

sent offered on the market we find, as a rule, the best varieties in the intermediate class. If now, for instance, different lots of "Yellow Intermediate Mangels" were identical, when bought under this name from different seedsmen, there would be no difficulty in obtaining good seed. Such, however, is not the case. One can pick out at least four distinct types of mangels offered at present under the name of "Yellow Intermediate." I

would advise those who have not already bought their supply of mangel seed, to ask for "Danish Sludstrup" as being one of the best strains of "Yellow Intermediate" on the Canadian market. Where the soil is too shallow or too heavy for the intermediate mangel, the globe-shaped or the cylindrical type should be preferred, as represented by the "Yellow Globe" and "Ideal or Yellow Eckendorfer" respectively.

Available swede seed seems to be more reliable than the mangel seed, and several good varieties may be obtained from the dealers. But real strains are scarce just as in the case of mangels. Broadly speaking, the globe-shaped swede types are better bred than the tankard shaped, and for myself I prefer such varieties as "Magnum Hornum", "Hall's Westbury" and "Bangholm" to the ordinary quality of "Elephant", "Kangaroo" and other tankard swedes.

"It is never too late", is a good and comforting phrase. Nevertheless, one should be very careful in the application of it, at least in regard to preparation of land and dates of seeding for roots. It is too late now to create absolutely first class soil conditions where part of the work has not already been done, through double ploughing and topworking between ploughings last fall. But we can still do the next best thing, that is give the root land a good spring cultivation. In all spring operations we ought to bear in mind the necessity of preserving the winter moisture. The soil should, if possible, always be "closed up" with a spike tooth harrow or some other smoothening implement after plowing, disking or cultivating.

Straw manure should not be used in spring time, as the straw tends to dry out the land and is apt to clog the tools during summer operations. It has also been claimed by some investigators that straw manure, used in large quantities, favors the activity of denitrifying bacteria and that it may on this account reduce the fertility of the soil. If the land has not been, or can not be, supplied with sufficient quantities of well-rotted stable manure, commercial fertilizers may be advantageously employed. It can almost be taken for granted that an application of nitrogenous fertilizers will prove economical in root growing. And while it is necessary to conduct a fertilizer experiment in order to determine the manurial requirements of a certain soil, an addition of phosphoric acid and potash will prove beneficial in the majority of cases.

Liquid manure is the cheapest nitrogenous fertilizer we have, and it should not be allowed to remain unemployed or to flow to waste as happens on most farms. Besides nitrogen, it contains a fair amount of potash, but practically no phosphoric acid. On soils deficient in this latter element an addition to liquid manure of Superphosphate or Basic Slag will therefore prove beneficial.

In the Province of Quebec we have generally had good results from the application of:-

- 75-100 lbs. Nitrate of Soda
- 75-100 lbs. Sulphate of Ammonia
- 250-300 lbs. Superphosphate
- 75-130 lbs. Muriate of Potash

in addition to 15-20 tons of good barnyard manure per acre. I believe, that heavier applications of fertilizers for roots would pay well on many farms, but this ought to be ascertained by accurate experiments before too much money is invested. The potash and the phosphate should be spread early in spring. The nitrogen should be distributed shortly before seeding when given in such small quantities as above mentioned. Where heavier applications are used, especially of Nitrate of Soda, it is better to apply part of the nitrogen before seeding and the rest as a top dressing at singling time.

Plant your roots as soon as the soil is in good condition to receive the seed, and remember always that it is better and cheaper to fight the weeds before rather than after seeding. Early seeding has invariably given the best results in the experiments of the Cereal Husbandry Department, Macdonald College. Mangels seeded on the 8th of May have on the average of three years yielded 5½ tons more roots per acre than mangels seeded on the 22nd of May, and 15½ tons more than those seeded on the 8th of June. In the case of Swedes there has been a difference of 15½ tons from seeding on the 8th of May, as compared with seeding on the 22nd of June, in favor of early seeding.

Whether seeding ought to be done on drills or

on flat land is a question which caused a great deal of comment in other root growing countries a few years ago, but it is now generally agreed that seeding on drills, or ridges, ought to be the exception, not the rule. The arguments offered in support of seeding on the flat are even more valid in Canada than in those countries with their comparatively moist summers and cheaper labor. On shallow, extremely weedy or poorly drained land seeding on drills is preferable. On deep, well-drained soils flat land culture not only results in a more reliable germination and a better preservation of the moisture than it is possible to obtain in drill culture, but it will also permit the use of the weeder or tilting harrow shortly after seeding, for weed killing and mulching purposes, and will thus tend to lower the cost of production.

Early seeding combined with relatively heavy seeding adds in a large measure to the attainment of a good stand, which is very essential to a good yield. People have shaken their heads when I have recommended 15 lbs. of Mangel seed or 4 lbs. of swede seed per acre for average conditions with rows 25 inches to 30 inches apart. I will admit that good results have been obtained with lower rates of seeding where the seed bed has been exceptionally fine, but those instances are rare and far between. On my travels, during the last two summers in different parts of Eastern Canada, I have seen only five root fields in which the stand was perfect. And in the majority of the other fields the poor stand, resulting at a rough estimate in a loss of from two to fifteen tons of roots per acre, was due to an insufficient quantity of seed.

Our discussion may be summed up in the following short advice: Extend mangel growing on good land only; use good seed, plenty of it; and sow early in well-prepared soil.

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Fishing That is Half Farming.

Editor "The Farmer's Advocate":

Most people like an occasional dish of oysters. It is an item on the bill of fare that is, at the right time and in the right place, so popular as to even be fashionable, and not only along the sea-coast, but away into the heart of the continent, oysters are sought by housekeepers and caterers when they wish to provide a particularly good "spread". But very often they are eaten, as a great deal of our modern food is eaten, without any thought as to where they came from.

The oyster is a very humble fish in its native state. To be sure, pearls are sometimes found inside its shell, but usually it is without any such aristocratic ornaments and is merely a dirty, muddy, hard-shelled animal substance that does not look at all inviting. Nearly all the oysters used in Canada come from the Atlantic coast, though British Columbia produces some too. Prince Edward Island is famed as the great oyster province of the Dominion, and from there barrels of the tasty fish are shipped to the city markets further inland.

Scientifically the oyster is known as a bivalve—a shell with two valves. These two valves, or halves, are joined together with a hinge which nature so skilfully fashioned that it allows the oyster to gape and thus to draw in some water. In sea-water there are always minute solid portions of animal and vegetable life, and it is on these that the oyster lives. It does not go out to sea like other fish, and it does not even swim, but lies half-buried in the mud not far below the surface. The egg of the fish, from which it is reproduced, fastens itself upon some smooth, hard surface and stays there for the rest of its life. It is full grown in about three years.

A queer way of living and growing is that of the oyster, one would think; but it is as nature made it, and although it seems a much more idle way than that of the fishes which swim great distances and work for their daily food, it is none the less wonderful.

Sometimes, however, there is a little doubt as to whether we should speak of oyster fishing or oyster farming. The days when oysters were very plentiful are nearly past, and the supply can now be kept up only by planting them and cultivating them under proper conditions. That is why we sometimes speak of oyster "farming", for getting a crop of fish that has been carefully cultivated seems more like farming than fishing.

Culture, or artificial growth, is nowadays recognized as the only means of keeping the oyster industry in existence. The demand has greatly increased in recent years, while the supply has very seriously diminished. In the earlier days there was a great deal of reckless waste, just as there was in the case of the tree. Men found, for instance, that there was lime in the shells, and they used to dig up the oysters and burn

them, just to get the lime from them. Then again, even when they gathered them for eating only, they took them in all sizes, small as well as large, and thus gave them no chance to grow. In these ways, and by reckless over-fishing, the supply was so seriously drained that it has never fully recovered itself, and to-day Canada's oyster fisheries are dying out. The Government reports show that while in 1882 there was a harvest of 64,646 barrels, there were only 27,299 barrels in 1907. This greatly reduced supply was not nearly enough for the Canadian market, and nearly \$370,000 was paid out for oysters imported from other countries, chiefly from the United States.

The Government has had men engaged on special investigations of the oyster industry, and they report that Canada could easily produce enough for its own markets if proper care had been taken and if there were better protective laws even now. But there has been some dispute as to whether the Dominion or the provinces have control of the fisheries, and so the laws have not been made as good as they should be. The lobster, that other hard-shelled denizen of the Atlantic, has suffered in much the same way.

It would, indeed, be a pity if our supply of oysters were ever to become exhausted. We are told by the experts that it need not, if proper measures are taken at once to save it. Culture, or oyster farming, is the only hope of keeping this tasty bivalve with us, and the people who live along the coast are being urged to plant oyster beds of their own and thus ensure a constant supply.

These oyster beds are selected in places where the current is not too strong and where the seabed is shelving and covered by mud and gravel deposits. To get the oysters up from such beds the fishermen use great tongs, about twenty feet long, each half of which is fitted with teeth like a hand-rake. Leaning over his boat, the fisherman gathers up a tongful of mud, with the oysters sticking in it, and brings it to the surface, where he picks out the full-sized fish and throws the small ones back. When he gets to shore, if he is not ready to market his catch at once, he puts them in floats where the water flows in and out and where the oysters can be kept nicely until he wants to ship them. Then he lifts them out with heavy forks into baskets or barrels.

The oysters from which the pearls come—the same pearls that we admire so much at the jeweler's—are the strangest of all fish. And the way in which the pearls are made is the strangest process in the making of fine stones and jewels. A grain of sand finds its way into the inner organism of the oyster, through its open valves, and there, since the oyster cannot do anything with it, it sets up an irritation. By this means a secretion gathers around the offending substance, and in due time it hardens into what we call a pearl. The pearl-oysters are found chiefly off the coast of Ceylon and the Persian Gulf, where the fishermen gather them by diving to depths of sixty or seventy feet.

In Canada we seek oysters not for their pearls, although a few inferior ones have been found even off our own shores, but for their value as food. In shell or in cans they are familiar to nearly everyone, and we may hope that there will always be enough to give us all at least an occasional taste.

Alberta.

AUBREY FULLERTON.

Winter Silo Filling.

Editor "The Farmer's Advocate":

The time for planting corn for silage purposes is almost here, and I thought it might be of interest to readers of "The Farmer's Advocate" to know of an experiment which I tried last year and which proved successful. It is always difficult, in planting corn for this purpose, to know just what acreage to put in in order to have enough and yet not have too much left over. This, of course, depends to a great extent on the season, and the size to which the corn grows.

I have two silos, one 12 feet by 28 feet, and the other 12 feet by 20 feet. Last year I planted 12 acres of corn, which I thought, under ordinary conditions, would just be about sufficient to fill them. The season proved very satisfactory, and the result was that I had a very large crop. After filling my silos early in October and re-filling them towards the end of that month, I found that I still had enough corn to fill another the same size as the smaller one. I did not wish to build another, so decided to feed from the smaller silo and re-fill it when it was emptied. I had the corn carefully stooked in the field, and did not put it into the silo until about the middle of January. I then commenced feeding from the larger silo and continued this until about the first of March, when I started to use that put in in January. I expected that my milk supply would drop a certain amount when I did this, as the corn seemed dryer