

a machine that promises to take up two drills at once, and eight or ten acres a day. Should it prove successful, such a machine would lighten the labour of taking up the turnip crop greatly.

#### STORING.

Having the turnips topped by whatever method, they are then ready for drawing in and storing up for winter. To those who grow large quantities, a root-house of some kind is indispensable. Those who are about to put up new buildings should bear in mind that it is well to have them so planned, and the place for holding roots so placed, that they can be fed to the cattle without having to carry them far, nor out of doors at all; to have them as convenient as possible to all the stock to which they are going to be fed.

Turnips can be kept very well in pits or heaps, covered over with a few inches of straw, and from six to ten inches of earth. They will come out quite fresh, but they are not so easily got out in winter as when in a root-house. By whatever method they are kept, care must be taken that they have sufficient ventilation after they are housed or pitted, as they sweat considerably. I have seen as many turnips lost by too close covering—thus heating and rotting them—as by frost from too light covering.

#### FEEDING.

Having got all the turnips safely stored for winter, the next thing is to feed them out to the best advantage. Almost all the stock on a farm will eat them readily, and will be the better for a few of them. They are, however, most suitable for cattle and sheep. A few fed every day during winter and spring to all the cattle on a farm will conduce to their health, and help to keep them thriving; and though they may not look much better for them during the winter, there will be a marked improvement seen as soon as the cattle are turned out in the spring. But the principal use that turnips are put to is feeding cattle and sheep for the butcher. When the weather is mild, or the feeding place sufficiently warm, either cattle or sheep will lay on flesh fast with turnips and grain; for a little grain or oil-cake may mostly be added with advantage; but many, both cattle and sheep, are made fat on turnips and hay, or even straw, alone.

#### COST.

The question is often asked: What does it cost to raise an acre of turnips? or what do turnips cost per bushel? It is one of those questions very difficult to answer. The cost varies greatly, according as the land is clean or otherwise. Some land may be in first-rate order with two ploughings and harrowings, whilst other land may require three or four ploughings and harrowings, besides repeated rollings, cultivating, &c. Moreover, land that is dirty and full of the seeds of weeds, will require more hoeing than land that is clean. I have seen estimates in the CANADA FARMER, giving the cost of an acre of turnips at from four dollars to forty-six

dollars an acre. I think that an acre of turnips may usually be put in, properly cared for, and duly stored, for about twenty-five dollars an acre, not counting anything for manure. The cost per bushel has been variously estimated from two to ten cents per bushel.

#### INSECT ENEMIES.

The turnip crop is liable to several insect enemies; the most destructive is the turnip fly or flea, which attacks the young turnip as soon it puts out its first leaves. Should the weather be dry, or the turnips thin, they will very likely destroy, or at least greatly injure the crop. The best preventive that I know of is to have the ground in good condition, and sow plenty of seed. If the fly is very bad, a little plaster, lime, ashes, or even dust, may be sprinkled on the young plants; when the dew is on this will have a good effect. Turnips are sometimes damaged, even destroyed, by grasshoppers and caterpillars; lice, too, in the fall, are sometimes very destructive; but the fly destroys more turnips than any other of their insect enemies.

#### STATISTICS.

In Great Britain and Ireland, the number of acres sown with turnips in 1868 is given at 2,782,131. By the census returns of 1861 the number of acres in turnips in Upper Canada is given at 73,409; the number of bushels at 18,206,959 giving an average of 248 bushels per acre. The average for this county (Northumberland) was 346½ bushels per acre; the average for this township (Hamilton) was 377½ bushels per acre. The highest average of any township in this county was 410½ bushels per acre. We have no doubt the census now about to be taken will show a large increase in acres; whether it will show an increase in the yield per acre or not, remains to be seen. The past season was not a favourable one for turnips in this section.

The average crop of turnips in Scotland in 1854 was about 540 bushels per acre.

Turnips do not seem to be grown to a great extent in the United States; in many of their agricultural statistics, published from time to time, they are not noticed at all. In the neighbouring State of New York, according to their published returns, the growth of turnips fell from 15,322 acres in 1845, to 7,578 acres in 1855. I have not seen the number of acres given in any of their later returns.

In the agricultural returns of the United States for 1861, the average crop of turnips is given at 270 bushels per acre, and of rutabaga at 394 bushels per acre. The number of acres is not given in any return I have seen. None of these can be called large crops. In notices of turnip crops and competitions, in the past volumes of the CANADA FARMER, there are instances given of 800 and over 1,000 bushels per acre.

W. R., Cobourg.

## Beet Root and Beet Root Sugar

NO. XVII.

In the previous articles I have discussed every plan which I have met with, and in so doing have waded through a large number of publications, and have endeavoured to extract from them and simplify the information they contained, and to bring down the whole into such language as any person of limited education and ordinary capacity could understand. The works at hand, and which have been most carefully read and analysed, are the following:—Ure's Manufactures and Mines; the works of Barachson; John Henderson Porter's; Crooks', the latest full account published; the Patent Office Reports of the United States for 1867 and 1868, which give most of the reports of the Commissioners of the United States sent to Europe to inspect and report on the beet root sugar manufacture; Dr. Voelcker's work on Beet root Distillation and Savalle's Stills for the Manufacture of Spirits; the various numbers of the magazines published in England, and called "The Sugar Cane," and which continually treats on the subject of beet root sugar; the Journal of the Society of Arts, in which the subject has been most exhaustively handled; and in addition, every newspaper attainable in which a paragraph appeared relating to the subject, and they have been not few; and all the information obtained resolves itself into the following facts, which for all practical purposes may be taken as a synopsis of the whole.

First. The growth of the root and the variety to be grown.—The best kind is the White Silesian, with a red, or rather reddish or pink skin, and the interior white. The seed of this should be obtained from Germany or France direct, and from some person who makes the supply of the beet seed a specialty. All the great seedsmen in England, such as Carter, Sutton, and others of equal notoriety and character, may be depended upon, if applied to direct, to furnish reliable seed; and doubtless the same seed can be obtained through any respectable seedsman in Canada, who will undertake to order it from England or Europe. The cost of the seed should not be a consideration—get the best. There is a wonderful difference in the quality of juice between the best and the more ordinary kinds. There are others of the same class: The White Silesian red top; the White Silesian green top; the Beta Imperialis, No. 1 and No. 2; Vilmorine's Improved White, and probably a dozen others; but all the best are believed to be one or other varieties of the White Silesian. This is also the most hardy and the most fit for Canadian growth.

In growing the roots, the land must be as good as possible, but not manured with recent manure. The land should have been thoroughly well manured the previous year.