



VOL. XI. No. VII.
(NEW SERIES.)

TORONTO, CANADA, APRIL 1, 1874.

\$1.50 PER ANNUM.
SINGLE COPIES 8 CTS.

The Field.

Compost.

An admirable essay on the above subject, was recently read before the Connecticut Board of Agriculture, by Mr Alexander Hyde. It is too long for insertion in our columns without abridgement, though its excellence would amply justify its transference entire. This however, being impracticable, we shall give the pith and gist of it, for the most part in our own words.

The farmers of New England, like those of this country, have learned by a costly experience, how hard it is to restore its lost fertility to an exhausted soil. Mr Hyde very appropriately likens it to the convalescence of the human body from disease, and quotes in regard to it the proverb, "sickness comes a horseback, and goes away afoot." Fortunately however, the land, does not like the human body, die of abuse, disease and age. There is a remedy for all the ailments of the soil.

Having urged the necessity of draining all the water-logged land, Mr Hyde proceeds to enquire—What is the nature of the food our exhausted soils require, and in what manner shall we deal it out? Shall we dose them in homœopathic style? Shall we carry our concentrated manures on to the fields in saddle-bags, as some theorists recommend, or shall we deal it out in good old scripture measure, in cart loads, full, pressed down, and running over? The essayist in a very sensible and forcible manner, pleads for the old-fashioned style of manuring plentifully, expresses doubts as to the value and efficacy of much be-praised concentrated fertilizers; and states that having tried dealing out pabulum to plants by the spoonful, he is quite convinced that feeding them by the shovel-full is much better.

There are two serious objections to the substitution of artificial for barn-yard manure. The first is that they generally contain only two or three elements of plant-food, while barn-yard manure furnishes all those elements in great abundance and variety. Artificial fertilizers operate as stimulants, increasing production wonderfully, for a short time, until certain properties of the soil are exhausted, when they suddenly fail of the desired effect. To keep land in good heart, we must return to it not one or two elements of fertility merely, but all the elements that are taken off in the crops. As occasional stimulants, patent manures may be used to advantage, like patent medicines, but we must have a more substantial dependence for the food which is needed to sustain vegetable life. The other objection to the substitution of these things for barn-yard manure, is found in the fact that one great object of applying manure to lands is to put it into a suitable condition mechanically for growing crops to the best advantage. The soil needs to be in such a state that it can read-

ily absorb nutriment from the air, and also allow the young plant free opportunity to forage with its roots, for all the food to be found in the bosom of mother earth. It is wild and visionary to expect that we ever shall be able to dispense with those coarser and bulkier manures, on which in all past ages, agriculture has placed its chief reliance.

Nature, in preparing its rich stores of plant-food, teaches us a lesson we should be quick to heed, namely, that of composting. The word "compost" means placed together, mixed, a compound. This is the character of soil of every kind. It is a compost made up of many varieties of disintegrated rock, together with much decayed organic matter. The renewal and improvement of the natural soil go on according to the same system. The diversified vegetation of the earth decays, and, mingling with the remains of the higher animal organizations, forms an immense compost on the surface of the earth, varying in depth from a few inches to many feet, but rich everywhere with the multiform elements of plant-food. There is, however, much left for man to do in this direction. Marl, sand, clay, peat, muck, and all sorts of decomposing substances, are to be brought together and commingled by the skilful industry of the tiller of the soil.

Some will ask, what is the use of composting barn-yard manure? Why not haul it directly from the stables to the field, and let the composting be done by the plough and harrow? To what purpose is the extra labor of composting? Is the manure any better for it?

In reply to these queries, it is admitted that green manure may sometimes be ploughed in to advantage. When the soil to be dealt with is a strong clay loam, and the crop to be grown is a grass-feeder, like Indian corn, this course may be adopted with some saving of labor. But even in this case it is well to harrow in some well-rotted manure on the surface, or put a little in the hill, to aid the young plants in getting a start in the world. As a general rule, it is better to compost all manure before applying it. Several reasons may be given in support of this opinion and practice.

Manure is the food of plants, and requires to be decomposed, so as to be either soluble or gaseous, in order that it may enter the pores of the rootlets, and become part and parcel of the delicate structures it is meant to nourish. In the crude, coarse condition in which it exists before undergoing fermentation and putrefaction, manure is unfit to be assimilated by the organs of plants; and though it may be buried in the soil, it lies there as an inert and useless mass, until slowly disintegrated and incorporated with the soil.

Another reason for composting is the use that can be made of the fermenting manure to produce like fermentation in surrounding material. It is analogous to the operation of a little yeast in the housewife's bread bowl. Muck mixed with fermenting manure becomes quickly infected with a similar ten-

dency to decompose. "A little leaven leaveneth the whole lump." There is therefore a multiplication of the valuable material. The gases evolved in the process of decay impart fertilizing properties to other matter, and convert them also into manure.

There is reason to believe, also, that additional virtue is acquired by manure in consequence of the fermenting process, just as additional nutriment is gained by flour as the result of composting it with yeast and water. Chemical changes take place; and all who have watched the action of well-fermented manure must be satisfied that it is much more efficacious than green manure.

The complete destruction of all objectionable seeds is another sound reason for composting. Green manure is always more or less infested with the seeds of grasses and noxious weeds; and these, germinating in the land, spring up, to the great annoyance of the husbandman. The importance of clean cultivation, and the great saving of labor effected by keeping foreign seeds out of the ground, render this a sufficient argument for composting, even if no other could be urged in its favor.

Compost may be formed in a variety of ways. It is like hash, which may be made of fish, flesh or fowl, with potatoes as a kind of base of operations. Muck, or some substance abounding in vegetable matter, as leaf mould or sods, in like manner is a good base of operations for a compost heap. Muck beds are to be found almost everywhere. This material, when dry, has great power of absorption. It is also a wonderful deodorizer. The carcass of a dead cow or horse, covered up in dry muck will gradually decompose, without any offensive odor. Composting may be done on the spot where the manure is dropped. Dry muck or dry loam is a most congenial bedding for all kinds of stock, and there is nothing better for keeping the air of a stable pure. This will absorb the liquid manure, and if thrown out with the solid excrement into the cellar, will make first-class compost. The use of muck or loam in horse-stables will also antidote the "fire-fanging," by which so much valuable manure is injured and subjected to loss. Muck or loam in the hog-pen, hennery, water-closet and barn-yard, will save and decompose large quantities of fertilizing material, that would otherwise go to waste.

Besides these and such-like home resources, the farmer may avail himself of outside helps to the compost heap. Wood ashes, leached or unleached, may be advantageously mixed with muck and other substances. Plaster is another useful ingredient. All the wash of the kitchen and chambers, all the old bones and woollen rags, every description of refuse, that will decompose, ought to find a place in the compost-heap. There is no better material than night-soil with which to season a pile of muck. Refuse salt from the grocery; old fish, beef and pork brine; the waste of tanneries, paper or woollen mills; chip dirt; old boots and shoes; all manner of odds and ends that can be reduced to decay, are welcome additions