

position, and then as it progressed to a height which was likely to be affected by the wind, I have gradually increased the depth of soil about the roots, until the great roots which are thrown out about the time the corn tassels are out were quite under the ground, and sufficient support had been obtained to prevent the corn blowing down or about. In doing this, however, there was no hurry. The first roots had plenty of time to extend beyond the depression, and consequently the effect would be to expose them to the action of the air rather than to bury them too deep.

The same facts reasoned out seem to account for the benefit which always accrues to Indian corn from repeated cultivation; the fibrous roots are more or less broken off and destroyed, but they soon recuperate, and spread out to a greater breadth, many no doubt getting nearer and nearer the surface, supplying the wants of the plant from the air, whilst others seek the manure and other elements of growth in the freshly moved soil. We all know when a fibrous root is broken off it throws out a little bunch of root branches, and as the "spongioses" or mouths are at the end of the roots, the greater the number of those mouths the more nourishment is assimilated, and the quicker the growth goes on. The fact has long been established that cultivation and moving the soil for corn is a necessity, and it is clear that greater benefit is derived from it than harm by the breakage of the fibrous roots. In what other way can the benefit of constant cultivation be accounted for beyond the mere destruction of the weeds?

VECTIS.

Eradicating Charlock.

For many years I had been fighting charlock before coming to Canada, and was surprised to read some extracts of a writer who said that "fallowing would kill and exterminate charlock." I am satisfied no such measures will ever entirely obliterate the evil unless the fallow is made for a succession of years, without any grain crop being sown. The charlock ripens *before* any grain crop and consequently some seeds are sure to be shed on the ground. The only way is to go over the field each year that a grain crop is sown, and hand pull every yellow flower before any seed ripens. It is not an expensive operation. I have had hundreds of acres at different times so hand pulled, and after one or two grain crops have been so weeded, there will be but a few scattering flowers seen, and they are very easily taken out. A boy who will work can pull pretty effectually three acres a day of such weeding. Of course any man with an ordinary amount of sense will so contrive his crops on the land infested by charlock as to have it hand pulled as rarely as possible; but when of necessity it is sown to wheat or grain crops, hand weeding must be done if the land is to be cleared. The reason why charlock is so difficult to

eradicate it is—that some of the plants will be bearing seed at the roots, and flowers at the very top, and the seed will grow directly it is formed sufficiently to crush between your fingers. Nothing seems to injure it. After it is once dried it will then grow under almost any circumstances. J. C.

Pasture Land.

To show that the management of pasture land is an important item in farming, any sceptic need only try the following experiment:

Protect a piece of old grass land, say six feet square, from the action of cattle's feet or grazing; divide it into strips (by taking off each alternate strip of turf), into pieces twelve inches wide; then shovel out each intermediate space to the depth of say four inches, removing all surface soil. You will now be in a position to see proved the extraordinary growth of grass sod when not pastured or disturbed. After the lapse of twelve months, examine the strips of grass and the intervening spaces. If the land is good and the sod old, there will be an immense increase of the grass strip, and a proportionate decrease of the interval. The second year it will have completely closed in; but to show the amount of the growth of sod, reduce (by paring the sides away) the grass strips to their old width of one foot, shovelling out the overgrowth as formerly. You will find that you have almost one-half of absolute increased sod, with earth attached, rich, and apparently fertile, and a very large quantity of it. If you are sceptical still, do the same every year, and place the turf parings in a heap close by. You will shortly see a large heap of the richest sod manure, and not at all corresponding with the subsoil from which you feel certain the sod and adhering earth have been taken. Now, if this test is applied to sandy land, and where the subsoil is poor and the surface rich (but the subsoil is of a different colour), the proof will be much more apparent. The parings of the turf edges will be of the same dark rich character and colour that the rest of the turf is, and will in no way resemble the poor light-coloured subsoil.

I have tried this experiment for many years, again and again, until I am quite satisfied of the effect of grass sod being of a most enriching character. But bear in mind that to have the full increasing advantages of the growth and accompanying fertility and restoration, the land must not be pastured and eaten down to the roots of the grass, but must simply be so kept down by mowing or pasture that there is always a tough, heavy rug of sod under your foot when you stamp on it, and not, as is usual in three cases out of four in pasture land, a few grass roots here and there, with intervening patches of bare earth. The sod must have been allowed to form thick and strong, and to entirely cover the earth with a thorough protecting mass of

defence. Under these circumstances, pasture land may be made to recuperate entirely its failing powers. So much and so great are the restoring powers of Nature when allowed rest to replenish man's waste. C.

Potatoes—New Varieties.

To the Editor.

Sir,—I have just received from D. G. M. Paterson, Dundee, Scotland, one of their cattle potatoes called "Bovina." Mr. Paterson tells me that, with extra culture, 40 tons have been grown to the acre.

The one received weighed 1½ lbs. It will take two years to become acclimated, and until then I shall not attempt to speak of its merits.

I have also received from Ohio a potato said to be "bug proof." It is a seedling grown by W. K. Young, of Wisconsin; is called "White Rose;" in shape it resembles the "Early Rose," though the skin is white, and it is not so large a potato. It is said to be of excellent table quality, and a great cropper, yielding at the rate of 600 bushels to the acre.

J. H. THOMAS.

Talk with Farmers.

MAPLE SUGAR MAKING.

The following little essay on maple sugar may not be of much interest to some of our backwoods friends, but as all are not familiar with the sugar bush, it is given for the benefit of the uninitiated. The farmer here referred to was a Lower Canadian, well versed in all matters that savour of "home production," rather than from the store.

"What sort of sugar season have you had near Penetanguishene?"

"Oh, fine; there has been a great deal of sugar made?"

"Do you work at it yourself?"

"Yes, and that is why I want to get the sugar bush. The land is bad; it is so stony that it cannot be ploughed, and there are good maples on it, and it will suit well for sugar making."

"How do you make the sugar?"

"In the spring, as soon as the sap will run, we collect the sap by tapping the trees with the axe, and setting troughs, which we make out of basswood, to catch the sap, we also make buckets for the same purpose. We then rig our camp and kettles, and having got our wood together, and the shanty fixed, we get the team and go round to the trees and collect the sap, which is brought to the camp, and we then fill all the kettles. The sap is carefully strained through woollen cloths, and soon boils. We keep the fire down as soon as the sap boils, and as it boils away we fill up the kettles until the syrup gets pretty strong. We then put all the contents of the kettles into one, to come