



### Manure Saving.

NEXT to the production of manure, a wise method of storing it and preparing it by due admixture, fermentation, &c., for application to the land, is important. As in money-making, so in manure-making, much depends upon a proper economy and judicious use of the wealth actually in hand. Manure is wealth without a figure of speech, and should no more be wasted and mis-applied than money. A very large per centage of the dung produced on the farm is often lost for want of a good way of hoarding it up until fit for use. Now we are not going to advocate an intricate and expensive system of pipes, pits, vats, cellars, &c., such as though proper and practicable enough in the case of an agriculturist like Mr. Alderman Mearns with plenty of money at command, and lots of time to spare for experiment-making, will not do for the ordinary farmer who, with small means, and pressed with work, must needs make the best of everything. But is it not possible to adopt some plan by which all the manurial substances within the farmer's reach may be carefully saved and made to go as far as possible? We believe it is, and with only such attention and labour as every one can bestow, great advantages may be secured.

Winter is the dung-harvest. It is then that stock is housed in stables and sheds, and the store of fodder and bedding consumed. Moreover, barnyard manure, made of as rich materials as possible, and well taken care of, so as to preserve its richness without loss, combines all the elements needed for plant-food. Whatever mineral and artificial manures supply, is found in greater or less abundance in ordinary dung. Some of its most valuable components are however extremely volatile in their nature, and readily pass off into the air, or are wasted away by the action of water. The admixture of suitable absorbents with animal droppings, is therefore the first precaution that requires to be taken. Bedding, while it adds materially to the comfort of housed animals, is not less valuable as a means of absorbing manurial moisture. Many farmers do not bed their stock, because they want their straw for food, and the result is not only a large amount of discomfort and filth—as benevolence to the brute creation disapproves, and neatness rebels against, but a degree of waste which upsets the supposed economy of this mode of doing things. For though pure droppings, sieved through sparred floors on which the unfortunate animals are gridironed, may be well saved on Mr. Alderman Mearns's plan, viz., by transference forthwith to an immense manure tank in which everything from a dead horse to a lump of fowl dung, is liquified, yet as ordinarily kept, if unmixed with straw or some other absorbent, much of its richness will escape. With due exercise of care, it does not require so large an amount of straw for bedding purposes as many think. Any farmer who has a horse-power, and will connect his chaff-cutter therewith so

as to chaff his straw for bedding, will find his account in it, in the eking out of his straw-mow, and the more intimate mixing of the cut straw with the droppings. Another important matter is the saving of the liquid manure. A portion of this is secured when a liberal supply of bedding is provided. But a good deal is usually lost by draining under the stable floor or otherwise. Some simple plan of gutters leading to a suitable receptacle, would be found to pay. Or, if the farmer would store up saw-dust, spent tan-bark dried by exposure to air and sun in summer, thoroughly drained swamp muck, ordinary soil, or even sand, and scatter it daily so that it shall absorb the liquid droppings, he would gain immensely thereby. Forest leaves are also excellent for this purpose. They form, when decayed, excellent manure without the addition of any other substance, how valuable, then, must they be when saturated with liquid manure? Most Canadian farmers have a large proportion of bush land. How easy it would be to collect, just before winter sets in, a store of leaves for winter use in the way just named. The manure-yield of the stable, cow-shed, piggery, and poultry-house should all be hoarded with miserly care. Nor must another source of manurial wealth be forgotten, though it is usually allowed to be a nuisance instead of one of the feeders of the farm. We refer to human excrement. The privy should be so arranged, that its solid and liquid contents can be applied to the soil. It has been scientifically demonstrated that the solid and liquid faeces of every human being, properly husbanded and applied to the soil, are capable of producing food enough to support the individual for a year. One part of the urine of a man is equal to 13 parts of the manure of a horse, or 16 of a cow. A recent agricultural writer says: "The waste of a family of six persons, well saved and managed, will thoroughly manure two acres of land, and as the net value of the most valuable crops on well-manured land is at least \$50 per acre, we have \$100 as the value of the waste when this description of manure is thrown away." Offensive smells from human ordure may be easily prevented by the use of dry muck or plaster; also, by cheap chemicals such as copperas, sulphuric acid, Epsom-salts, chloride of lime, sulphate and chloride of zinc, &c.

Having thus indicated the first steps toward saving manure, the next thing is to point out how it may be husbanded until ready for use. If left to be exposed to the open air, and suffered to be drenched by rain, or parched up by the sun, serious loss must be the result. A trench or hollow in the ground, with a rough shed over it, would answer a good purpose. Better still would be a sort of cellar, stoned, boarded, or even logged round, with a floor of rammed clay sloping toward the middle from the sides. A roof of some kind is essential. The yield of stable, cow-house, sheep-fold, pig-sty, hen-roost, and privy, may all be thrown together in such a receptacle. With a little contrivance, the buildings could be so arranged that the manure-house should be readily

accessible from them all. To prevent excessive heating, plaster of Paris, swamp muck, ordinary soil, or turf, should now and then be added to the accumulating mass. All manner of refuse from the house, in short, every decomposable substance within reach, may be composted together. Such a building might not inaptly be termed the "manure-bank," into which deposits are constantly being made, and out of which wealth is drawn as required. Composting, mixing, completely rotting the entire mass before use, are highly necessary. The mistake is often made of hauling manure upon the land in an unripe state. To get it so fine as readily to intermix with the soil, and to destroy all noxious seeds, it should thoroughly ferment and decay down. But the best mode of applying manure to land is a wide question on which we shall enter hereafter.

### Root Crops.

Now that we may reasonably suppose the mass of Canadian farmers to be revolving the questions, how best to lay out their farms, and what disposition to make of their fields the coming season, we desire to put in an earnest plea for the devotion of a fair measure of attention to the culture of Roots. The substitution in modern agriculture, of root growing for the system of naked fallowing formerly in vogue, has wrought wonders wherever it has come into effect. The simple formula—"grass, grain, and roots"—is an immense advance on the old one of "grass, grain, and fallow." Instead of leaving a field uncultivated for a time to be slowly re-fertilized by sun, wind, and rain, the best agriculturists of the present day secure the same result, with great advantage to themselves and their land, by the cultivation of a crop which does not require the same species of food, but can thrive on some of the materials left in the soil, and at the same time derive a large amount of nourishment from the air. Root crops fulfil these conditions. They search in the soil for elements not taken up by grain; while scientific experiments have repeatedly demonstrated, that by means of their long, broad leaves, they draw more largely on the air than on the earth for the material of growth. The discovery and practical application of these principles formed the turning-point of improved British agriculture, and brought about changes little short of magical in the farming regions of the old world. It is found that root crops restore fertility better than fallowing, give a greater return in value than any other description of product, provide an immense amount of fodder, and, what is of the last importance, increase the manure heap, both in bulk and richness.

But simple and self evident as these things appear when reflected on, it is obvious that they are too much overlooked. There is a great deal of old-style agriculture practiced still. By constant cropping with the same or similar products, much choice land is being rapidly exhausted, and many farms are be