

the soil for the beet crop secures excellent crops of grain and grasses; moreover, the pulp of the pressed beets and the extra fodder produced by the improvement in the culture of the soil, enables the farmer to feed with profit double the quantity of stock. In fact, the beet crop requiring proper drainage, clean and deep cultivation, a regular rotation with abundant manuring, forces the farmer to follow out the best teachings of scientific agriculture. In the countries where beet root sugar is manufactured, the production of wheat has more than doubled since the introduction of this industry.

"In Germany the cost of beet root sugar is estimated at from 5 to 6 cents a pound. This allows for the cost of beets per ton, \$3.30; Excise duty per ton, \$3.39. However, the labor necessary in the manufacturing of the sugar is only counted at 30 cents per day for men and 20 cents for boys.

"Generally the best wheat producing soil is also the best for sugar beets. However, in prairie lands, and wherever there is an abundance of rich vegetable mould, this imparts to the beets some acids and salts which are found exceedingly troublesome in the manufacture of sugar, reducing the quantity and the quality of the product. Carefully made experiments are therefore necessary in Manitoba before launching into unwarrantable expenditure.

"However, it has been found in Russia that sugar beets do remarkably well on newly cleared farms. Large crops of excellent sugar beets were produced without manure.

"Soils containing much lime are generally preferred, as the beets they produce work better into sugar and contain a larger proportion than that obtained in other soils.

"Sandy soils are not liked; whilst mostly all rich, well drained loams, containing less than 60 per cent of pure clay, are considered excellent for the production of the sugar beet.

"However, as this industry requires a large capital, and as the returns will depend, to a very great extent, on the quality of the beets produced in the vicinity, it is therefore advisable to grow the beets and to test carefully their value with what is called the "Polarization Instrument" before establishing a factory in any district.

"Sugar beets should be sown as soon as

the soil is sufficiently dried, in early spring, to work without clogging. As a rule, the land should be thoroughly cleaned and prepared in the previous fall and sown as early as possible, to secure the moisture necessary to the starting of the young plant.

"They are best cultivated on the flat, rather than in drills, as it is important to grow them as much as possible under ground. The part which grows above ground, contains much less sugar in proportion to weight than that part which is kept under ground.

"As small beets contain a much larger proportion of sugar, it is important to sow in rows from 18 to 20 inches apart, and to thin out the beets at from 7 to 10 inches in the rows.

"On the continent about 20 lbs. of seed are sown per acre, whilst in England 8 lbs. only are sown. However it is no economy to save seed at the risk of having many blanks in the rows.

"Sugar beets, like all root crops, require deep and thoroughly clean cultivation, and the thinning of the crop should not be delayed; artificial manures such as guano, superphosphate, ashes, plaster, lime, &c., are very useful in giving the young plant a good start; but coarse barn yard manure should not be applied directly to this crop as they impart to the beets acids and salts, which spoil the juices for sugar making.

"All coarse manures are best applied to the crop which precedes the beets.

"Dry summers are more advantageous to the production of sugar in the plant, although the weight of crop is decreased thereby."

These extracts are thus given at this length because the information they contain is of the very greatest importance to the people of Canada. If the beets produced in Canada are free from deleterious acids and salts and favourable for the manufacture of sugar, then it is certain that the introduction of this industry will increase the value of farming lands and add immensely to the wealth of the country.

We understand that some experiments are to be tried; and it further appears from this Report that the Hon. Mr. Pope, the Minister of Agriculture, has caused to be imported some specimens of the best beet seed, which we believe would be given on application at Ottawa.

Scientific Items.

NEW HARVESTING MACHINE.—A cotton-harvesting machine has been invented which will perform the work of fifty hands a day, collecting and gathering into the bags the cotton from twelve acres with the assistance of two men, one boy, and a pair of mules. The cotton plant passes between two sections, and the foliage is left undisturbed for the second and third pickings.

FOSSIL MONKEYS.—Two fossil monkeys have been discovered in Tuscany, the first ever found in Italy. One was found in the Maremma and the other near Montevarchi.

SILVER MINES.—Valuable silver mines have been discovered in the neighborhood of Yamsk, to the north of the sea of Okhotsk, Siberia.

STEAMSHIP WITHOUT FUNNELS.—Two Austrian marine officers have discovered a method of conveying away the smoke from steam engines under water instead of through a funnel. By means of double ventilators, the smoke is compressed and forced overboard. By this discovery, the funnel, the only vulnerable part of armour-plated ships, will be removed; there will be a saving of space, security from fire, a saving of fuel and a better ventilation of boiler.

TREATMENT OF SMALL POX.—In the Berlin Charité Hospital, Small Pox patients are treated with xylol. From 10 to 15 minims are given in capsules, or in water. The results have been favorable. Dr. A. Löffler, of Stockneau, states that he has treated more