

and must have to get rid of it some way, he said they used that for their wheat. I could not help expressing an opinion that it was pretty hard farming and must be difficult to make both ends meet, and he agreed that it was, and I think that if my forefathers had left me a farm on which such a system had been long pursued, I should be strongly tempted still to abandon farming as a pursuit or else to try it on virgin lands elsewhere. And yet a hundred years ago land in England was cropped in this way, and now it is, through proper treatment, as fertile as any part of the world, and our so-called run-out lands can be much more readily restored to fertility than new land can be brought into regular cropping order.

Now there was nothing actually wrong in the system of raising oats from lea-lands, nor in cropping potatoes on the land on which the cattle had been yarded; yet the results were most unsatisfactory. I urged on him to try as a change putting the manure on to his oat stubble, and taking a crop of roots, and he would find that, thanks to the extra cultivation the land would thus get, he would obtain a crop of roots and equally good wheat, whilst he might also probably get one or two good crops of hay; the manure heap would thus be largely increased, and following this up round the whole farm, he would soon find farming not by any means such a bad business. What profit could there be in such a system as he pursued? A strong team was required; there was considerable wear and tear of implements, a good deal of labour, and such poor results. The 20 bushels of oats hardly paid for the seed, and the labour of ploughing, sowing, harrowing, rolling and harvesting, and the straw about repaid the threshing; the 100 bushels of potatoes could hardly pay for the labour put upon them; the wheat, if it turned out well, would be profitable, but full advantage of the manure was not obtained, and in confining the wheat so much to one spot, its enemy, the weevil, would take up its quarters on the spot, and take its prey as soon as the patient industry of the cultivator had brought it to the stage that weevils appreciate. Then think of the cows turned out on to land impoverished by two years successive oat crops, growing up in weeds and natural grasses, and their mission not only to obtain food to maintain themselves, but to supply milk and cream to fill the butter-tub and cheese-press; and to enrich the land at the same time and prepare it for another crop of oats, whilst their droppings, the remains of their scanty gleanings, after their own carcasses were maintained, and their milk manufactured, went on to the yard to raise potatoes for the family; such a summering followed by a winter on straw, without meal or roots would not tend to develop the breed. And for such cattle any barn would do. The buildings would be neglected, the cattle would thus suffer from the cold, and would stunt in growth, thus everything acting and re-acting in its turn, tended still more to discourage the would-be farmer.

Now, as I have already said, I am not inclined blindly to follow in the footsteps of farmers in any other country. I feel quite satisfied that we cannot do as the farmers of Illinois are reported to have done in old times, cart the manure to the river bank and tip it into the water to get rid of it; nor the other well-vouched-for story of the man who

pulled down his barn and rebuilt it in a fresh place because he was so blocked up with the manure piled up all around it. We know that we want the manure but we have not arrived at the knowledge of how to make enough, but I will assume that we recognize the necessity for the rotation of crops; we have yet to ascertain which will work and pay best.

We start of course with oats at breaking up out of lea—thus providing food for our teams, and plenty of straw; following next with roots we must be guided by season and soil.

Potatoes require a very dry season in heavy land, and then, I find, do well, but my experience is that they should be planted not later than the first of June; after that time or with a wet season, Swedish turnips would seem to be the most successful; but this necessitates men being good hoers and the turnip crop has been so little cultivated in Nova Scotia that good turnip hoers are the exception rather than the rule.

Mangold wurzel give a splendid yield when the ground and season suit them, but the ground should be both mellow and rich, and they are liable to be injured by early frosts which would make them more liable to rot in the cellar.

White and yellow turnips come in as a crop that can be started much later, if from any cause the others have failed, and as they come in for early feeding, meet a want which is very generally felt, to keep the cattle from going back when they lose the grass in the autumn, and are first stabled and put on to dry food.

Next comes the question, is it advantageous to take one or two crops of roots in the rotation? From my own experience I am now inclined to try two successive crops; no doubt it absorbs a great deal of manure, but I think that the land is so much the better for the double working and manuring, that the crops succeeding shew the benefit of the treatment, the land is generally grateful and shows its gratitude in a substantial manner, but much depends on the nature of the soil—and here comes the most momentous of all the questions, and that which is really of most interest to the farmer; with what grain shall we follow the roots? This is the crop in the rotation from which we should look for our profits; those we have so far referred to are useful and profitable in their own way, but they were originally introduced mainly as a preparation for this crop.

It has been to corn, as all grains are called in England, that the farmers there have looked as their mainstay, and I can recollect the time in England, when a farmer raised a crop of turnips and gave them to sheep-awyers, who folded their sheep on the fields;—feeding the whole crop to them; the owner of the crop simply bargaining that each sheep should receive daily 1lb of linseed-oil-cake in addition to the turnips; the land was thus enriched for two succeeding grain crops; I paid a visit in 1861 to Mr. Mechi, the celebrated razor-man, who started a farm on a hard brick clay common and erected capacious and substantial farm buildings, much to the amusement of his neighbours, who prophesied that he never would fill them from his farm—and after working out his ideas of farming, shewed me 120 head of cattle, large and small, besides cows, team-horses, etc., which he kept on a farm of 170

acres, and these he kept, as he explained to me, not that he expected to make the slightest profit on them, but simply as manure makers to maintain the fertility of his farm and enable him to grow grain for the market; things have considerably changed since those days owing to the cattle disease and the increased consumption of meat by the labouring classes; but we are considering our grain crop, the crop which should and can be sold off the farm, and should bring in the cash to meet the wage bill and other expenses.

Wheat of course is the most paying, if it can be grown, and I see no reason why it cannot be; the causes that militated so much against it in old times were probably very much what I have already referred to, repeated cultivation in the same soil and insufficient change of seed, the former owing to deficient knowledge of farming, the latter to difficulty of communication with other parts; with fresh and thoroughly sound seed, and in new soil each year, I trust wheat may yet prove a success with us.

Ordinary Horse beans, a most valuable and paying crop in England, have been tried successfully here. They are found to grow well, but there is no demand for them at present, and they probably will not be grown in sufficient quantities to justify our attempting their export to Europe.

Barley gives a good bottom to grass seeds, and, as our brewers buy a large quantity and are now malting at the breweries, it is possible that we might do well with it as a crop—it generally succeeds well and although not as prolific as wheat appears to be less precarious. Of Rye I cannot speak, but it has the name of a hardy and prolific crop.

Buckwheat does well both in yield and in protecting and starting grass seeds, but it always seems to me more a crop for a patch than for large fields, as it requires such delicate handling to secure the grain. It is an old saying in England that no man should hoe his own turnips, he is too careful, but with buckwheat the converse is the case. I think no man should let any one else touch his crop of buckwheat. Next we come to the grass crop following the grain.

Hay is a crop that every one in Nova Scotia understands, or imagines he does.

Timothy and red clover and, in places where hay is raised for sale, more timothy and less clover, are selected as the seeds for this crop. Now, in the first place, we know that they do not ripen together.

Clover is good for certain purposes, it enriches rather than impoverishes the ground and gives a fair after feed; but if it is rich, the hay is too coarse and stick like, and the cattle do not eat it up clean when fed whole, although when cut and steamed it is capital milk making food. But as after-grass, although the cattle are greedy for it the first day or two, they soon tire of it and trample it.

Timothy gives a fine cut of feeding hay when the ground is rich, it spends well, but as generally cut it is I think an exhausting crop, and as it gives very little after-grass, the land is virtually kept up for the annual cut of hay.

Two tons is a good crop and this at \$12 per ton in the barn or \$24 in all, is a small return for the labor and manure expended on the land and the crop.

I think we may improve on our grass crop, a great deal of our land inclines to brown