

may be scattered liberally over the roots of fruit trees. A sharp look-out should also be kept for insect enemies to the orchard. Now is the time to destroy them.

ROTATION OF CROPS.

The following is the substance of a paper read before the Ancaster Farmers' Club, by Mr. C. E. Whitecombe:—

In no art are the prejudices of habit so strongly rooted or so difficult to surmount as in that of agriculture; and although I consider it far from expedient to oppose such too suddenly, or to eradicate them, except by the progressive and enlightening effect of practical experience, yet it behoves each one of us to discontinue customs that we have good reason to believe should be abandoned, or that are radically bad in themselves.

In the introduction of a proper system of cropping of rotation we strike a blow at the very root of bad farming.

It is possible to drive in any direction in this our fair Dominion, without being struck by the appearance of an utter want of system among too many of our brother farmers.

We see fields so run out by continuous cropping as to show plain indications of deterioration in the very colour and consistency of the soil, while others, which have been pampered, petted, and crowded with manure (because perchance they are handy to the barnyard), are so strong and rich that no grain crop can stand upright upon them.

It has been well observed that no branch of agriculture requires more sagacity and skill than a proper rotation of crops, so as to draw from it the greatest amount possible of profit.

The reason which renders it imperative upon our part to consider and weigh well the benefits which will most assuredly accrue from the adoption of some regular system of rotation in our crops, is that no two plants of different kinds require for their nourishment the same substances of the same proportion.

For instance, the grains draw largely from the silica contained in a soil, and will therefore soon exhaust the supply of this ingredient in ordinary land. I say ordinary land, for in the virgin soils so great is the proportion of the humus or putrescent animal and vegetable matter, the most fertile portion of land, that wheat, or indeed, almost any crop may be and has frequently been grown with unvarying success for many succeeding years. Under the old system of farming this repeated cropping with wheat was adopted, and with apparent success. But it has been found that, even to the virgin soil made rich with their decaying vegetable matter, which has been deepened with each successive shedding from forest leaves, a time will come when the land, under an everlasting course of wheat, will begin to show signs of exhaustion.

The important principles which should rule the farmer in the adoption of a regular rotation of crops are:—

1. That, though a soil may contain all the mineral substances necessary for the nourishment of every variety of cultivable plant, yet there is only

a limited supply of mineral food necessary for such particular species of plant.

2. That some plants, as for example the grains, draw their chief nourishment from near the surface of the land, while others, like carrots or beets, seek for food at a greater depth.

3. Clover and all plants that put forth a luxuriant foliage absorb much of their food from the atmosphere, while cereals depend almost entirely upon the earth for their sustenance.

4. Certain insects live upon certain plants, and as long as their peculiar variety of food is furnished them, so long will they grow and multiply (instance the midge in the white wheats); but if a crop should intervene which is not the natural food of these our enemies, their larvae will perish for want of nourishment.

Variety is then one of the first rules by which the farmer should be guided in adopting a regular rotation of cropping.

Doubtless, by means of a copious supply of manure, sufficient to return to the soil those ingredients which the harvest has withdrawn, as succession of the same crops may be grown without the grain being either diminished or deteriorated, but the most practicable and convenient plan is to alternate the crops so that after a particular species of plant has been raised the land may have time to recuperate ere it be again required to supply a large quantity of the same kind of food.

The general principles upon which different farmers may work will, of course vary with those differences, climatic and of soil, which exist in their several localities. All considerations of proper rotation should be carefully guarded by the following rules:—

To avoid the immediate succession of similar crops especially if such be of an exhaustive nature, and to throw their return as far distant from each other as practical circumstances will admit.

To grow intermediate crops of grass and roots, soil permitting, between cereals.

To give the preference to such green crops as afford the best prospect of food for live stock, and particularly to those which will admit of cultivating by hoc.

Never to lay down to grass until land be free from weeds.

The subject of this paper is, like newly cleared land all but inexhaustible. I will therefore simply note a few of those courses which are now in vogue in Great Britain, only promising that in Canada wheat is undoubtedly the staple product, and that, owing to the length of our winters, we require much more fodder for our stock.

First, a Quadrennial Rotation:—

1st year, summer fallow; 2nd, wheat; 3rd and 4th, clover.

Now, I hardly dare here give my private views on the subject of summer fallowing, for I know that many farmers advocate, and indeed practically, adopt it. The use and abuse of the summer fallow may well form a subject for future discussion.

The advantages claimed for the above rotation are, that the system is economical, requiring nothing but the most simple operations and the most inexpensive implements, that it does not require so much attention to the management of the land as does a purely alternate system, for the repetition of the summer fallows affords plenty of time for the preparation of the land for wheat; that the labor is