

The Value of Farm-Yard Manure.

The subject of manures, farm-yard and artificial, is one upon which the CANADA FARMER has had much to say and often. To what we have said, we add an eminently practical treatment of the subject, which was delivered as an essay before the Fettercairn, Scotland, Farmer's Club by Mr. James Mitchell, of Montrose. Until recently, says Mr. Mitchell, the chief, and in many cases the only fertilizer the farmer used was farm-yard manure; and now that this is being to a certain extent superseded by artificial manures, there is just the danger that it may be too much overlooked. Farm-yard manure has its proper place in agriculture, and so has artificial manure. He proposed, in the following remarks, principally to treat the question of urine, its relative value to the solid excrements, and the most effectual manner in which the urine can be economised.

Some agriculturists hold exaggerated opinions as to the value of farm-yard manure, others undervalue it, while some manufacturers and agents of artificial manures only manifest their ignorance by treating farm-yard manure slightly, and decrying it, in season and out of season, on the absurd supposition that by doing this they will induce the farmer to order more artificial manure than he otherwise would. The only valuable ingredients in farm-yard manure are the urine and the solid excrements. The other ingredients are simply straw, &c., which have little or no value in themselves, and simply serve to absorb and keep together the urine and solid excrements.

The approximate value of the urine of the horse, cow, sheep, and pig, is as follows:—Horse, 30s.; cow, 20s.; sheep, 30s.; and pig, 10s. per ton. The approximate per centage of ammonia contained in the urine of these animals is: Horse, 1.6; cow, 0.9; sheep, 1.7; and pig, 0.4. The phosphates contained are trifling, being about 1 per cent. in the horse and pig, about 2 per cent. in the cow, and about 3 per cent. in the sheep. The additional value of the urine of these animals consists of a small percentage of potash and soda salts, &c. Comparing these facts with the approximate composition and value of the solid excrements of the same animals, we find that the solid excrements of the horse are worth 15s. per ton; the cow, 10s.; the sheep, 25s.; and the pig, 6s.; or, in other words, the value of urine is about double that of the solid excrements. In comparing their value, however, it is only fair to say that the value of the solid excrement is principally owing to its being saturated with the urine. Thus it is evident that if anything is to be done in economising the farm yard manures, it must be the urine that is to be considered first.

In considering this subject, a good deal of valuable information can be obtained from the Chinese. We are often apt to consider these Celestials as little better than savages, it is, however, a well-known fact that they are much before us in this matter, as in many others, and there is no doubt that we are the losers by thus disparagingly treating them; and their ideas, or rather ignoring them altogether. It is certain that they are now and have been for hundreds of years in many respects very far advanced in the science of agriculture, and amongst them the excrements, liquid and solid, treated and prepared in various ways, serve almost entirely as their fertilizers. One writer says: "Human urine is, if possible, more husbanded by the Chinese than night-soil for manure; every farm or patch of land for cultivation has a tank, where all substances convertible into manure are carefully deposited, the whole made liquid by adding urine in the proportion required, and invariably applied in that state. The business of collecting urine and night-soil employs an immense number of persons, who deposit tubs in every house in the cities for the reception of the urine of the inmates, which vessels are removed daily with as much care as our farmers remove their honey from the hives."

It may be roughly estimated that the average urine passed by a cattle beast daily is about two gallons, so that in the course of a twelvemonth each cattle beast would pass from three to four tons of urine, the value of which would be from £5 to £6; and, in addition, a proportionate quantity and value of solid excrements, or, in other words, the total excrements, liquid and solid, obtained from a cattle beast in a year would be worth from £8 to £10. Thus, supposing the case of a farmer with an average stock of cattle during the year of 50 head, he would collect from 150 to 200 tons of urine per annum, showing a value of £200 to £300. Of course a very large proportion of this would go direct to the soil during the time the cattle were upon the grass: still it is not over-estimating the value of that which can be collected, taking into account the urine from the horses and other animals on the farm, to say that, provided the whole urine could be collected, the quantity would represent a value, say of £100, or even more. Of course, as it is at present, nothing like the whole of this is lost, a great part being absorbed in the court bedding. In open courts a very large proportion is of necessity lost, being washed away by the rain. In covered courts, however, there is also a large proportion lost by evaporation. Perhaps the most economical plan would be to have the covered courts properly paved, with channels conducting to a tank or reservoir where the urine would collect. These tanks would, of course, then be emptied from time to time, and applied to the soil as required.

Without going very minutely and at length into the details, it would be impossible to give practical hints further upon this matter, but it would be well to state that it would also be a great saving were the courts from time to time to be sprinkled with vitriol. This could be done very simply by means of a common watering-pail. The ammonia fumes caused by evaporation would thereby be fixed, and, as a matter of course, the loss of the most valuable and important ingredient of the urine prevented. The sprinkling the courts with vitriol would also have a very beneficial and important effect, as it would keep the courts much sweeter, and therefore tend to preserve in better health the animals in the court. The vitriol would require to be used only sparingly, and diluted with water before application.

It may also be worth while to state that the fumes arising from the manure in the courts have a peculiar chemical action, which is injurious to the stone and lime, and in course of time would destroy them. The sprinkling of vitriol from time to time on the courts, as above explained, would to a great extent check this. In connection with these remarks, it may be of advantage to bear in mind that, in turning the dungheaps, there must of necessity be a great loss of ammonia by evaporation. This loss can easily be entirely prevented by the use of vitriol sprinkled during the time the heap is being turned.

In conclusion, Mr. Mitchell said that there was poetry to be found even in a manure heap, and so Pope, one of our greatest English poets, could write—

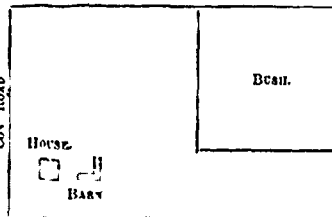
See dylaz vegetables life sustain,
See life dissolving vegetate again.
All forms that perish other forms supply;
By turns they catch the vital breath and die.

Laying Out a Newly-Cleared Farm.

EDITOR CANADA FARMER:—My land is cleared, but is not yet divided into regular fields. I would like to know how to divide it so as to carry on a good rotation. I sow wheat, barley, oats, peas, turnips and potatoes. I have 110 acres clear, and 34 acres in bush and about square in one corner, the buildings in another corner. The lot is 120 rods wide and 192 rods in length.

FARMER.

Grey Co., Ont.



Will some of our readers who have satisfactorily laid out farms give their ideas on "Farmer's" case. This is one of those cases where the experience of one farmer is of value to the whole fraternity. And most valuable of all is the experience of those who, having laid out their lands years ago, would now lay them out differently if they had to do it over again.

Improvement of Clayey Soils.

One of the principal defects of clayey soils, especially where they rest upon a subsoil of the same nature, is the excess of water which is held in them. The only effectual way, in a majority of cases, to get rid of this is by thorough underdraining. This draws off by imperceptible degrees all the excess of water, and opens the soil to the free admission of the air, which in its passage through it imparts warmth and such fertilizing gases as it may contain. Open drains or ditches, though less effectual, are useful. In some cases, water furrows, terminating in some ravine or ditch, serve a good purpose. Lime is exceedingly useful as an ameliorator of clayey soils, inducing chemical combinations, the mechanical effect of which is to break up the too great tenacity of the clay, while it adds, at the same time, an element of fertility which may perhaps be wanting. Gypsum, or plaster of Paris, has the same effect in a still more powerful degree. Ashes, coarse vegetable manures, straw, leaves, chips, etc., are also very useful, adding new materials to the soil, and tending to separate its particles and destroy their strong cohesion. Clayey lands must never be ploughed when wet.—*Carolinnian.*

Started To Be, "On Keeping up Fertility."

EDITOR CANADA FARMER:—I think I could write an article out of my own experience that, if it was of no more value, would fill up a spare corner; so, here goes, on a subject that is most interesting to all farmers. How to keep up the fertility of the soil at least cost.

I have farmed it in Canada for thirty years, and this subject has occupied my attention all along, and I find my farm

becoming richer every year. Still the crops will fail if the season is not propitious in spite of all precautions. It is an endless subject, so I may quit at any time and post the dollar for my year's subscription, and let those who have more will. I find my time almost too short to read all that is written in the CANADA FARMER without adding to the amount to be read.

I am proud to tell you that I have all the CANADA FARMER bound but the last volume, which I have safe and ready for the binder. Go ahead and prosper. There is nothing of more importance to the farmer than the Stock interest. That department of the paper alone is worth the dollar ten times told.

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Ontario Co., Ont.

We are sorry that our correspondent got off the track when he started out so promisingly to write on keeping up fertility. Cannot he send us what he was about to say on the subject when he altered his mind and began complimenting us? The time occupied in writing out a few details of his experience will be invested profitably to his brother farmers.

Pithy Turnips.

If we bury turnips in the open ground and leave them there till spring, they come out of the earth quite as good as when left in the soil; but if we put them in a cellar, though that cellar be cool, they get gradually worse and worse, till by spring they are good for nothing. This does not seem to be from any exhaustion of the roots by growth, for the deterioration commences before growth begins; nor is it the result of the evaporation of the juices, for it takes place in quite damp cellars. For practical purposes it does not make much difference why it is. But we wish to call attention to the simple fact as illustrating how very slight may be the causes which make a difference between a good fruit or a good vegetable and a poor article, though perhaps in both cases the variety may be the same.

The cellar is a little dryer, a little warmer, and perhaps a little darker or lighter on the whole than the out-door case; and however these may operate on the differences, they are of course in some way accountable for them. We often wonder why it is that a fruit in one place does remarkably well, while perhaps not fifty miles away the kind is no good at all. There is but a trifling difference in climate and maybe so far as we know none in soil or other circumstances, but still there are surprising differences in the results.

It is often said that our lives hang but by a thread, but it seems that in all things it is about the same. A thread's breadth makes all the difference between success and misfortune.—*Ed.*

Threshing Beans.

EDITOR CANADA FARMER:—In your issue of Dec. 15th, I noticed a piece giving information about threshing beans, and wishing to hear from any person of experience regarding the same.

In the Province of Quebec, where I reside, we all use the two-horse tread-mill. When we want to thresh beans, we take out the concave, which is in two halves, and take two pieces of board the same width of the concave, cut them the same length, and dress the ends so that they will go into its place. Then tighten them up till they almost touch the cylinder teeth, and fasten them there. The horse-power does not need so much elevation as for threshing grain, so that the beans will not need to be fed into the mill too fast, as they are apt to go away in the straw on account of no teeth being in the wooden concave to loosen the straw. If right managed, none is lost in that way.

I have found this to be the best and quickest way of threshing beans, as there is scarcely any of them gets split, and if there happens to be a few green pods, they slip through without threshing, which leaves a much better sample of beans.

Ormstown, Q.

FARMER.

WHEN SHUFTING PULLEYS from smaller to larger or vice versa, take three times half the difference between the diameter of the pulleys, and the result will be the length of belt to take out or to put in.

THE NEW PYRACANTHA FOR HEDGES.—S. H. Parsons, in his address before the Rural Club of New-York, said that he had experimented fifteen years with the *Crataegus pyracantha alba* for hedges, and he regards it as one of the best plants for this purpose; that it has endured, unharmed, 14 degrees below zero, and is readily distinguished from the old *Pyracantha*, which is not hardy, by its smaller and narrower leaves. These change in winter to bronzed green, but do not drop. It is clothed with strong thorns, is easily cut to a dense hedge, and may be kept down to a foot high for borders, or formed five feet high for farm hedges.