their own country, and a very small number carried those improvements from England to Scotland.

It is certain that an improved system of culture would increase the produce of this country as much as it has that of Scotland, but we have much to learn from our own experience. We cannot raise all the crops here which are raised there, and we can raise some here which cannot be raised there. The diseases, and the insects which affect the crops, differ on the different shores of the Atlantic. Yet the principles of good husbandry are here, and, indeed in all the countries the same. The land should always be kept in a state that will yield *great* crops. The implements should be those that will do the work most cheaply, and the kind of cattle in each district should be that which is found to give the greatest profit upon the expence of supporting them. To this we may add, that the greater part of the labor should be applied to those crops which are generally successful.

Before any considerable improvement can be introduced, draining will be necessary upon a considerable proportion of the land now cultivated. The soil of a great part of the Province is now in a state that would prevent a small quantity of lime from having any sensible effect. It is constantly receiving a portion of vitriol from the subsoil. Draining would carry off the greater part of this vitriolic water which is now raised to the surface. It has been found in Britain that to ensure large crops, draining is necessary not only to springy ground, but to all clayey and stiff soils. When such drains have been formed that, large quantities of rain water will not completely fill all the interstices of the soil, and rise to the surface, the vitriol formed beneath will be carried off by the drains.

In this Province the use of Lime as a manure is unknown to most farmers. A few have tried it without any effect, and some have injured their land by using it unskilfully. Very valuable information upon this subject will be found in this work. "The application of Lime" says Mr. Jackson, "occasionally, has effected a complete change in the husbandry of Scotland. Since the first introduction of turnips and the sown grasses, the condition of the live stock has been greatly improved; and from applying lime in the cultivation of sheep, dairy and tillage husbandry, which require to be administered to the above plants, an immense quantity of waste and hitherto unproductive land has been brought into active fertility." Sir Humphrey Davy observes "when lime whether freshly burned or slacked, is mixed with any moist fibrous vegetable matter, there is a strong action between the lime and the vegetable matter, and they form a kind of compost together, of which a part is usually soluble in water. By this kind of operation, lime renders matter which was before comparatively inert, nutritive; and as charcoal and oxygen abound in all vegetable matters, it becomes at the same time converted into a carbonate of lime," [that is, it is converted into the state in which it was before it was burnt; all limestones are carbonates of lime]. Mild lime, powdered limestone, marls, or chalks, have no action of this kind upon vegetable matter; by their action they prevent the too rapid decomposition of substances already dissolved, but they have no tendency to form soluble matters. It is obvious from these circumstances that the operation of quick-lime, and marl or limestone, depends upon principles altogether different. Quick-lime, on being applied to land, tends to bring any hard vegetable matter that it contains into a state of more rapid decomposition and solution, so as to render it a proper food for plants. Marl, or carbonate of lime, will only improve the texture of the soil, or its relation to absorption; it acts merely as one of the earthy ingredients.† Quick-lime,

* Men of Science have called Flanders "the cradle of Scientific Agriculture," and we may add, that for many ages, useful arts and manufactures were there cultivated more successfully than in the neighbouring countries. Flemings driven from home by the failure of a great dyke, came to England and manufactured the excellent wool of the country into an article so beautiful that Ladies in every part of Europe were eager for it. The gloomy sullen Englishman, as he is called by his neighbours, has been rather sparing of fair words to foreigners, but when they were in distress he has given them something better: protection and assistance; and he has always been a gainer by it. The French refugees banished for their religion by Louis XIV. were naturalized in England, and became very useful by the manufactures they introduced.

It is proper however to observe that our gratitude is due to that Providence which made use of the inhabitants of the Low countries to preserve arts so useful to mankind, and not to the people themselves, who were by no means disposed to teach their neighbours.

The Low Dutch turn the fronts of the houses to their fields, not to the road; say less, and think more than other people, are great economists, and uncommonly skilful in manual operations, seeming always to take every thing by the right end, and for that reason accomplishing more by their slow motions than some of their hurrying neighbours can effect. Little accustomed to speaking, they often express their meaning awkwardly, for which reason their neighbours ridicule them as stupid, and they are often blamed for unconquerable obstinacy. It is probably to this last quality in part, that we may ascribe their retaining so much useful knowledge after it had been lost in neighbouring nations. They seem always to have successfully resisted all attempts of their rulers to deprive them of so great a share of their earnings that they could not carry on their business to advantage, at the same time that, with great firmness, they defended their country against foreign plunderers, during those ages in which it seems generally to have been believed that war ought to be the principal business of mankind.

† It has been often asserted by Chemists that mild lime, that is to say, powdered limestone, chalk, oystershells, or slacked lime which has lost its taste, furnishes no more food to plants than sand, or clay; and that it acts only by improving the texture of the soil; by rendering clay more loose and open, &c. Had chemistry been well understood in the days of Homer when kings held their own ploughs, such mistakes could not have been made. The chemists reason correctly upon the facts they know, but are often ignorant that most poor soils abound with vitriol of iron; a very important fact which had they been ploughmen they must have known. Vitriol by its petrifying action makes fertile mould barren. It is composed of iron and sulphuric acid. Limestone is composed of lime and carbonic acid. When it comes in contact with vitriol, the sulphuric acid of the last having a stronger attraction for lime than for iron, lets go the iron in the state of ocher, and uniting with the lime changes it to gypsum; the carbonic acid of the limestone at the same time flying off in the state of carbonic acid gas, which is well known to be an important part of the food of plants. If a quantity of limestone, much exceeding what is wanted to neutralize the vitriol in the soil, were spread upon land, its fertilizing effects would be durable, if the subsoil were always transmitting additional quantities of vitriol to the surface, which would serve to disengage a portion of the carbonic acid of the limestone. And it is probably by this process that some lands full of broken limestone have been enabled for a long time to produce good crops without the aid of manure. Thus this generally diffused salt, vitriol, which seems