

## Agriculture.

## SUGAR BEETS.

We quote a letter written by Mr. L. S. Ware, to the Elmira Farmers' Club, on the above subject. The report and letter are taken from *The Husbandman*.

"As to the comparative value of mangels and sugar beets, I am willing to admit that sugar beets have a higher per cent of sugar than mangels do, but they do not contain any larger, nor quite so large, an amount of albuminoids and flesh formers. Now the sugar is the least valuable part of the root, and as the mangels can be grown on the same ground, with the same care and manure, in about twice the quantity, it will pay much better to grow them. I have never yet seen a sugar beet of any variety that did not grow covered with a net work of fine roots from top to bottom, making it a slow and very disagreeable job to clean the dirt off and fit them for the pits after being pulled or dug. I can almost grow and harvest a crop of mangels for what it will cost to harvest sugar beets."

I beg to call attention to the fact that mangels contain rarely over 4.5 per cent of sugar, while 12 or 13 per cent is an average for German sugar beets. As for the comparative value of the two we have only to say, that mangels contain 1.1 per cent of flesh-forming, and 11 per cent of fat-forming elements, thus giving a total nutritive equivalent of 12.1 per cent. On the other hand sugar beets of an average quality contain 0.2 of flesh-forming, and 14.5 of fat-forming elements, corresponding to a total nutritive equivalent of 14.7. If the best hay be taken as a standard, we should be obliged to use 400 pounds of mangels or 336 pounds of sugar beets to obtain the same nutritive result, as with 100 pounds of hay. What your correspondent evidently wishes to convey as regards the sugar of the beet being the least valuable part of the root, is, that after the sugar has been extracted from the root, by any process, there remains a refuse pulp, that is as nourishing, weight for weight, as was the original root; such being a fact, the immense value of this product may be readily realized; it was, however, offered for sale at Portland for \$1 per ton.

Under these circumstances it would not be difficult to prove that there is more actual money to be made from growing beets and selling them to a beet sugar factory, and re-purchasing the pulp at a nominal sum, than from mangels—even admitting that the yield of the latter to the acre is double that of sugar beets.

We fear your correspondent does not appreciate the subsequent advantage of the "net-work of fine roots from top to bottom," found on all sugar beets. In reference to this we would say, that they grow in two principal directions from the root, and have for object the supplying of it with the nourishment required during its growth. When properly harvested they tear open the soil, frequently to a depth of eighteen inches, more effectually than could an ordinary sub-plough, consequently this in itself represents a saving in working the soil for subsequent crops. The washing of the roots prior to placing them in silos or pits is seldom done. In a properly ventilated silo there can be no possible danger from a second growth.

The cost of harvesting sugar beets with a plow varies from \$3.50 to \$4.00 per acre, which, in reality, is nearly the same as for mangels. The difficul-

ty of washing the roots was also sadly exaggerated; for, with proper appliances for holding water, and costing in France but a few dollars, the roots used daily on the farm may be washed in a few minutes, at a cost of perhaps thirty to forty cents per ton, or many times less than the cost of cultivation of mangel, even admitting that ten tons is an average yield of sugar beets to the acre.

## REPORT OF THE MINISTER OF AGRICULTURE.

From the Annual Report of the Minister of Agriculture we conclude the following items:

Some 35,372 letters were received and 40,286 sent out by the Department during 1881. The total number of immigrants and immigrant passengers arrived in Canada was 117,016 as against 85,850 in the previous year. The total number of cattle imported and subjected to quarantine were:—Improved breeds of cattle, 620; milch cows, 98 calves born in quarantine, 33; total, 751. The number of pure-bred sheep imported for the same purposes was 1,179, and 53 pigs. The export trade showed a falling off in both cattle and sheep. The number exported through Canadian ports was:—Cattle, 45,535; sheep, 62,401. In addition it is estimated there were shipped through United States ports 7,965 cattle and 9,465 sheep. This is owing to the lower freights prevailing there. The export of phosphate of lime amounted to 15,601 tons, valued at \$239,493, against 12,000 tons last year. A paragraph referring to the lazaretto at Tracadie, Gloucester, N. E., states there are now 22 inmates, representing all the states of leprosy. One death occurred and seven now cases admitted. The total expenditure during the year on account of the census was \$333,015. A special report on the alleged exodus from Canada to the United States by Mr. Lowe, Secretary to the Department, is given in the volume. He controverts a statement made by the Chief of Bureau of Statistics at Washington to the effect that 125,391 persons from the various Provinces of Canada settled in the States during the year ended 30th June, 1881. He endeavors to show that while the principal exodus from Canada to the States is shown by the American reports to be at Port Huron, it amounts in fact to but a few thousands at most. The total number of patents applied for was 1,955, granted, 1,732; fees received, \$2,856 against \$42,141 in the previous year. Canadian patentees were distributed among the Provinces as follows:—Ontario, 361; Quebec, 143; New Brunswick, 19; Nova Scotia, 23; Prince Edward Island, 2; Manitoba, 4; British Columbia, 6. The total number of copyrights, trade marks, industrial designs, and timber marks registered was 451; fees received, \$4,772. The total number of persons who went to Manitoba and the North-West in 1881 is reported in round numbers to have been 28,600, ascertained as follows:—Reported at Emerson, 27,212; Graham's party from the Western States, 399; along the frontier from Emerson to Fort Benton, 1,000. The nationalities were:—From Europe, 3,340; Canada, 21,513; United States, 3,758. Deducing 17 per cent. for floating population, it is estimated that 22,000 settled in Manitoba and the North-West. The total value of the effects of immigrants entered at the custom houses in Canada in 1881 was \$437,425 against \$335,899 in the previous year. It is estimated that the amount in money brought by im-

migrants from abroad was \$3,751,500. The money and effects reach the value of \$4,188,926.

## Horticulture.

## TOO MANY VARIETIES.

The desire to produce a large number of varieties causes many persons to fail in raising a supply of fruit for their families and prevents them from having any to sell. If they set out an orchard they first look over the catalogue of a nurseryman and select about as many varieties of apples, pears, cherries and plums as it contains. Inexperienced persons sometimes set out an orchard that contains as many varieties as it does trees. Such an orchard is never profitable, for the reason that it is not productive. Only a small proportion of the trees ever produce any fruit, and of these many are shy bearers. Commercial orchardists plant but few varieties, and the longer they continue in the business the more they are inclined to reduce the number of varieties they cultivate. Experience and observation show the kind of trees that are profitable. Few persons can afford to support a horticultural museum. They want an orchard that will produce fruit. Nurserymen keep a large number of fruit trees on their lists chiefly for show. They are glad to sell varieties that are not in favor with professional orchardists as there is little demand for them. If their opinion is asked, however, they will, if they are conscientious, recommend the planting of but few varieties. The owner of the largest orchard in this state recommends but three varieties for general cultivation. He finds that no kinds of trees are profitable that are not in the highest degree hardy and productive. The most extensive pear-raiser in the country now limits the varieties to six, though he commenced with sixty. In most localities two varieties of cherries and two of plums are as many as will prove to be profitable.

What is true of the orchard is also true of the vineyard and the plantation of small fruit. A few good varieties are preferable to a large number of doubtful character. In this latitude only a few varieties of grapes are hardy enough to live without winter protection, or productive enough to be profitable. Two varieties of currants, gooseberries, raspberries, and blackberries are enough to afford a change, and as many as will be found highly profitable. One may raise several kinds of strawberries for home consumption, but only a few varieties will be found profitable to raise for market. Only epicures will pay what it cost to raise the choicest varieties of grapes and berries. Only an amateur who has plenty of time and money can afford to experiment with a large number of varieties of doubtful character. The more varieties a person undertakes to cultivate the more time, trouble and expense will be required to take care of them. Experience gained in cultivating one kind will be of little service in the management of another. Each has different habits and modes of growth. One requires much pruning, another little, and a third none at all. The like is true in regard to protection and the application of fertilizers. A person who raises but a few varieties can become an expert in the management, but constant care and study are required to manage a great many varieties. Persons who are engaged in general farming can not raise what are classed as "fancy fruits" without neglecting their field-crops, which they can not afford to do. They should content themselves with a few varieties, and these should be the most hardy

and productive. The lists furnished by state and local horticultural societies should serve as guides to persons of little or no experience. Persons who have had experience in other localities would also do well to consult them.

A large variety of corn, small grains, potatoes and garden vegetables is generally undesirable and unprofitable. It is better to raise one kind of field-corn than several. If different kinds are planted on the same farm they will mix and the crop will not bring as high a price as could be obtained for corn of any one variety. Indeed, it is better to have all the corn planted in one neighborhood of the same variety, and it will be likely to be stored in the same elevator and shipped in the same care. Fences between farms will not prevent the pollen of corn from passing from one farm to another. If corn is to be saved for seed it is essential that it be pure. Every farmer needs to raise both early and late potatoes, but one variety of each will generally be found more profitable than several. Potatoes will not mix in the hill, as many persons believe they will, but they will get mixed in the bin and require labor to sort them for planting or the market. A mixed lot of potatoes will sell no better than a similar lot of corn. One variety of wheat, oats, rye, barley and buckwheat is easier managed than several, and generally gives better satisfaction. It is very difficult to raise several varieties of melons, pumpkins, squash, and cucumbers on the same farm without having them mixed so that the seed will produce fruit of mongrel character. One early and one late variety of cucumber and squash can be raised with advantage without much danger of mixing, as the time of blossoming is different. The like is true of a late and early variety of cabbage. It is desirable to raise several varieties of beans, peas, radishes, and lettuce, as the season for any one of them lasts but a short time, and the seed of pure stock can be obtained for a small sum. — *Chicago Times*.

## THE GRAFTING SEASON.

Every farmer and gardener should know how to do his own grafting. It is the easiest thing in the world to do, after paying a little attention to one who is at work. The few implements necessary should always be on hand, to-wit: a grafting-knife, which can be purchased at any seed store; a very fine saw, a long-handled screw-driver to keep open the split stock, a tin-cup in which to prepare and keep warm the wax, and a thin wooden paddle, or rather spatula, with which to apply the wax.

The cherry can be grafted now, as the sap of this tree begins to run early, and there is small chance of a cherry scion growing after this has taken place. The apple and pear can be set at any time up to the middle or even end of May, if the scions have been carefully preserved and have not yet started to sprout. There is no danger of a graft not growing if the stock be split so that the bark shall not be bruised, and shaping the scion wedge-fashion both ways, preserving also the bark uninjured, and placing the rim of the wood of both stock and scion exactly together, or at least crossing each other, so that the sap can intermingle. We prefer two eyes or buds to a graft, and would rather have only one than more than two. One year's wood should always be used when it can be obtained, as it is more certain to take and grows more vigorously, and the graft, should be cut from bearing branches.

We wish to remind those preparing grafting wax, that we have found four parts of rosin, one part of beeswax, and