

AGRICULTURAL.

From the New York Cultivator.

PEAT EARTH AND PEAT ASHES, IMPORTANT SOURCES OF FERTILITY TO THE FARMER.

PEAT earth and swamp mud from our marshes and swamps, are composed principally of decayed vegetable matters, washed in from higher grounds, or the remains of aquatic plants, which have grown and decomposed on the spot. They almost invariably constitute a valuable manure for uplands, and may be rendered fertile in their place of deposit, when brought into a soluble state by fermentation, or reduced to ashes by fire. These deposits of vegetable matter are often the accumulation of centuries, and have been preserved from ordinary decay, by the presence of too much water, and too little heat and air, until they have become so antiseptic in their quality, as to resist putrefaction in many cases, even when laid dry, until they are brought in contact with fermenting substances, or changed in their nature by the action of fire. These agents it is the province and interest of the farmers to apply. And to instruct him in the mode of employing these great auxiliaries of fertility, is the object of this article, and of other articles which we design to give in our future numbers.

The first step in this process, is to drain well the ground where the earth is deposited, or has accumulated; or, if this is impracticable, to remove the earth to dry ground.

The second step is, if the change is to be effected by fermentation, to mix with other substances which will readily ferment, or induce fermentation remotely. This may be done by top dressing, or by composts. The latter is employed when the object is to enrich the upland, and the former when the intention is to render the drained marsh or swamp fertile. The best compost is made of one part unfermented manure, and three parts of swamp earth, placed in alternate strata, to the height of four to six feet. When the temperature of the centre of the mass has reached 80 or 90 degrees, which may be ascertained by a stick shoved in, and left to acquire the temperature of the pile, fermentation has sufficiently progressed, and the whole may be mixed and applied to the soil with certain advantage.

Composts may in like manner, be made with lime, green vegetable matter and ashes, and the fermentation accelerated by urine, soap suds, sea water, kitchen wash, &c.

Fermentation may be induced by casting the earth to the cattle yards, and spreading it to the depth of eight inches or less, to become incorporated, by the tread of cattle, with their dung, urine, and the liquids of the yard. And it may be induced remotely, by spreading the swamp earth immediately upon the upland, especially if sandy and dry, where it becomes mixed with the vegetable matters of the soil, and with them undergoes the desired change.

To induce fertility in a peaty soil, after it has been laid dry, a good dressing of long manure, or of lime, are effectual; and often a mixture of three or four inches of sand with the upper stratum, has proved highly efficacious. Paring and burning is another sure means of inducing fertility. In this operation, some inches of the surface, so deep at least as to embrace the roots of our aquatic and other growing plants, is pared off, dried and burnt, and the ashes mixed with the soil.

These operations may be carried on at any season when the ground is not frozen, and when the teams and hands on the farm find leisure. There are but few farms, and fewer districts, that do not abound in this element of fertility.

Peat ashes constitute an article of commerce in Europe, and vast quantities are transported from Holland to Belgium and Flanders, to fertilize those highly cultivated districts. These ashes cost about \$13 per ton. A bushel of the best sort, which are black and heavy, weigh about forty pounds, and the ton containing fifty

six bushels, the cost of manuring with them, at the rate of thirteen bushels per acre, which would be \$4 50. These ashes, according to the analysis of Professor Brande, contain, in 100 parts,

Of silicious earth,	82 parts.
Sulphate and muriate of soda,	6 "
Sulphate of lime,	12 "
Carbonate of lime,	40 "
Oxide of iron,	3 "
Impurities and loss,	7 "

The mode of their application in Flanders, is as follows: They are spread upon young clover, in the spring in calm and hazy weather, at the rate of eighteen and twenty bushels the acre. They are also laid on pastures and wheat in March or April; on oats and beans in the beginning of May, and on rye in October and November. Their chief employment is, however, for green crops; it having been found, on comparative trials in Flanders, that top-dressed clovers, where the ashes were used, were much earlier, heavier, and superior in every respect, to those which had undergone a top-dressing of horse and cow dung. One of the best evidences of their utility, is the fact, that the clover crop never fails when they are applied. Besides improving the crop, they are also useful in preventing the injuries arising from insects, and when applied to pasture they are highly serviceable in the destruction of moss. To numerous individual declarations of their beneficial effects, Sir John Sinclair, to whom we are indebted for this part of our statement, adds the public declaration of eighty-three practical Flemish farmers, to the effect, that "they know by experience, that when clover is not manured with dutch ashes, at the rate of nineteen bushels per acre, the following crop is very bad, notwithstanding any culture that may be given to the soil; whereas, they always have an excellent crop of wheat, after clover, and, doubtless in proportion to the quantity of manure then used." The farmers who signed this declaration, in most cases, carted the ashes forty or fifty miles by land, after they had been transported by water from Holland. See Sir John Sinclair's account of the agriculture of the Netherlands; also, Radcliff's Flanders.

But the use of peat ashes is not confined to the Netherlands. They are extensively used in Britain, and are produced in large quantities from what is termed the Newbury peat. We find in "British Husbandry," the following description of the mode of burning the peat, and statement of the application and utility of the ashes:

"The peat is cut with a peculiar kind of spade, into long pieces, about three and a half inches broad every way, after which it is conveyed from the spot where it is dug, in wheel-barrows, to a short distance, where it is spread upon the ground in regular rows, until it be dried by the sun and wind. It is thus cut down until the gravelly bottom is reached, if it can be sufficiently drained; but although persons are employed to pump the water, that cannot always be effected.

"After having laid thus to dry about a week, the pieces are turned, and this being three or four times repeated, a small round heap is made in the middle of the place where the peat is spread, and in the centre some very dry peat is put, which being lighted, the fire communicates slowly to the rest of the parcel. When it is completely lighted, an additional quantity is put upon the heap, and this is continued till the whole is consumed, which generally occupies one or two weeks, and sometimes still longer, as quick burning is not approved of, and rain seldom penetrates deep enough to extinguish the fire. The heaps are commonly of a circular form and rather flat at top; at first, very small, but gradually increasing, until they sometimes become two or three yards deep, and six or seven yards in diameter. According as the peat is more or less dry, or contains more or less essential oil, or, as it is termed, more or less fat—according as the weather is favourable or otherwise, and in propor-

tion as the heaps are more or less large, just so much a shorter or longer time will it take to consume. A fire regularly kept up, but burning by slow degrees, will retain more of the vegetable alkali in it than a more quick one; and in proportion to the heat of the fire, the same quantity of peat will produce more or less ashes: Thus it has been stated by Mr Malcolm, that in the parish of Frimby, in Surrey, three loads of dried peat, which is about the size of the usual heap, will yield from 6 to 7000 bushels, [of peat,] which have been sometimes known to yield 2400 bushels of good ashes; though the peat is generally so reduced in measure by combustion, that the ashes seldom yield one fourth of its original bulk. The ashes being riddled, are then conveyed away in covered carts, and put under sheds to keep them from the wet until they are wanted for the land; for, if kept under cover and dry, they are infinitely more strong and active than those which have been made some time, and have been exposed to the weather; the fresher they are, when used, the better. The usual time of applying them is in March or April, in the proportion of 12 to 15 bushels to the acre, according to soil and crop, as too large a quantity would be injurious, though on meadow land, twenty bushels are often laid with advantage; and when not used as top-dressings, they are commonly spread at the same time the seed is sown, though for grass, many people prefer the autumn. For corn crops, however, they are not in much estimation; but on turnips they are said to assist in chocking the fly, and they are supposed to increase clover nearly a ton of hay the acre, beyond what it would have yielded without them. Their effect, however, is not calculated to last more than a couple of years, but they are of such benefit to that crop, and to the succeeding wheat, that when a tenant quits a farm, on which ashes have been laid the preceding year, it is usually customary to allow him one half the expense." These ashes are sold at Newbury at about seven pence (a New York shilling) the bushel. They are found to contain from one fourth to one third part of gypsum, and sometimes even a larger portion. The other constituent parts are a little iron and common salt, with various proportions of clay, sand, and lime.

Our attention has been turned to peat earth and peat ashes, at this time, particularly, by a late visit to Staten Island, where we saw their utility as fertilisers of the soil, favourably developed in the practice of a gentleman once distinguished in the business of the law, and now no less distinguished for his enlightened and systematic practice in the business of agriculture. He showed us the beds of several ponds or marshes, which he had drained, containing vast deposits of peaty earth, large quantities of which he was converting into manure, by some of the processes we have detailed, and also about 5000 bushels of ashes which he had made recently, by burning peat. His mode of obtaining the latter was as follows: He drained off the water to about thirty feet below the surface, and when the latter had become sufficiently firm, he went on with a six ox team, and turned ten or a dozen prairie furrows upon the outer edge of the deposits. As soon as the turf had dried sufficiently in the summer sun, he proceeded to construct the centres for his intended pits, by setting up a few sticks of wood and dry brush, at small intervals, around the border, like the centre of a coal pit. Around these he piled his driest turf, and having fired the interior, fresh turf was added, as circumstances seemed to warrant, till the pile became quite large. In this way, with comparatively little labour, he had obtained his 5000 bushels of ashes, which were principally intended as a top-dressing for his grass lands. So abundant did the gentleman consider his resources of fertility—in his peat earth and peat ashes—his sea weed and his fish—in the dung of his animals, from his oxen to his poultry—and in the litter and wash of his yards and kitchen—that he calculates confidently, and we believe on safe grounds, that he would be able to manure 160 acres of ground annually.

These hints cannot but be acceptable to farmers on the sea-board; and the highly commendable example which we have given above, we trust will stimulate them thoroughly to try these neglected means of enriching their lands.