

called: The one Course System with accidental variations.

Attention has been so continually called to the subject of Rotation of Crops that nothing now remains to be said that has not been said before. Moreover, simple as it may seem, we have found it so extremely difficult to explain what is really meant by "Rotation of Crops," to those who have not resided in countries where it prevails, that we do not wonder that a deaf ear has been so often turned to the subject. It is a subject that, in fact, requires to be viewed in all its aspects, and in connection with the changes of the whole management of a farm which it involves, before even an imperfect notion of what it means can be attained. Rotation of Crops involves High Cultivation, a heavy outlay of capital for Machinery and Stock, a large expenditure for artificial manure and feeding stuffs, and for labour. It also involves very large returns in the forms of roots, grain, fatted cattle, wethers, lambs, wool, pork, with, perhaps, butter and cheese. We shall not go into the financial details at present, but merely remark that the calculations can be made with the greatest nicety beforehand, and that a careful, judicious man, who keeps within the bounds of his capital, is in no danger of disaster.

The object of Rotation of Crops, and of the High Cultivation which its carrying out involves, is to realize from the soil the greatest profitable return with the least possible expenditure by which that greatest return can be obtained. This is accomplished by a systematic method of cultivation, the purpose of which is so to manure and cultivate and treat every crop as not only to maintain the soil in a state of constant fertility, but to have it always in the very best possible condition for the crop which is to follow. The Rotation that suits one farm will not suit another, and the Rotation that may be adopted on a worn-out farm at the outset may soon have to be changed for one, which, as the land improves, will give more speedy returns in money.

Although it is now some years since we prepared the following notes of a discussion on this subject in England, they have lost none of their value, and we therefore commend them to the notice of our readers, on the understanding that we shall return to the subject at a future time with the view of presenting a workable elastic scheme, adapted to the various circumstances of our Nova Scotian farmers. It will be seen that each will have to adopt his own Rotation, but there are underlying principles, scientific and commercial, upon which all must be based:

From the earliest times of agriculture, the necessity of a Rotation of Crops, has in one shape or another been more or less fully re-

cognized. A correct system of rotation must be founded upon chemical and physiological laws; but the importance of a rotation of some kind was well recognised long before either chemistry or physiology were brought in as hand-maids to Agriculture. Now that these subjects are recognised as important, not only to "book farmers," but also, and in an especial manner to the practical farmer in the performance of daily duties—the subject of rotation still continues to hold a high position among the questions of practical agriculture, and its solution will be received as a boon to the farmer's art. We have advanced so far; we can now explain, in a measure, by a reference to scientific principles, the reason why rotations are requisite; and the principal desideratum is a knowledge of the most profitable details of practice. Every year sees us nearer the settlement of such points; and the discussions that have taken place at the Central Farmers' Club, and in the Agricultural Journals during the past few weeks, have afforded valuable contributions to our knowledge. Even at the beginning of the present century, so much attention was being paid to the subject of rotation, that Sir John Sinclair, in his work on Scottish Husbandry, observed:—"Of all the subjects included in the present enquiry, this perhaps is the most important, and the most difficult to discuss," the returns transmitted to him on this subject exceeding 80 in number. It must depend upon the judgment of the farmer, says Sir John, to adopt those modes of cropping best suited to the climate where he resides, the nature of the soil he cultivates, the size and situation of his farm, and a variety of other circumstances which will necessarily require his attention in determining which ought to be preferred;—for every farmer must be aware, in fixing on his rotations, that it is necessary for him to ascertain, not only the various articles for the production of which his farm is calculated, and which are likely to yield him the greatest profit; but also the succession in which these articles ought to be raised, so as not to diminish the fertility of his soil; or, as Lord Kames has well observed, so to intermix his crops as to make the greatest possible profit, consistently with keeping his land in order.

One of the most productive discussions that have taken place on this subject is that of the Central Farmers' Club in which the leading speaker, Mr. Thomas, referred first to the agriculture of the reign of the earlier Georges, when two crops and a fallow were the rotation which prevailed, and that of the Romans, when a fallow every other year prevailed. He then spoke of the improvements first effected in agriculture north of the Tweed. He said:—"I believe I am only doing justice to our friends north of the Tweed, if I state that it was the agriculturists of that country who, at the close of the last century took the lead in those vast improvements which began to distinguish our husbandry. They observed that the same crops repeated consecutively became smaller and smaller in their produce, whilst with intervening crops of clover or roots the produce increased, and this led them to the conviction, which the science of chemistry has now elucidated, that cereals and bulbs each extracted a different substance from the soil, and that this extracted matter, whatever it was, was in time restored either by the effect of the atmosphere or the agency of manure. The researches of the agricultural chemist were then unknown, but the idea was

correct in the main; and thus first arose the famous agricultural system of alternate corn and green crops, which has so long maintained its ascendancy. The rotation of cropping which on strong lands in Scotland first obtained, and still retains the greatest favour, is the six course—always premising that the land must be first made dry by draining—usually commencing with a fallow, or fallow crops, such as tares, or coleseed, and then wheat, beans, barley, clover and wheat. It is sometimes altered to fallow, wheat, clover, oats, beans, wheat; but by some there is an objection to this course, from the bean crop being so late in the rotation as to cause more difficulty in keeping it clean. But, if a landlord will insist that his tenant shall be bound down to one course of cropping, perhaps none better than one of these two could be found. The cultivation of the turnip soils of Scotland may be included with those of England. Whilst this energy was being displayed by our northern friends, enterprise and experiments were not wanting in England. J. W. Coke, afterwards Earl of Leicester, had succeeded to his vast estates in Norfolk, where a soil naturally poor, only produced the poorest crops when their cultivation was attempted, but the greater part presented only sterile sheep walks, or was devoted to the purposes of the warren. His active and energetic mind deplored such a state of things, and he resolved upon improvement. He saw that the soil wanted solidity before it would yield productive crops of corn, and the turnip and clover seemed to afford a remedy. And hence sprung the famous rotation of turnips, barley, clover, and wheat, which appeared for many years to promise unparalleled and permanent success. The Swedish turnips, then called ruta бага, were then first introduced to this country. Red clover had been but little cultivated, and the invariable luxuriance of these two crops, and also of corn crops which succeeded them, seemed to point out the Norfolk system as one without a rival. Was it to be wondered at, then, when landlords beheld the gigantic improvements which were here displayed, that they were anxious to introduce the like into their respective estates; and when they found persuasion unavailing, to compel their tenantry to improve by coercion? There can be no doubt but that when the stringent covenants and restrictions to which I have had so often to allude were first introduced, both their object and their tendency was to introduce an improved system of agriculture; but it has at last broken down, after holding its supremacy over half a century; and, indeed, that it contained the germ of its own dissolution was clearly seen many years back, by the late Sir J. Sinclair, and many other eminent agriculturists. I know not how the case may be in Norfolk; but this I do know, that in every part of England with which I am intimately acquainted, there is one universal lamentation over the difficulties which the system now presents. The Swedes, though more certain of a crop than they once were, through the agency of peculiar manures, are yet subject to strange and inexplicable diseases; sometimes resulting, as was the case last year, in the total ruin of the crop. The barley, where the crop of Swedes had proved large, and had been fed on the ground with the addition of cake or corn, we find in fruitful seasons laid flat on the ground; and when a period of wet takes place at the time of harvest, seriously sprouted, even before touched with the scythe, the grain un-