

farmers can raise 35 and 40 bushels of wheat to the acre, as they have done for the last few years in Ontario, with very little manure of any kind, they will not be apt to pay much attention to the preparation of any special manures. The fact is there is a great amount of latent fertility in the majority of our soils in this Province, which only need *thorough culture* to make it available as plant food. It is doubtful whether this generation of farmers will progress sufficiently or require to put into practice any of the more advanced systems of scientific farming in the application of artificial manures. Necessity has compelled the other countries of Europe to sustain the fertility of their soil by a higher class of farming than we have. There are such extensive fields of virgin fertile soils here that they continually keep up the productiveness of the country as a whole. Besides, before the application of artificial manures will become general, there will require a wider spread knowledge of agricultural chemistry amongst our farmers. It cannot be expected that a class of men can apply the principles of any science without being conversant with such, and how many of our farmers have even a smattering of the science of chemistry and its application to plant growth? Another thing, our farmers have no confidence in artificial or commercial manures, and it will take a long time to make them conversant with such. With the exception of gypsum, none of the artificial manures are kept sufficiently in stock to enable a farmer to procure them at anything like reasonable rates, as there is not enough demand to warrant dealers in making a regular business of importing. Then there are so many adulterations that the experiments that have been made with artificial manures in this country are anything but satisfactory. The Government should have an inspector to examine all commercial manures, and they should be sold by the pound, according as they contained a certain percentage of available nitrogen, phosphoric acid and potash. If a firm choose to adulterate their manures so as to sell a lesser per cent. of these elements, let them be marked as a low grade article, and then the farmer could buy accordingly.

There is one thing certain, our farmers do not take the advantage of a great amount of plant food around them that could be made available, and which is allowed to go to waste. Take wood ashes, for instance, and our farmers often sell them for five cent bars of poor soap for a bushel. Now, a bushel of ordinary wood ashes contains about 4½ lbs. of potash and soda, which is worth, commercially, and according to the price already alluded to, 6 cents a pound, and there is enough phosphate and carbonate of lime to make the value up to 39 cents, and this bushel applied judiciously to corn, potatoes and clover, will make a return of eighty or ninety cents. Of course a good deal depends upon the nature of the land upon which they are applied, and this I hold is the same in the application of any artificial manure, and hence no definite rule can be laid down.

Another source of waste is in liquid manure, which is allowed to be lost for the want of proper tanks to receive it. The ratio of nitrogen in urine and solid excrement, is as 2½ to 1 in favor of the former; besides this the nitrogen of the urea is in a more available form as plant food. There is 6 times as much potash in the urea as in the dung, hence the importance of saving the liquid manure voided by farm stock is evident.

I am fully persuaded that it is not the want of manures that our farmers are lacking in so much as the proper application of those within their reach. Why artificial manures are not used to advantage is because the farmer does not know what elements are deficient in the soil. And again, the majority, without knowing what artificial manures can do, or what they cannot do, assert that they are too expensive, or that they are useless. They, of course, form their opinions on experiments which have been badly carried out, and, consequently, wrong conclusions are drawn. There is nothing more recommendable as a guide to a thorough knowledge of the application of artificial manures and their effect on crops, than trial plots, and thus by a small outlay, and a little study, the farmer would be enabled to know, with fair accuracy, what dominant element of nitrogen, phosphoric acid and potash is wanted in his soil, and which is the most profitable fertility.

Do not use dairy implements made of soft wood. They soon become saturated with oil of old butter, and injure the quality of all new butter they come in contact with.

Manuring Indian Corn in the Hill.

Although the season is so far advanced, the following will be of benefit to intending planters:—

Since farm labor has been so high, the farmer has been compelled to raise his crops with as little hand labor as possible, if he would make his receipts exceed his expenditures. The practice of fertilizing corn in the hill, on land in good condition, has in a measure been abandoned, and the manure has all been spread broadcast, not because in all cases it has been thought to secure the largest crop, but because the cost of labor has been such that it would not pay to put a portion in the hill. It is true the expense of hand dropping concentrated fertilizers is not very large, but enough to raise a doubt if there will be a sufficient increase of the crop to pay it. Much depends on the condition of the soil; if the soil is not very rich, either the whole surface of the land must be heavily manured, or a small quantity put in each hill if it is desired to have the young corn start with much vigor; a soil that has already been made rich and well pulverized, is in a condition to make young corn grow vigorously, if all the fertilizers are spread broadcast.

When it is decided that the soil is not rich enough to secure a vigorous growth without something in each hill to fertilize it, the very important question comes up, as to what is the best to put into the hill. If the object is to force an immediate growth of leaves and stalks, care should be taken to use only such fertilizers as are in a condition to be soluble in water, and thus be at once available for plant food, or the plants will get but little from them until it has been through a chemical action in connection with the soil.

Mistakes are sometimes made by using a fertilizer that will not become plant food until long after the plant is full grown, thus failing entirely to assist the growth of the young plant. Indian corn, as a rule, will not pay for hand labor to put fertilizers in the hill, but when large fields are to be planted, and a corn planter is used that will drop fertilizer at the same time, without any extra labor, there are many fields that will yield enough more corn to pay for the fertilizer thus used, but our corn fields are most of them so small that they are planted by hand labor.—[Mass. Plowman.

The Cow Pea as a Fertilizer.

The cow pea of the south is nearly, if not quite, as rich in nitrogen as clover, and of, perhaps, equal value for turning under as a green manure. Unlike clover, however, it matures in a few weeks from sowing, and can follow an early harvested crop like winter grain, and being turned under in the fall, puts the ground in splendid condition for the next spring's planting or seeding. In the south, where the corn crop matures and is harvested early, the cow peas are sown among the corn at the last working, and after the corn is harvested stock is turned in to feed the crop on the land, thus making it serve a double purpose of feeding stock and returning the manure to the soil. Southern growers also claim that if the crop is mowed and saved for fodder, the roots alone, like those of clover, serve a valuable purpose in enriching the soil, though in such case the improvement is quite likely to be largely due to the ground during the heat of summer being densely shaded by the growing crop, which conditions are favorable to the development of nitrogen in the soil. We are strongly of the opinion that the northern farmer, certainly as far north as Central Illinois, might find in the cow pea a valuable and cheap fertilizer. It could follow the winter wheat on the same ground and be turned under in the fall or sown early in the spring, and turned under the first of September, would put the ground in fine condition for fall sowing.—[Farmers' Review.

How to Destroy Burdocks.

Docks are not numerous in the rich grounds adjacent to the house and barn, and in the fence corners. As each one, when permitted to go to seed, produces about 10,000 seeds, they are bound to spread and occupy all the ground. The burdock is annoying and disagreeable, owing to the fact that the burrs adhere to everything they come in contact with. The colts get their manes and tails filled with them, they cling to the faces and tails of the calves and cows, and the dog is tormented by their adhering to his soft hair. In fact, they are a perfect nuisance.

The best way to get rid of the docks is to spade them out, and lay the roots up to dry. If that is

considered to be too laborious a job, take a sharp hoe and cut them off just below the surface of the ground, and in a few weeks go over them again, cutting all off that have sent out new leaves. Going over them a few times in this way will finish them all.

In half a day's time a man with a sharp hoe will generally cut all such weeds that are growing on an ordinary farm, and it is culpable negligence if they are not destroyed. I find no difficulty in keeping the weeds cut, and all the odd chores about the buildings done in parts of rainy days, when there is not time after the rain is over to go to the fields before dinner or supper.

The same treatment may be applied to wild carrots and wild parsnips, for as far as my observation extends, they only become noxious weeds when they are permitted to ripen their seeds in fence corners, and in the vicinity of the garden or farm buildings.

When weeds and briars are allowed to fill up the fence corners and thrive along the roadside, the farm presents a very unthrifty and unsightly appearance. A few of the half days that are spent at the village tavern, grocery or store, talking politics, if not in some worse way, will eradicate them all, thus adding much to the convenience and looks, as well as to the value of the premises.—[Examiner.

Fruit for the Farmer.

An exchange says: "Fruit and grain crops are apt to interfere with each other, and the taste that makes a man an expert in one, does not generally apply to the other. But this fact need not and should not prevent their culture for family use on a small scale. The small fruits simply require good land, the richer the better, and then clean culture. The practice of planting strawberries in beds, in pinched-up gardens, has done much to discourage their culture, because then all the work must be done by hand. Blackberries and raspberries are planted, if planted at all, next to the fence, where they grow in a tangled ticket, and soon become unbearable nuisances. All small fruits should be planted in an open field somewhere, not far from the house, in long rows, so that horse culture can be given on each side. The number of rows needed will depend, of course, on their length and the size of the family, but if well cared for, it will not require many. For instance: five hundred hills of strawberries, set 18 inches apart, and 500 more each of raspberries and blackberries, three feet apart, would go a long way toward supplying a family two or three times a day during the season; but if not enough, experience would show it, when the number could be increased or better care given. This number would occupy less than five rows across a fifty rod field, and would be almost an insignificant "patch" on a hundred acre farm, as regards space or the time necessary to give to it; and yet, unless the fruit could be bought very low at the door, it would yield an amount in delight and health not possible to produce in any other way. Strawberries, particularly, are not surpassed in popularity and health giving properties by any fruit in the world, unless it be peaches, and peaches are more difficult to grow. The horse work can be done in a few minutes by a man, while women and children can pull the runners from strawberry hills and the weeds that the cultivator does not touch, as well as the trifle of clipping that raspberries and blackberries require when the young canes are growing. The cutting out of the old wood, and the shortening in the laterals, any man of sense, or even a stout boy or woman, can do in a little time as spring advances, so there is no just reason why a family should be deprived of such luxuries."

The Germantown Telegraph says that it is pretty generally believed that the rag weed, which is more or less present on every farm, is the cause of bitter milk, whenever it appears. It is one of the worst pests upon a farm. It covers, when it gets a start, everything. It is even believed that the pollen from the blossom produces the hay fever, indirectly if not directly.

General Laurie well deserved the sword of honor and accompanying compliments presented him in London by Sir Alexander Galt upon behalf of the Nova Scotia militia. Just as appropriately, however, he might be presented with some emblem of agriculture, his enthusiasm, exertions and success therein having very much stimulated that industry, and his fine herds having been for many years a notable feature in Provincial exhibitions.