

so prevalent. The wonder is, that while such a system of planting is persevered in, any of these crops should succeed at all under such treatment, and indeed this is only to be accounted for by the small quantity of the dung applied, which is generally found mixed with great quantities of half rotten straw and other extraneous substances, such as coal-cinders, &c., and were it not that the fresh earth is immediately laid on the top of the dung after the seed is planted, the failure of the crops would be to a much larger extent; of this I have no doubt. The ground, too if in a very impoverished state, may by speedily digesting and drying up the dung, prevent to a great extent a total failure of the crop, although the seed were planted thus injudiciously in the midst of the dung; for it will be observed that in such ground the rot is not so destructive as in such deep soils. The first and great point, therefore, in setting the Potatoe, is to have the manure properly commingled with the soil before introducing the seed, the plan I adopt in planting, which is briefly as follows:—

In preparing a parcel of ground for the reception of the Potatoe seed, I proceed to have the manure spread regularly over the surface, and evenly dug in. I then either drill the ground, after the manner of gardeners in sowing peas, and plant the Potatoes in the drill, or plant them with a dibble, without drilling about two or three inches beneath the surface, the dibble being formed with a broad point, so as to insure the Potatoe having no open space left beneath it, when dropped into the hole. For large fields, which cannot well be dug or planted in this manner, I would recommend the ground to be prepared and the dung spread exactly as for Oats or Barley. Then have the ground drilled, and in planting place the seed Potatoe in the clean soil, on the back of the half drill, formed by the return of the plough, which half drill should be made larger than ordinary, to bring the seed as near to the centre of the drill as possible, so as to afford every advantage of the fresh soil to vegetation in. In this way the fructifying earth, in which the seed is embedded, will secure its growth, and so soon as it throws out roots, it will reap the full benefit of the manure contained in the surrounding soil. It is of the utmost importance to have the seed planted, so, as it may have the earth both below and above it when put in; for in keeping the seed free from the dung, I apprehend, lies the whole secret, which should be particularly attended to.—From a work on this subject, by J. Smith.—Blackie and Sons, Glasgow.

APPLICATION OF MANURES.—The value and necessity of manures to successful farming, is now generally admitted but there is still much that is faulty in the modes of applying them; and while it is acknowledged that there is still much to learn respecting their operation, there are a few principles that experience teaches us are worthy of more notice than has yet been given them.

One of these is that in the same soil, some varieties of the cultivated plants require more manure for their growth and perfection than others. Every farmer is aware of this; he knows that corn requires more manure than peas or beans; and that some of the tap-rooted quick growing plants, will, with a small allowance of manure at the outset, give a good crop on soils where the grasses, or wheat and barley would be a failure. Few, however, have inquired into the reason of these facts, or allowed them to have their proper influence in the application of their manures. The causes of this differ-

ence in the requiring of manure are several; one of them is their adaptation to drawing nourishment from the air, instead of depending solely on the soil for it. Quick growing plants with broad leaves, and few roots, or those single and deep penetrating, possess this power in a remarkable degree. Only examine the root of the common pea for instance, and compare it with that of corn or wheat, and this difference will be manifest at once. The roots of corn spreads in every direction; it clearly requires a large and rich pasture; its double sets of roots seem provided at once for support and nourishment, and it is remarkable that the last throwing forth of the roots, like those from the vines of some of the cucurbitæ, takes place precisely at the time when large supplies of nutriment are required for the formation of the fruit. The root of the pea on the contrary is very much smaller in proportion to the bulk of the plant; it does not spread like those of corn and wheat, but it penetrates to a considerable depth, and seems more adapted to provide the moisture than the nutriment of the plant.

Another cause why plants do not require equal supplies of manure, is to be found in the fact of their not all consuming the same time in arriving at perfection. As a general rule, it may be said that the longer a plant is in the soil before it matures its seeds, the more the soil is exhausted. Of this, winter wheat is a well known instance as compared with summer wheat; but perhaps a still better example is that to which allusion has already been made that of corn and peas. The last requires not more nor than two thirds the time of the former for maturity, and the exhaustion of the soil by it cannot be compared with the former. Buckwheat too, is of a remarkable rapid growth, and hence it has been selected as one of the best plants known for the process of green manuring. Used in this way, it evidently returns to the soil more than it takes from it, fertilizing, instead of impoverishing and leaving a much larger supply of organic matter for the use of the future crop, than existed previously.

A cause not remotely allied to the one just considered, is found in the well known result, that where the seeds are to be matured on the soil, more manure is required, or in other words the exhaustion of the soil is greater, than where such maturity or the formation of seed does not take place. Thus while a crop of turnips or beets exhaust the soil comparatively little, these same plants when transplanted for seed are of the most exhausting kind, as every grower of seed knows; and the same may be said of most of those roots that do not mature their seeds the first year. Clover is also a well known example of this. If clover is cut before it is matured, the roots seem scarcely checked in their vigor, new shoots are rapidly thrown out, and the exhaustion which has taken place is evidently of the slightest kind. On the contrary if clover is allowed to mature its seed, the effect which the process has on the exhaustion of both the soil and the plant, is of the most striking kind; so great indeed that an attempt at two crops of seed from the same plant is rarely if ever known, and a course of other crops and reseeded usually follows, where clover seed is grown.

From these considerations, which we are not able at this time to pursue farther, it would seem that the application of equal quantities of manure to all crops is a useless expenditure. That we should ascertain those upon which manure produces the best effect when applied, and not let the mere convenience of the application, determine its