

THE FARMERS DEPARTMENT.

SYSTEMATIC ALTERATIONS OF CROPS.

In the cultivation of the ground, either in farming or gardening, a proper attention to the regular rotation of crops forms one of the first and principal features of good management, although its beneficial influence has not yet been fully accounted for by chemists. The rationale of rotation is thus given by Sir Humphrey Davy.—It is a great advantage in the convertible systems of cultivation, that the whole of the manure be employed; and that those parts of it, which are not fitted for one crop, remain as nourishment for another. Thus if the turnip be the first in order of succession, this crop manured with recent dung immediately finds sufficiently soluble matter for its nourishment, and the heat produced by fermentation assists the germination of the seed, and the growth of the plant. If after turnips, barley with grass-seed be sown, then the land little exhausted by the turnip crop, affords the soluble parts of the decomposing manure to the grain. The grasses, rye-grass, and clover remain, which derive a small part only of their organized matter from the soil, and probably consume the gypsum in the manure, which would be useless for other crops; and the plants, like them, by their large system of leaves, absorb a considerable quantity of nourishment from the atmosphere, and when ploughed in, at the end of two years, the decay of their roots and leaves afford manure for the wheat crop; and at this period of the course, the woody fibre of the farm yard manure, which contains the phosphate of lime, and the other difficult soluble parts, are broken down, and as in the most exhausting crop is taken, recent manure is again applied.

Gardeners should pay particular attention to rotation of crops, as far as the nature of the thing will admit of; a good practice is to sow down part of the garden every season in grass, clover, and barley, which may be used as green food for horses and cows. The barley should be sown with the clover, and cut down, not being allowed to ripen; thus it acts as a nurse and a shade to the clover. But in all cases where this is done, let the ground be laid down in as good condition as possible, and the manure laid on will be lost.—Land thus laid down should continue so for two years, or if for three, the greater will be the benefit. However, this is generally regulated by the quantity of ground, which can be spared from crops, for the time when the ground is wanted. The crop of grass, if dug in, but not too deep, for reasons already mentioned, materially improve the soil; but on no occasion whatever trench it in, as is too often the case. This practice, although excellent, can however only be applied to gardens on a large extent, for its adoption would not be attended with the same advantage in the general run of our gardens.

In a rotation of the principal crops such as quartering out currants, gooseberries, and raspberries, &c, the ground will not only be renewed, but also rested, or at least very much improved. None of these crops need occupy the ground above twelve years, and not less than three; this, together with trenching for the principle crops of autumn-planted brassica will keep the ground in fresh order, and be attended with no loss of space; for in all the garden, and the quantity of manure, new plantations of these things should be made to a certain extent annually, which will throw a certain proportion of ground into regular rotation. In cropping all gardens, as

far as can be rendered practicable, rotation should be aimed at, and thus, by keeping all the legumes, as peas and beans, the brassica or cabbage kinds, the bulbous or onion kinds and lighter crops, as salads, &c, by themselves, each following in regular succession, the garden would not only look better, but would to a certain degree, produce the rotation required. In no case should any of the brassica tribe follow another upon the same piece of ground, neither should peas follow peas, nor beans, beans; onions are probably, the only exception in garden culture. A journal, or plan of the garden should be kept, and the ground divided into portions, each of which should be numbered and a careful record kept of all crops, manurings, trenchings, &c.

The necessity of rotation is pointed out to us by nature; for all perennial herbaceous plants have a tendency to extend their circumference, and to rot and decay at their centre, where others of different kind, sprung and succeed them. This is particularly exemplified in the strawberry, and all such stoloniferous growing plants; mushrooms are said never to rise two successive years on the same spot. The production of the phenomenon, called fairy rings, has been ascribed to the power of the peculiar fungus (*Agaricus orceda*), which forms it, of exhausting the soil of the nutriment necessary for the growth of the species; the consequence of which is, that the ring extends itself annually; as no seeds will grow where their parents grew before them; at the same time, that the interior of the circle has been exhausted by succeeding crops; but in those places, where the fungus has died, grass has grown luxuriantly, nourishment being thus left for the support of grass and other plants, after the agaricus has exhausted all that was destined by nature for its support.

All crops for a few years thrive well on newly broken virgin mould, but in a few years they degenerate, and require a fresh soil.—Land, in the course of years, often ceases to produce the most common vegetables, and fields which are well laid down with cultivated grasses, lose every one of them in a few years; they become, as it were, tired of them, but the truth is, that they have exhausted the nourishment proper for their respective sorts, and consequently die, and give place to others. This fact is frequently experienced by botanists to their regret, for a plant is often found in abundance for years, in one field or wood, and in the course of time wholly disappears.

From the general richness of garden ground, and much manure being constantly employed in the raising of garden-crops, much less attention, has perhaps been paid to the courses of cropping in the garden, than in the field. It is, however, equally necessary in one case as in the other, and the same principles are applicable to both.

A variety of circumstances, however: conspire to prevent its being so effectually accomplished in the garden as in the farm; such as the smallness of the portions of ground generally allotted to this use; the vast number of articles which are to be grown, and their great similarity and relation to each other. The following classification may be considered the most proper:—

Broccoli, cabbage, cauliflower, and savoy; & Chinese beans, French beans, and peas;

Carrots, beets, and parsnips; in one case;

Turnips, early potatoes, onions, leeks, eschallots, &c;

Celery, endive, lettuce, &c, &c;

It is found in practice that celery constitutes

an excellent preparation for asparagus, onions and cauliflowers.

Turnips or potatoes are a good preparation for cabbages or greens.

Broccoli or cabbages are a proper preparation for beans or peas.

Cauliflowers prepare well for onions, leeks, or turnips.

Old asparagus land affords a good preparation for potatoes or carrots.

The strawberry, currant, gooseberry, and raspberry, for the same purpose.

Turnips give a suitable preparation for celery or endive; and peas, when well manured, are a good preparation for spinach, &c.

By properly attending to all these different points of management, crops of almost all descriptions may be put into the soil, so as to succeed with much greater certainty, and in a much more perfect manner, than is usual in the ordinary methods of putting them into the ground.—*English Practical Gardener*.

MUD.

Mud, a black or dark coloured sediment, found at the bottom of ponds, rivers, creeks, ditches, and wet sunken places. It is mostly composed of a fine vegetable mud, mixed with the substance of perished vegetables, &c, and therefore it contains much of the natural food of plants.

In ponds and rivers, this sediment is made up of fine dust, together with a rich variety of other substances, which have been washed in the air, and have fallen into the water; together with the subtlest particles of the neighbouring soils washed into them by rains, which is supposed to be the richest mud, which is near to the borders, and which has been alternately food and fermented; as it will ferment when it lies bare, in some degree.

In rivers, and in long ditches that have currents, there is a greater proportion of soil in the mud. It has been brought down from soft, mellow lands, through which the rivers pass; and some of it doubtless from beds of marl, which are often found in the banks of rivers, and which readily dissolve in the water.

Some ponds are totally dried up in a hot and dry summer; and all ponds and rivers are so diminished by a copious evaporation, as to leave part, and the richest part, of their beds uncovered. And these beds, where there has been no rapid current, are always found to contain rich mud. In some places it reaches to a considerable depth.

It is supposed that sea water, has been found to be a valuable manure; more especially for dry, sandy and gravelly soils. I have known it to have as good effect as barn dung, in the culture of Indian corn, upon such soils. The advantage of it is not found to be only for one season; it meliorates the land for several years.

It restores to a high piece of ground what vegetable mould the rains, in a long course of years, have been washing away from it.

It has happened for him these magazines of manure in all parts of the country. None but the stupid will let them lie unnoticed, or unremoved. When a dry autumn happens, the prudent farmers will be very industrious in carting mud up from evaporated ponds, and other sunken places in their farms, and laying it upon their light soils, especially upon light gravelly knolls; or in their barn yards, if they have them not too great.

But with respect to using mud as a manure, the maratime farmers have the advantage above all others. For the sea ooze, which appears on the flats, and in creeks and harbours,