

THE CANADA FARMER.

VOL. XII.—No. 8.
PUBLISHED MONTHLY }

TORONTO, CANADA, AUGUST 15, 1875.

{ \$1.00 Per Annum.
SINGLE COPIES TEN CENTS.

The Field.

On the Exhaustion of Soils and Their Recuperation.

The members of the Paschim, Ont., Farmers Club were entertained and instructed, at a Spring meeting, by a paper from one of their number, Mr. P. Mahon, on the exhaustion of the soil and methods for its re-invigoration. Mr. Mahon, after alluding to the importance of the subject, said that the fact that the soil is becoming exhausted is now forcing itself upon the attention of farmers. He continued:—When the early pioneers came to this township some forty or fifty years ago, and by their industry and perseverance, and many difficulties, succeeded in clearing and reclaiming our farms from the waving forest, making them produce abundant crops of yellow corn in return for their labor, it was found then that almost any kind of cultivation was sufficient to ensure a crop.

This state of things gave rise to the impression that the Old Country system of careful cultivation and frequent manuring was not required in this; in short, that there was no danger of running out the land. This continued until within the last fifteen or twenty years; then a change for the better took place with regard to ploughing and harrowing, and the clearing of the land generally, but still with an equal disregard for a proper and judicious rotation of crops, or a system of manuring that would sustain the soil and keep up its productiveness. In short the practice prevails of taking, or endeavoring to take too much out of the soil and putting too little into it in return. The land, therefore, must, and is, deteriorating to an alarming extent under this practice. There are, no doubt, a good many exceptions to this rule, but they are the exceptions. I also know that I will be told by not a few that they know how to work their farms as well as anybody else. To those I would say, all right, my friends I do not presume to teach you, but would ask you to look around in your respective localities and there observe some of your neighbors who have been paying proper attention to the keeping up of the productiveness of their farms, and you will see that, even in adverse seasons, they have a fair and remunerative crop, while yours will little more than pay expenses. You might ask yourselves the question, if it would not be well to take a leaf out of their book instead of blaming the weather, or something else, when you are not yourselves blameless? The fact is, there is not stamina in the soil to sustain the crop through the severe droughts that of late years often prevail.

To remedy this state of things would be comparatively easy if our farms were large, and we had the capital to go to work with, but with small farms, and I may add, still smaller purses (and who was ever known to have a plethoric purse on a small farm?), it is not so easy, especially when the support of the family and enough to keep the thing running has to come out of it yearly, often leaving little for improvements. However, there is a good deal in trying, as I have myself experienced.

I would therefore begin by adopting a system of subsoiling and fallowing. Plough down a crop of clover on these fallows if you have it to plough down, if not, you can raise a crop of buckwheat to plough down. It is a good fertilizer, and can be cheaply done. A bare fallow should never be made, because there is no necessity for it. Sow your buckwheat early in June, so as to escape the frost, roll well after sowing, and plow it under, just as it is coming into blossom, being careful not to let the seed form. I have covered it when in places it stood four feet high, by attaching a chain to the beam of the plough just before the coulter, the other end to the doubletree over the furrow, forming a loop that drags in the furrow, and pulls it in under. Harrow every evening your day's work, and roll

when all is done—this is a valuable adjunct for killing Canada thistles.

Try sown in the fall, and Rape sown in the spring, to be eaten off by stock, are also valuable fertilizers. In fact anything that increases the quantity of provender for cattle, thereby enabling us to keep more stock, and to make more manure during winter, and also enriching the soil during the grazing season by their droppings, is highly beneficial. In this respect I may mention the cultivation of Western corn, to be used when the pasture fails in summer and as provender in winter.

I would also recommend dairy farming in localities adapted for grazing purposes. It will be found to be perhaps the quickest and surest means of recuperating the soil.

I have for many years practiced the drawing out of my manure in spring for my root crops, and have found that, notwithstanding the many requirements that may be brought against it, where we are obliged to confine ourselves to what manure we can produce on the farm, it is better that it should decompose on the soil, and enrich it, than to remain in the barnyard in the hot weather to be wasted by leaching and evaporation.

I have also been in the habit of preserving carefully all my wool ashes, and sowing them on my turnip ground before drilling, and harrowing after, so as to mix with the soil. I use it in preference to salt, and believe it to be better. Since adopting this plan, I have raised better after-crops on my turnip, than on my potato ground, the reverse being the result previously. It has also the effect of destroying grubs sometimes found in turnip ground, which prey upon the plants when they are even some size, doing considerable damage.

Lime may also be used to advantage as a fertilizer. The best mode of using it would be to mix it with muck, such as may be found in the low swales that abound on most farms. This muck should be carted out into a heap and mixed with lime, leaving it to sour before using. I have never known lime to be used without marked benefit, even on gravelly limestone land, where it is generally supposed there is enough before. It should particularly be employed to recuperate lands worn out by the repeated wheat cropping, and to warm up cold soils.

I would furthermore strongly recommend the putting down of tanks in barn-yards, so as to collect and receive and contain the liquid manure, and washing these yards by thaws and rains, all or nearly all, of which is generally wasted. This should be carted out in close boxes prepared for the purpose, to enrich our meadows and pastures by way of irrigation. The only argument I have heard advanced against this system, is the cost attending the construction of these tanks, &c. Well, I think it more economical to preserve and utilize what manure we have, than to be yearly purchasing salt and plaster to make up for this waste, and which at best, is of questionable utility compared to the above.

In conclusion I may add, that the foregoing, or any system that may be adopted for the recuperation or for preserving the productiveness of the soil, will be more than neutralized, unless a regular and systematic rotation of crops is observed. It is not my purpose to lay down what that rotation should be, that subject allowing sufficient scope for an essay in itself. This much I may say, that any general system that may be laid down, must be modified or amplified according to the intelligently directed experience of the farmer, save and except, such a system as may be based upon a scientific knowledge of the adaptability of different soils to different crops, and the relation the different crops bear to each other, according to the different substances extracted from the soil by each, together with the best mode of recouping the soil after each, and for all.

For such a system as this I look forward to our Agricultural College, when it once gets properly into operation, and think I will not be disappointed.

Thanking you, gentlemen, for your patient hearing, allow me to express a hope that the foregoing hints, imperfect and deficient as they are, amplified by your own more enlarged experience, may do much to recuperate our worn-out soil.

Sulphur for Potato-Beetles The New Potato Disease.

EDITOR CANADA FARMER:—Having observed a statement that a mixture of 1 lb. sulphur, 1 lb lime, and 4 gallons of water would destroy the potato-bugs, I lost no time in trying it. I found it effectual as far as the immature larvæ were concerned, but it had no effect on the full grown beetle. I also tried dry sulphur with equally good effect, and prefer it that way, as it saves the lime and the labor of mixing; besides every farmer has not a watering pot, and it is also cheaper, as the dry sulphur would be applied only where the larvæ are actually feeding, and a pound of sulphur would consequently go further.

I used a common tin flour dredge to sprinkle the sulphur on the growing potatoes, but it would be better to have a tin box with holes in the bottom and a strong socket on one side, in which a long handle may be inserted so as to save the fatigue of stooping.

On the 10th inst. I was called to a gentleman in the township, a few miles off, when I called his attention to a paragraph in the *GLOBE* of the 8th inst., respecting the new potato disease which has appeared in England, which he had not previously noticed. He immediately went out in his garden, and soon returned with a potato plant about six or eight inches high, with the stalk affected as described in the *GLOBE*, and a microscopic examination revealed the fungus very plainly. There were a few small potatoes of the Early Rose variety, a little larger than peas, attached to the stalk which was consigned to the fire. I have kept a sharp eye on my own potatoes, and have also mentioned it to some of my neighbors, but have neither seen nor heard of any further cases of the disease in question, and I trust the country generally will escape the visitation of that destructive disease which, if it should spread, would be far worse than the old disease and the ten lined potato beetle put together.

A late number of the *Agricultural Gazette* states that the new potato disease is increasing in virulence, and like all new diseases is very mysterious. The disease is limited to American varieties from English seed, the garden affording no instance of an English variety being affected, nor yet an American variety from imported seed. The disease is distinct from the old murrain in appearance, and also in being affected by weather influences. The old disease spreads most rapidly with rain, the new increased most quickly under the late dry sunny weather. It would appear that the real seat of the disease is in the seed tuber, and that when once acquired, it is hereditary.

SARAWAK.

In a letter of later date than the above, the writer says:

Farther observation has proved that sulphur will not destroy the Colorado Beetle on the potatoes. It makes them leave the plants for the time, but they return again. Some were enclosed in a tin dredge with sulphur, and in about an hour's time the young larvæ were dead but the old beetles were uninjured. We have just tried a mixture of coal oil and sulphur. I am not yet in a position to report results, but fear it will be too expensive. Ducks will pick the beetles off, but they will not stay amongst them long enough at a time to do much good, besides they will probably eat the parasites, and consequently do harm as well as good.

SARAWAK.

Burn up a tree, a stack of hay or grain, and nearly all passes off into the air. All that is consumed must have come from the air at first and is from ninety to ninety-seven pounds in every hundred.