

the difficulties are great, too great, it is feared, for any but purely chemical minds. And although the writer contends that there are as many chemical minds amongst farmers as amongst any other class, yet it is certain they are a scarce commodity in any and every class.

The writer's advice to the farmer who goes into the manufacture of syrup from beets is, never mind the crystallized sugar; syrup will keep as well as sugar. Turn your attention to the quality of beet which your own farm produces, and endeavour to get rid of the earthy beety taste of the syrup, and you will have a "sweet" that is wholesome and useful, and as good as the best sugar house molasses, or the old-fashioned black treacle. The old Tunker families around Markham and Whitechurch, and doubtless in other German settlements, make this "sweet," and make it well; but they are very reserved, and will not impart the information to those whom they style "the Gentiles." The fact, however, that such sweets are made and used in Canada, remains, and there is quite enterprise enough amongst our farmers to find out the solution of the problem, as suited to each distinct kind of soil.

When you have plenty of syrup on hand, try every means and kind of filter you can think of, and it is a great chance if you do not find something that will suit your own roots; thus, for instance, well washed powdered bricks (that is, burnt clay), has a most powerful deodorizing effect on many substances. Many kinds of pure clay have a similar effect. If you find unexpected difficulties, don't hesitate to strike out a new path for yourself. Any substance that will cause a curdling in the syrup is always a hopeful experiment. If you curdle the brown substance in the syrup, which is, or looks and smells like burnt sugar and chicory, and the other impurities, you can then filter through any good medium, and thus remove the curdled portion and impurities, whilst the clear syrup passes free. White of egg, albumen of any kind, blood—all have this effect on certain liquors; so does gelatine, such as glue and isinglass.

Do not fear ridicule from those about you. Try everything, likely or unlikely, until you find what will suit your own roots and the peculiarities of your soil, and success will crown your efforts in the end. VECTIS.

DESTROYING BURDOCK.—The St. Louis *Journal of Agriculture* thinks that August is the time to attack and destroy burdock. It says the old stems with burrs on them should be cut with a spade or mattock just below the surface, and piled carefully together while green. After a few days of dry weather, set fire to them, and stand by till the last burr goes to ashes. This done, the young plants that have grown from the seed this year should either be pulled up or the rows cut off below the collar, and thrown upon the manure heap.

High Farming.

In a recent letter, Mr. Meehi maintains that the produce of the cultivated lands of the United Kingdom might, with profit to all parties, be more than doubled; and he has proved this, because, by careful cultivation of the ground farmed by him, though naturally poor and inferior, he has made it produce, not only double, but treble the average of the United Kingdom. This has been done with good profit to himself. In connection with so instructive a result and its causes, you will, perhaps, allow me to read a passage from a letter of mine, which appeared in a London journal early last year: "What is the cause of this triplicate produce upon soil inferior to the average? It is, in considerable measure, to be found in the fact that the *labour employed* costs 50s. an acre, whereas on the average of the United Kingdom it is probably only 15s. According to the Tiptree returns (Mr. Meehi says), our 44,500,000 cultivated acres, throughout the United Kingdom, would produce food of the value of £534,000,000. Our present returns are £170,000,000; increase, £364,000,000. Observe, that Mr. Meehi's was poor land. He describes it as naturally much below the average of the United Kingdom. It once looked very unpromising, very discouraging. We see what it is now! The experience of the gentlemen whom I have named has been confirmed by that of many others, who, much to their credit, have come forward and described what they have effected, not only in relation to the physical practicability of vastly increasing the product of the soil, but at the same time securing good, satisfactory profit from the operation."—*Mr. R. Fuller at the Social Science Association.*

Soils—Sand and Gravel.

Sandy land is more easily and less expensively cultivated than any other, and although very liable to be infested by running weeds, is readily cleared of them.

The great drawback on the profits of cultivation of sandy lands is their great liability to suffer from drought. Crops are, however, upon such more easily put in and more rapidly grown and ripened, but are usually deficient both in weight of grain and in bulk and strength of straw. There is no class of land, however, which will make a quicker return of capital by suitable improvement. It was shown in the article upon clay that any substance which might have the effect of opening and disinfecting the soil, has a very salutary effect. On the other hand, upon our sandy soils, any substance which may have the contrary effect, that of condensing and giving more compactness, will be found of great benefit. Thus, the incorporation of clay, which on many farms may be done by deep ploughing, or, as an American exchange puts it, by working the lower farm, will in-

crease the consistency of and improve the staple of sand.

Gravelly soils, which are very similar to the sandy in their general properties, like the latter are formed of various degrees of quality, ranging from the extreme of barrenness to great fertility. These barren soils are usually known as *hungry land*, from their faculty of absorbing and devouring a great amount of manure without giving a corresponding increase of crop. This tendency can, however, be overcome by the admixture of other earth, and indeed generally by a generous ploughing down of clover, and as we improve the closeness and consistency of their staple so do their properties improve.

The richer kinds of this land are very valuable, and I suppose there can be found no better or more profitable farms in Canada than in those parts of Norfolk, Oxford, Brant, and Waterloo, which lie upon the gravelly surface formation.

The wheat upon these lands is peculiarly fine in quality, and as they are also especially suitable to the growth of leguminous plants, such as clover, and of turnips, they are invaluable for a course of general husbandry. They may be ploughed and worked in any season without fear of injury; can be got upon very early in the spring, and are therefore highly prized in Canada, where our seasons are so short that every day from April to November must be taken advantage of.

Let not the reader, however, think that a gravelly soil is necessarily a good one, even when naturally rich. There is no land so unprofitable and yet so deceptive as that in which clay and gravel lie in alternate strata cropping out in the sides of hills and even of hillocks. In these soils we generally find a large number of land springs, keeping the land wet until summer, and then perhaps drying out for a month or two. These springs are moreover frequently strongly impregnated with oxide of iron, which is very prejudicial to the growth of all kinds of cereals. They are very difficult to drain, and generally, owing to the close incorporation of stones and clay, almost impossible to plough after an ordinarily dry spell.

There is yet another class of stony land which is, unlike the alternate strata of clay and gravel, exceedingly fertile. In such the staple is more of clay than of sand, and is intermixed with stone of a calcareous nature. This stone, like lime itself, helps to keep the clay disintegrated, and acts thus mechanically, at the same time stimulating the clay and neutralizing any natural coldness which may exist, forces the staple to give forth its fertility in the shape of food to the seeking plant. It is the constant combination of this calcareous portion with decaying vegetable matter (as clover) which will keep these soils in a high state of cultivation. We are most of us conversant with the story of the old country farmer who drew all his stones off his field, and found that he had so marred