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The Field.

New Use for a Turnip Crop.

UNDER the heading of "Cultivation of Turnips and other Roots," we published in our issue of Nov. 1st, the first portion of an article contributed by a valued correspondent. The amount of space required by the Prize List in our last unavoidably delayed the publication of the remainder of the paper, which we now give, adding, as before, that the writer, and not the Editor, is responsible for the opinions and suggestions offered, but at the same time commending the subject to the careful consideration of Canadian farmers:—

A great deal has been said about the overgrowth of wheat in Canada, and there is no doubt with much truth, but if our farmers would restore to the soil what the wheat crops take from it, over-cultivation with wheat would be impossible.

Having already glanced at what is done in farming in England, let us now see what is done in Canada. The nearest approach we make to a proper rotation of crops, is the mere changing from one crop to another. We grow wheat, then clover, for two years, then fallow, then wheat again, then oats, then peas possibly, with a kind of bastard fallow, then wheat again; in short, we grow the cereals until they will grow no longer; then we manure where we have it, and fallow where we have not. We trust to fallow not only to kill the weeds encouraged by our other management, but to restore the ground to such a state of fertility as to enable it to produce another crop. The consequences are small crops, foul fallows, and final poverty, not only of the soil, but of the farmer. Of the benefit of a naked fallow, no one who knows anything of farming has any doubt. The soil, when dry and pulverized, has a very strong affinity for ammonia; so much so, that it will adopt and deodorize any foul or decaying matter. All nitrogenous matters evolve ammonia in their decomposition; this passes off either into the atmosphere, if left exposed, or into the soil if the decaying matter is covered with soil. That which passes off into the air forms a grand magazine of fertility, to be absorbed wherever required. It is the ammonia which the soil, when well worked and pulverized, attracts; from the air that affords the future nutriment of the wheat crop; and it is that element alone that the naked fallow provides for the coming crop.

Many of our soils have but a weak affinity for ammonia, others have one much stronger. The soil which has the strongest affinity for ammonia furnishes the best wheat land. It is the clay in the soil, and possibly the humus, which possesses the affinity, and it is this fact which renders a porous clay, or one that can be rendered porous by draining, or by the admixture of manure, so fertile: but there are some clays

that seem to benefit but little by summer fallowing; and these have but little of the required affinity. To these soils, ammonia, in some shape, must be added, or you will have no wheat or other cereals.

Now, where can we get the largest and cheapest supply of ammonia? The British practice shows that this is procured from the consumption of the root crop on the ground, either by sheep or cattle, or both. But we have already shown that in Canada we cannot hope to consume on 100 acres of land twenty-five acres of turnips, on the soil on which they grow; we have not time, and we have not stock to do it, and we have neither room nor stock to consume them in the winter. What can we do with them? Why, this (and in this fact, though seemingly passed over, will consist the future fertility of our farms.) WE CAN ROT THEM IN THE GROUND. A rotten turnip yields as much, and as good manure, as one eaten; and in fact better: for the beast which eats the turnip carries off with it the best part of the root, while the turnip rotted on the ground gives back to the land all it took from it, and much more; for it gives to the soil all it has taken from the air; and as all it takes from the air is nitrogen or ammonia, it furnishes at once the best possible food for the cereals which are to be the following crop.

Let this fact be once established, and our course is easy. "But what horrible extravagance!" says one,— "how much more profitable it would be to consume them by sheep," says another. Well, I doubt these, and all other similar assertions. Our farmers do not think it extravagance to plough in two tons of green clover per acre, and they do not think it extravagance to lose a year's crop in a bare fallow, and some eight dollars per acre, the cost of making and working the fallow. Why then should we grudge a crop of turnips, which in return will ensure a good crop of wheat, or a larger one of barley, and at the same time thoroughly enrich the ground? Let us first see what our course would be under this system, and afterwards count the cost. We will begin with a crop of our ordinary spring wheat, the yield of which has been possibly from ten to twelve bushels per acre. This being harvested, we should drag the stubbles, and sow white stubble turnips, which before winter sets in will produce a tolerable crop of leaves at all events, and which must be ploughed under that fall. The next year the land must, at any rate, be a fallow, or hoed crop, on account of the weeds, thistles, &c. Very well; as soon as the early spring sets in, harrow the fall-ploughed stubbles, and sow turnips again. Sown so early, the fly cannot take them, and they will form a smothering crop. If they are sown early enough they will be sure to come. I would prefer the large white turnip. When they are well up into rough leaf, drag lengthwise and across, and you will then have a tolerable plan; or cultivate both ways with some of the tines taken out of the cultivator, then leave the ground till

the middle of June. Plough in the turnips again, and drill in Swedes with bone dust, or superphosphate, for a crop. Horse-hoe, and finally hand-hoe, and leave the Swedes till they attain full size; there will be a noble crop. Then cut them with a machine on the field, greens, roots and all, into small pieces. Plough them under, and leave them to rot and decay under the furrow. Cannot any one see that after this treatment the land will be in splendid tilth for spring wheat, or barley, and that (season admitting) you will be sure of a crop? Seed down the following grain crop with clover alone, not timothy and clover—timothy takes more than it gives. Take off as much of the first crop as is necessary for fodder, as hay, and plough the second crop under. Prepare the ground for spring wheat; or if you intend to grow fall wheat, you must plough the first crop of clover under as soon as it is in flower, and cultivate afterwards in the usual manner.

It strikes home to any one, that land treated in this manner would be greatly improved in condition; but objectors will consider it as a very expensive process. All this we will see by and by. The first thing to be done is to get the land into good heart at any expense; the next thing is to keep it so. Land in a poor low state is useless, a bill of expense, and a heart-breaking affair at the best.

In Canada we require most especially that the land should be in the very best condition, and in the richest possible state that will grow wheat without its going down and mildewing, and it does not go down or mildew as easily as wheat in the moist English climate.

Our seasons are so short that the grain has not the full time to mature, and our weather is subject to such sudden and severe alterations, that the grain needs all the support which can be given to it, to withstand the changes of temperature. We are troubled with insect plagues, but it is believed that if we could grow (as they do in England) forty, fifty or sixty bushels of wheat an acre, the ravages of these pests would be far less felt than they now are. The midge in a general way does not destroy more than twenty bushels an acre. If we grow forty bushels, and the midge does strike it, we should have, at all events, the chance of twenty bushels per acre left to cover our expenses; whereas when we grow only twenty, and the midge strikes it, all is destroyed, and time, labour and capital, wasted without any return.

Let us now see what sort of evidence we can adduce in support of this system. The first I shall mention is personal. On our farm in England, we always grew considerable quantities of mangels and turnips. As is usual, the turnips were eaten by sheep in the field, and with the well-known beneficial results. But one year we were disappointed of our sheep. In that part of England no one breeds flocks of sheep; they buy their ewes in lamb, the lambs are born on