

medium state. While thus perplexed, a capital little work fell into my hands, entitled Anderson's Agricultural Chemistry. In treating of the management of manure heaps, he says that during fermentation, mineral acid is produced in such abundance, that it combines with the ammonia, and thus fixes it, but the real loss is owing to the ammonias being allowed to escape; he also speaks of the advantage of covered manure heaps, but adds, (which I found by experience) that it is necessary to pump on them occasionally. Finding that it was not necessary that it should be kept actually dry, the thought occurred to me that by having a pit with an impervious bottom, artificially made if not naturally so, and arranging it so that only what rain actually falls over it can enter, all loss would be avoided. During the average time that manure is kept there is generally supposed to fall from 1' 6" to 2' of rain; allowing a certain amount to be soaked up in the manure, more to be evaporated, as this quantity only comes at the rate of three or four inches per month, it would be easy to ascertain what sized pit, sunk rather below the larger one, will prevent all leakage.

To explain my ideas more clearly, I will describe my arrangement for stowing manure. I commenced by pulling up all the wooden flooring of three stables constructed in the old style, for allowing the urine to pass through the floor, filling it up with earth and a foot or more of clay puddling, into which the planks are firmly beaten; a group being formed behind all the cattle and great care being taken to make them water-tight; in the yard and within 10 feet of the doors of the building is a large pit, about three feet deep, capable of holding one hundred and thirty loads to every yard in height, with a clay bottom, and sides sloping at about three to one, the ground being arranged outside the pit to throw back all rain water; the bottom of the pit is sloped towards a small pit or tank, sunk about 1.6 below the large pit, a small pump being placed in the former. My plan is to commence in October or November, and cover the bottom of the pit with loam or black mould for a depth of one or two feet; the dung and urine is then wheeled out and deposited in layers on this, which takes all soakage. I should explain that my original plan was to let the urine flow into the pit, but in practice I found it better to strew chaff, sawdust, or anything along the group, to soak it up, even to scoop it up with a square shovel; and it is held in suspension by the dung long enough to be wheeled the short distance to the pit. In this climate it is rarely necessary to use the pump till early in Spring, and then as often as the tank is near full; it takes but a short time when everything is well arranged. We generally turn our manure once for the sake of mixing the mould. I attach great importance to the bottom of my pit being sloped, and tank being below it, as it keeps the manure constantly in that moist state which so much assists in keeping up a proper fermentation. For this plan of a manure heap it is necessary that all the details should be carried out, for I can easily imagine where cattle are badly fed, and most of the urine lost, some artificial protection may be required to keep out frost, and allow fermentation to proceed all winter; but farmers who feed partially with a view to a good quality of manure will, I am confident, be satisfied with this plan if fairly carried out in all its details. This system is now advocated by the best authors on Agriculture, and correspondents in agricultural journals are constantly complaining of the ill effects of barn collars on the health of stock. Should any farmer still be afraid of the loss he may sustain by the escape of ammonia, he can mix sulphuric acid or gypsum in the tank, but when some bog earth is used the loss will be very small. Since I adopted this plan I saw a notice in one of the newspapers of a gentleman who seems to have made similar arrangements for saving manure. Of course I offer no claim to originality in this plan; many journals have been constantly advocating something very similar. Stevens, in his Book of the Farm, edited by Professor Norton, says that in his opinion the best plan is to open the midden and furnish spouts to the building, but as I myself, after reading these and many other works, was considerably perplexed, and as some brother farmer may be in a similar predicament, I beg to offer these remarks, hoping, if they should be accepted, they may be a small return for the valuable information I have often received through your journal.

A FARMER.

Restoring Worn-out Lands in Lower Canada.

To the Editor of THE CANADA FARMER:

SIR,—Having for a number of years past felt great interest in agricultural operations, I have been induced lately to purchase a farm on the Island of Montreal. It is what is called a good one, of about 160 arpents, consisting of various soils, from free black mould to tenacious clay. I have had now nearly three years' experience. I am well aware that to make a good farmer requires an amount of knowledge and application which people who have given the subject no attention little dream of. The profession of a farmer ought to rank higher in public estimation than it does; for surely the prosperity of Canada is bound up with it. I look with great interest for every issue of THE CANADA FARMER, which I consider of more importance to the country than many a broad sheet; and on several occasions have altered my plans in accordance with information conveyed in some of your special articles. Eastern Canada contains a large breadth of strong, good land, well adapted for wheat and barley; but, as you are doubtless well aware, it has been cropped down to sterility. To reclaim it will require a great amount of skilled labour, the cost of which has hitherto been comparatively moderate, but is every year getting to be more expensive. Above all things, it is labour which is required. Shallow ploughing has been continued so long that the ground has been robbed in a great measure of its nutrition. Deeper ploughing and more thorough stirring of the soil to a greater depth would make new farms out of old ones.

On my farm, I have a field of tenacious clay loam. When I took possession, it was so completely infested with scutch grass that not a square inch of it was free from the pestilent root. I was determined to eradicate it. In the process of following, I carted off a portion of the roots and burned them, with the clay adhering, and scattered back the ashes on the land. I so worked it with plough, grubber (a heavy Scotch one) and harrow, that not a root remained. I had a crop of barley (two rowed) off it this last year, of 43 bush. per arpent. A portion of it was much laid, which prevented it from filling, and which also caused some loss in taking it off the ground; otherwise I am satisfied it would have been 60 bushels. Now, I know that it had not received a shovelfull of manure for 8 years, and it may be any number more. What can be done with one field may be done with a thousand. I am certain that, by pursuing a system of more thorough culture, the annual crop of Canada might be doubled in a very few years.

The all-important subject of tile draining, of which I have done a very little, I should like to see greater facilities for prosecuting. As to manure, I take it for granted that every farmer makes and procures as much as he possibly can.

I see you long for the steam plough; and well you may. What a revolution it would make, especially in our clay loams. What fine work a steam digger would make. We have the inventor of the steam digger, Mr Romaine, of Peterboro', amongst us. Can no adaptation of it be had? It is well worth the attention of our agricultural mechanics, who, I am sure, would have all the assistance the ingenious inventor could give them. There is no doubt that the small farms of Eastern Canada could not afford the expense; but is it not possible to do it by association, or perhaps better by private enterprise? One steam plough might be sufficient for a thousand acres.

If my remarks are of sufficient interest for insertion in THE CANADA FARMER, I may at some future time trouble you with some account of experiments I have made with salt, which I see occasional allusions to in your columns.

J. R. E.

County Hochelaga, Feb. 23, 1867.

Beet-Root Sugar.

To the Editor of THE CANADA FARMER:

SIR.—In your paper of the 15th inst., which I have just received, I find a letter written by Mr. Carl Becherer, of Montreal, in answer to one from me in your paper of the 15th February. This gentleman is astonished at the expression of opinion that this most valuable branch of industry could not be introduced into this country, on account of the severe winters, which would make the storage of the beets impossible. I think if Mr. Becherer will read my letter again, he will see that I only stated that I had come to the conclusion that we could not manufacture the beet-root sugar in Canada to advantage in consequence of the short season between the maturity of the roots

and our severe winters. Now, my comparison was between Canada and sunny France, and not with Russia and Sweden, where I never enjoyed the pleasure of travelling.

I stated in my letter that I would not willingly throw anything in the way of improvement in Canada, and shall now regret if any other written shall deter Mr. Becherer, or what I have gentlemen, from establishing beet-root sugar manufactures in the country. I regret to say that the only establishment I ever knew in Canada, and one that I took considerable interest in, proved a failure and a loss to more than one person. When I wrote to THE CANADA FARMER, it was more to caution my brother farmers against sowing quantities of the seed to be brought out from France by the President of the Board of Trade, now journeying there, until there was a fair prospect of a factory being established and a fair price for the roots agreed upon, than it was to caution the manufacturers of sugar. It is all very well to agitate the growing of new crops in this country, such as flax, hemp, chicory, sugar-beet, &c., &c.; but I know from experience that the manufacturer and agriculturist must go hand in hand, and that neither will pay alone. If anyone intends making sugar from the beet, let him first determine where he would like his establishment, and then agree with the surrounding farmers to grow each a certain number of acres of the beets, and let the price be fixed, and a clear understanding established; then both parties will be satisfied. I feel confident that with a fair price the farmers can afford to grow the roots; for I have tried, and believe them to be as easily grown as mangolds; and Mr. Becherer knows the manufacturer can make it pay, and save the country 30 per cent. on our sugar. Therefore, let me beg that both interested parties will think no more of my letter, and never for a moment suppose that I wished to "dissuade parties from an undertaking that would lessen the price of sugar 30 per cent., and give occupation to thousands of labourers, and add a lucrative crop to the farming community."

Your correspondent kindly offers to give information concerning the manufacture of sugar from beet-root. Let me also take the liberty of requesting that he will furnish such in a letter to your valuable paper, and oblige at least one of your readers.

DENIZEN.

March 18th, 1867.

Flax Culture.

To the Editor of THE CANADA FARMER:

SIR,—Spring is fast approaching, when every farmer in the country will be calculating on what crop he will put in the ground that will be likely to be most remunerative; and while the price of wheat is so very high, it is to be hoped they will not be led away with the idea of trying wheat again on land already exhausted of all the properties for growing this valuable plant, and when they have not been able to produce over an average of from six to eight bushels to the acre for years back. I now allude more particularly to the front townships bordering on the lakes. High as the price wheat has attained, it has not yet reached that of flax seed, the ruling price of last year's crop being two dollars per bushel, and of four pounds less to the bushel than wheat. I am authorised to state, for the benefit of your readers, that Mr Currie, a respectable farmer, living on lot No. 19 in the 6th con. East, County of Oxford, harvested from six acres last year 128 bushels of flax seed, a fraction under 21 bushels to the acre, after sowing only 50 lbs. of seed to the acre. Every one conversant with a flax crop is aware the fibre is always of equal value to the seed, and sometimes realizes more; however, for seeds alone this is a fine return, and ought to encourage farmers to give this valuable branch of agriculture more of their attention. It is also well they should know the Government has reduced the price on the balance of the Riga seed imported last year to \$2 50 per bushel, and that it has been cleaned and prepared for sowing by Mr. Fleming, Seedsman, Yonge Street, who will furnish it to parties intending to sow it this Spring. All parties who made the trial of this valuable seed last year, admit its superiority over the "six" seed, producing as it did fibre three to four inches longer, and several parties had three tons to the acre, while two was the average from any other kind of seed. The proceeds of last year's crop from this seed ought to be carefully preserved for sowing this season, as much benefit will result from this course. From the general prosperity of the country and the bright prospect before the farmers, they can well afford to try an acre or two of flax, and judge for themselves. Many new scutching mills are going into operation in many sections of the country, and why not have at least one or two in every county in the new Dominion of Canada?

JOHN A. DONALDSON.

Toronto, March 25th, 1867.