

Volumes have been written on each of these. I have taken them all in for the sake of system; but to me none appears important except the third and last.

The first question includes mechanics; and shews how naturally agriculture may be taken into the second branch of natural philosophy in any of the systems. Indeed mechanics originated from agriculture: the farmer's handspike was probably the first lever; and his sliding pole, with one end on the ground and the other elevated on his barn or log-heap, gave the first idea of an inclined plane. From this first source, every branch of science, as navigation, optics, &c. has its own system of mechanics, without which nothing can be done.

Manufactures yet may receive great advantages from improvements in mechanics; agriculture, which is more simple, never will. We are now at no loss for implements, but for want of inclination to use them. Great improvements would here be pernicious. Could a machine be devised to do the work of ten farmers, nine would be pests to society, especially in this new world.

A great deal has been written on this question, I will only make two or three short remarks. The instruments are derived from the mineral, animal and vegetable worlds. With the process of iron and other ores, the farmer has nothing to do; and very little need to provide farm-wood where a carpenter can be had. When this cannot be, he already knows, that the winter is the season for this purpose; that the oak is in perfection at an hundred years, and other trees about sixty or seventy.

Much has been said about the trench-plough and roller: the roller is a very useful instrument, though little used by the farmers in North-Carolina; it is very useful in breaking clods, in pressing down the roots of wheat thrown out by the frost, and to prevent them from being thrown out. The use of the trench-plough may be superseded by deep ploughing, and by gradually descending from year to year, as the state of the soil will admit. If earth be taken from the bottom of a cellar six feet deep, and spread over a soil already six inches, the whole will, in a few winters, have a vegetative power twelve inches deep.

Among the instruments of agriculture may be classed the animals used for that purpose; of these, few farmers know the value of the ox—he is as tractable, and may be made as speedy as the horse; his dung is more attenuated, he is cheaper fed, if crippled is more saleable, and needs less currying and shoeing than the horse. The comparative gain, by those that have made the estimate,

has in twelve years amounted to more than seventy pounds.\* This is, at any rate, a subject that deserves consideration.—On the

2d Question, little need be said. High land should, if possible, be level; leaves and grass never burnt, but ploughed down for manure; low wet ground should be drained, and defended from the current by crosses and side ditches. Trees should be girdled two or three years before opening the soil, the bark and small limbs fall and form a rich manure, and the timber can be carried off for fuel and other uses, to prevent falling on the grain, or forming a retreat for vermin after the soil is opened. The best time for opening soil is in autumn, the sods may be rotted, and the natural manures imbibed through the course of the winter. Indeed all arable ground whether new or old should be ploughed at this time.—The

3d Question is of great importance. With regard to fruit trees there is little choice. The apple, peach and pear are common; the pismion deserves culture. Fruit is certain in the coldest part of North-Carolina, every third or fourth year. This is sufficient encouragement for the culture of an orchard, for the farmer may then, cut of a good orchard, distill all that will be necessary for family consumption until the next fruit year.

Respecting grains, grasses, &c. the farmer may be guided in his choice by the following principles: first, as the climate is warm, chuse those whose roots will strike deepest in the soil; yet not so as to exclude, in the second place, a rotation of fibrous rooted plants to bind the soil when too much opened by the first kind. Third, chuse those which can be all, or nearly all, thrown back in manure on the very spot from which they have been collected.

On this last principle, and indeed on all rational principles, we must reject the culture of the tobacco-plant, unless it be in small quantities, for medicinal purposes. Every atom collected from the wheat-field can be laid back again for manure; so that it need never fail. The same thing may be almost said of flax, hemp and indigo. The flax and hemp seed, and relics of the indigo vat, form rich manures: and by ploughing in autumn, the soil, by the aid of the natural manures will lose nothing; but every planter knows how much and how rich the manure is in a single leaf of tobacco—all this is extracted from his field; it is exported from his country, it will never return, and the natural ma-

nures can never make up the defect. The 4th Question has engrossed the attention of farmers. It is the subject of almost all the pieces on agriculture that have appeared in the newspapers, yet it promises very little to the improvement of farming. The process in raising wheat, hemp, &c. is pretty well understood, and will never admit of any great improvement.

Every farmer knows that he must defend his crop from large animals by fence or ditch; if they be bad or broken down, it is indolence, and not ignorance, that is the cause. Against small insects dropping eggs in the milky grain, no sure remedy has yet been found. Soaking seed in water, with salt, lime, or sulphur, has been tried, I believe, without certain effect † Against their own effluvia, plants may be secured by placing them at a proper distance from each other; and from sweet oily dews which stop the pores, as well as from other disasters of the atmosphere, there is no remedy.

The farmer has no need of directions about the culture of his trees, unless it be that in pruning he should cut off, not the young thrifty, but withering boughs, and these an inch or two from the trunk, to prevent scars and defects. Some say trees may be transplanted any time from the sinking to the rising of the sap. I have not made the experiment.

In cultivating plants, it will appear from the doctrine of attractions, that the soil should be reduced to a perfect powder, especially at the time of planting or sowing; and indeed a cornfield should always be held in such a state. This is the reason why corn suits not an hilly, heavy soil, and should therefore be less an object of attention in the western parts of this state. In cultivating plants, manure should be equally spread over, and mixed with the soil, over rank straw or stalks, and root-worms. The farmer knows when his crop is ripe, and also how to collect it into his barn or stack-yard. ‡—The

5th Question has respect to its use. Vegetables are raised for the fruit; for leaves or blades; for the roots; for cloathing, as flax and cotton; and for manufacture, as pot-ash and Prussian blue. The last is composed of more than vegetables.

THE RELIGIOUS PATRIOT.

NOTES.

† When the egg is once dropped, there is no remedy but keeping the grain either too hot or too cold to hatch the egg, or otherwise to grind it out of the grain.

‡ A false floor, perforated with small holes, to let the grain through, and raised as a stage, a foot above the true floor, is an improvement in threshing. See Varle.

The remainder is unavoidably postponed till our next.

NOTE.

\* See Gentleman Farmer.