

The Farm.**Roots for Winter.**

Plenty of mangels means healthy animals and a full supply of milk, and he who one year raises plenty is not at all likely thereafter to neglect so desirable a crop. The mangel is comparatively a tender vegetable, and any hard freeze, one that will at all freeze the body of the roots, will greatly injure its keeping qualities, and so the crop should by all means be harvested before any danger of such a freeze. We begin to gather our mangels as soon as the middle of October, and as it requires steady work to secure our crop in a week or ten days, we expect to be all through by the 25th. With only a few hundred bushels, they may be left a little longer, as they can be hurried in on the appearance of cold weather. In *harvesting*, we have each man take two rows, and throw six rows together for a row of piles. In *storing* mangels two things are to be looked after—they must be kept warm enough so they do not freeze, and cool enough so they do not grow. Mangels are as easily spoiled by freezing as potatoes, and any amount of frost that enters the body of the root causes them to become worthless and decay rapidly; on the other hand, too much warmth causes them to sprout and this makes them shrivel and become corky. A moderate amount of shrinking without growing does not in the least injure their feeding value. If mangels are well dried when stored they are not at all likely to heat and spoil. In this respect they are not like turnips or Swedes. The same method and conditions that would keep potatoes well would be adapted to keeping mangels. If the cellar is so constructed that it can be well aired or ventilated on cool nights or days, so that the temperature can be kept down below 40°, I can think of no better place in which to store enough to last till early spring.

A good way of keeping mangels, although accompanied with considerable more labor, is in pits. Select a piece of dry ground where water will not settle in, or mush around the pits, and, if dry enough, dig one or two feet deep and about four feet wide and as long as desirable; fill with mangels from the wagon, piling to a height sufficient to make a steep slant to each side,—if a little dirt gets among the roots so much the better, as they are less likely to heat or shrivel; about every four feet apart set a common two-inch drain tile, or a tube made with three or four boards, into the top of roots, so it will protect clear through the roof of pit when covered up. Cover the roots now with a coat of straw or any other material to exclude the dirt, and on this put soil enough to exclude all frost, and as danger of colder weather comes on apply more soil, coarse manure or anything else handy, so as to keep all frost from the roots; when too cold the ventilating tiles or tubes can be taken out and the place filled with straw, and the whole covered with soil. A part or the whole of one of these pits can be taken out and placed in the cellar at a time when there is no danger of frost in handling them. One word as to *feeding* them. Some people, too lazy to properly cut them, claim that they may as well be fed whole, but I have always found it to pay, and pay well, to cut or slice all roots before feeding to any stock. Mangels can be sliced rapidly and very well by putting them into a long, rather narrow box, and by using a sharp spade, cut them, commencing at one end of the box; or they may be sliced in limited quantities with a knife and by hand; but in both these ways there is a liability of leaving some pieces nearly square or round, and of the cattle getting these pieces into the throat and choking. The best of all ways to cut any root is to use some sort of a cutting machine, and I much prefer those that use a sort of gouge for doing the cutting. This sort of cutter both cuts and breaks the mangel, and the pieces are much more irregular and do not pack so close in the box or manger when being fed. This sort of cutter does not cost over thirteen or fourteen dollars, and will cut from one to three bushels per minute according to the muscle used.—[Abridged from N. Y. Tribune.

Is There any Advantage in Very Deep Soils?

We have always contended that there was not, and time and again gave our reasons for it. It is important to remember that it is not alone deep soil that is to make good farm land. Though black, rich soil is a hundred feet deep, it is only the first foot or so, we repeat, that is of any material value to a good crop. Some roots go deep, but the chief feeding roots are near the surface, and in time they will exhaust the soil, and, unless the lower strata are brought to the surface at great expense, the crops will be poor and require artificial enriching. This was the case in Ohio. Here was deep rich soil, as deep as any one could wish, but in a quarter of a century or so it gave out and many a wheat field has been laid down again to grass, and cattle now graze over land which was once the grain-raiser's pride. The sub-soil might be brought up to the top, but the expense would be too great to make it profitable. No way is like the old way in many things, and no way of keeping up the fertility of the soil is like the old way of feeding it annually with manure. Soil may be as deep as one chooses and laughter and "pity" may be bestowed on our western journals and eastern farmers who talk about manuring, but the richest western soils are no exception, and the time will be when these deep soils will have to be annually manured like all the rest.

Even the deep plowing, the turning up of this rich sub-soil, is not always the best plan, even when the expense of turning it up is not so great an object, for notwithstanding the advice of the great farmer of Chappaqua to "plow deep," prairie-men never appreciated it. The universal testimony is, that in breaking prairie for cultivation the shallow plowed land yields the best crops. There is reason for it, but we need not give it here, where only the undoubted fact is of consequence. The English have no virgin soil, no black deep bottoms to their land, but by judicious and cheap management it yields to-day crops of which the black lands of Iowa might be proud.—[Ex.

Autumn Cleaning of Land.

No system of tillage can be complete where the Autumn cleaning of land is dropped out of it. Autumn cleaning and ploughing is the foundation of all good tillage. Too much cannot be said or written to urge continually its importance on the attention of farmers. Now is the time to grub, harrow and plough; more can be done now by way of destroying both roots and seeds of weeds than can possibly be accomplished in the hurry of other seasons. After the grubbing or light ploughing has been performed, and the stubble and surface weeds cleared away, the land should be allowed to stand some short time before deep ploughing for Winter should be gone on with. Now is the time that all the annual and other weed seeds will have made a start, and when the growth is visible well over the surface, the deep tillage ought to be set going, and the young growth of weeds destroyed, which is sure to be the case when turned into a deep furrow. This practice will save the farmer many an anxious hour of thought, as well as save time and expense at a very busy season of the year. It is altogether a mistaken policy that allows the land in tillage to lie idle a day; even as the corn is being stooked or stacked in the fields, the skim-plough or grubber should be at work; the exposing of a fresh surface is always beneficial to the land, and the fast shortening days of Fall ought to stimulate our actions to give the soil a fresh surface for the few remaining days of sunshine, which, at this season of the year, is of so much importance to the land. And while we are trying to draw the attention of farmers to this much-neglected work of Fall cleaning, we would also urge on their notice another matter in connection with Fall ploughing—we mean sub-soil ploughing. It is rather a strange thing that, while all our farmers are acquainted with the benefit the land derives from spade culture, yet so few of them can be found to use a sub-soil plough. In almost all cases where the spade is used, sub-soil, more or less, is always brought to the surface, and yet some

farmers are horrified at the idea of even opening up the sub-soil without bringing it to the surface at all. This is not at all as it should be. If you consider that your sub-soil is of such a nature that, as you would say, "your land would be poisoned" by bringing it up, then, by all means, do not bring it up; but at the same time you can stir and deepen it, and this you must certainly ought to do when performing your Autumn ploughing. By this means the soil is so opened for the quick percolation of surface water, and the consequent admission of air into it, that the soil in the course of years becomes gradually deepened, and of much greater value. By deepening the sub-soil, or even breaking its crust, you add to the temperature of the soil, evaporation is also retarded, and the land is enabled to hold moisture in reserve for a dry time. Such advantages as these should not be overlooked by the farmer in his Autumn and Winter ploughing. Persevere with it now; do not put it off till the Spring on any consideration whatever; the Spring will bring plenty to do for its own season—often more than can be got through in proper time. Therefore, if the work of cleaning has not been commenced long ago, let it be gone about now, and with energy, so that there may be full time to leave all the tillage land in as rough a state as possible, so that the Winter rains may be passed off from the lands quickly, and frost have full power to play its part in destroying myriads of insect eggs, as well as fining down and ameliorating the soil. Although the advantages of Autumn cleaning should be apparent to the general body of farmers, we do not find its universal adoption. We are pretty correct in saying that a title of the farming community do not practice it.—[Exchange.

Agricultural Inventions.

Among recent agricultural inventions we quote that Mr. Charles W. Dutcher, of New Brunswick, has patented an improved potato digger, in which the potatoes and soil are raised by a scoop from the hills and carried by means of paddles, operated by a chain belt from the axle of the digger, over a slotted frame, back to a shaker frame, which is vibrated by means of a zigzag projection on the inside of the drive wheel of the digger, and the potatoes are separated from the soil.

Mr. Thomas Bower, of New York, U. S. A., has patented improvements in tree protectors. The protector consists of a series of upright slats, that are spaced to admit light and air, and held together by elastic bands. These slats encircle the tree for a limited distance from the ground, and terminate at their end in outwardly bent barbed extensions, and may be made wholly of iron or steel, or partly of wood, and the bent portions of metal.

Shears specially adapted for cutting or picking grapes and flowers have been patented by John Sager. The jaws of the shears are made concave on their cutting edges, and upon the pivot which joins the parts together is placed a finger which extends along and a little below the cutting edge of the lower jaw. This finger has a spring-extension along the arm of the jaw and is riveted to it. The edge of the finger is made flat, as is also the edge of the opposing blade. The blade with the finger forms a clamping device, by which the grapes or flowers, after being severed, will be firmly held.

Philip Smith has patented an improved earth scraper, the body of which is made of a sheet of steel, struck up to form its sides, and an end plate is formed with flanges at its ends and on its bottom edge, and is secured to the sides and bottom of the body by rivets. Runners are secured on the bottom of the scraper by means of screws, that are beveled at their ends, and are concaved on their under side, to prevent the scraper from sliding around when in use. Handles are secured to the outside of the scraper by means of staple plates, and are secured by nuts on the outside of the plates. The draw bail is attached in any suitable manner.

"I am now past my three score and ten, and cannot put in practice the good instruction and information contained in the columns of the *Advocate*, but I feel inclined to support you in your interest for the farming part of the Dominion. I think all young farmers should have the *Advocate* and follow its directions."—ROBERT MCNAUGHTON, Hopewell, Pictou Co., N. S.