

ple, by the ordinary process of inoculation; the Ganges apple produced from these buds having acquired the peculiar transparency which characterizes the fruit of the stock; an effect, it will be observed, that goes to overturn the received opinion that the produce of the bud is in no respect affected by the qualities of the stock."

14. Mr. G. LINDLEY mentions among other plans to cause bad [fruit] bearers to be more prolific, *the use of different stocks*; and in his commentary on this position, he says, in proportion as the scion and the stock approach each other closely in constitution, the less effect is produced by the latter; and on the contrary in proportion to the constitutional difference between the stock and the scion is the effect of the former important. Thus, when pears are grafted or budded on the wild species, apples on crabs, plumbs upon peaches and almonds, the scion is, in regard to fertility, exactly in the same state as if it had not been grafted at all; while, on the other hand, a great increase of fertility is the result of grafting pears upon quinces, peaches upon plums, apples upon white thorn, and the like. In the latter cases, the food absorbed from the earth by the root of the stock is communicated slowly and unwillingly by the scion; under no circumstances is the communication between the one and the other as free and perfect as if their natures had been more nearly the same; the sap is impeded in its ascent, and the proper juices are impeded in their descent; whence arises that accumulation of secretion which is sure to be attended by increased fertility."

SHORT DIRECTIONS FOR PLANTING VEGETABLES.

The first thing to be done in gardening is to prepare the ground. It is necessary that a garden soil be deep and loose, that the roots of vegetables may penetrate it, spread and imbibe nourishment. Depth of soil also prevents drouth by its capability of containing and consequently retaining a greater quantity of moisture than a shallow soil, and it prevents drowning by being capable of holding more water without being flooded.

Where not already done, manure should be now drawn upon the ground intended for gardening, to be intermixed with the soil by deep and thorough ploughing. Where manure fresh from the stable is brought, and cannot be spread and ploughed under immediately, it should be piled in a heap, and then covered with soil three or four inches thick, and this with a coating of lime, in order to retain the exhalations during fermenting, which otherwise would pass into the air, and carry off a large portion of the best quality of the manure: if earth cannot be had at this season, in consequence of the ground being frozen, a greater quantity of lime must be applied; or ashes may be first spread over as a substitute for earth. In addition to the lime thus preventing the waste of manure, its usefulness to the soil after it is spread upon it, will far overbalance its cost.

As a deep soil cannot always be had at once, the defect may be partially remedied by throwing the soil into ridges upon which the crop is to be planted. Of course in those ridges there will be an accumulation of loose and rich earth. But it is much better to have a soil so deep and well manured as not to need this expedient.

Most garden crops are sown in drills or small furrows drawn with a hoe or stick; and where it is stated in directions that seeds are to be planted in drills of any described depth, it is to be understood that they are actually buried only about one half that depth, as the earth is taken from the sides of the drill for covering. A convenient way of sowing some garden crops in drills, is to lay a board across the prepared bed, draw a stick to form the drill along the edge of this board, drop the seed and cover it, and then move the board

proceed with another as before. This forms them straight and by standing during the operation upon the board, it presses the soil firmly about the new planted seeds and consequently assists their vegetation. Another and more rapid mode of forming drills is to make a tool like a rake head, but much larger, so that each tooth when drawn through the soil, may form a drill, at the required distance from the others.

Rolling is advantageous wherever the ground is not so wet or adhesive as to be injured by the operation. It presses the fresh earth about the seeds, and keeps them moist until they germinate. When a roller is not at hand a substitute may be obtained by laying a plank or board upon the newly sown bed, and then walking upon it lengthwise. Nothing, perhaps, protects turnips, and other plants which are injured by the turnip fly, from its depredations, so much as rolling. By pressing down the soil and rendering the surface smooth, it destroys their hiding places. Such seeds sprout soon, and they are sometimes destroyed by insects even before they reach the surface, in which case the seedsman is sometimes unjustly blamed. Seeds sown in ground inclining to be dry, need watering, especially if they are enveloped in a dry shell. Among those which most require a moist soil or watering, are lettuce, onions, parsnep, parsley, asparagus, capsciums, celery, rhubarb, salsify and spinach.

With these preliminary remarks we now proceed to give particular directions for planting each vegetable of the most common kinds.

Cabbage. The early kinds may be sown in hot beds in the latter part of March, and in a few weeks they will be fit to transplant in the open ground. Or, they may be sown a little later, in a warm border, under the south side of a board fence. Red cabbage may be sown early in May, and Savoys and the large winter drumhead, almost any time during the month. Cabbages should be transplanted into very rich ground, for this general rule applies particularly to them, that all vegetables where the growth of leaf and stock is the chief object, are greatly benefited by copious manuring. When transplanted, the small early cabbage, as the early sugarloaf and the early York, should stand about two feet apart, and those of a greater distance according to their size, the large winter drumhead, for instance, should be at least three feet.

Broccoli. The Purple Cape is only variety we would recommend for common culture; those who wish to raise other kinds must consult books on gardening, as they require care and minute directions. The Purple Cape should be sown about the middle of May, and when of suitable size should be transplanted in uncommonly rich ground, and they will produce fine heads early in autumn.

Cauliflower. This requires more care than the last; it commonly succeeds best when sown early in fall and transplanted into beds which are protected from the winter by frames, and sash, and mats. It succeeds well, however, if sown very early in a hot bed, and afterwards transplanted, as the plants become larger, into a later hot bed, any finally into open ground in the latter part of April. These if well managed will produce heads in June. If sown early in May, cauliflowers may be treated the same way as Purple Cape Broccoli, and with nearly the same success.

Kale and Brussels Sprouts may be sown about the middle of May and transplanted early in July in rich ground. They are used as greens, and are best after having been touched with sharp autumnal frosts.

Asparagus. The seeds should be sown early in spring in the best ground in the garden, in drills of about one foot apart. They may be transplanted into beds when a year old. They will not, however, produce good

shoots for us in less than three years. An asparagus bed properly prepared, will continue to afford crops for twenty years or more. New beds are made by transplanting, thus: dig the ground 20 inches or two feet deep in the form of a trench, fill this trench with alternate layers of soil and manure, until near the top, when the whole should be covered with a few inches of rich mould, in which the roots should be planted, with the crowns about three inches below the surface, and about one foot apart. Or, the bed may be sown with seed at once, and the plants afterwards thinned. Old beds should be cleared off early in spring before the plants start, and then covered two or three inches with rotted manure which should be dug in with a fork, taking care not to injure the plants.

Globe Artichoke may be raised from seed or from young suckers taken off in spring. The seed should be planted in drills about one inch deep and about one foot apart. When the plants are a foot high, they are to be transplanted into ground trenched eighteen inches deep and mixed with manure, the plants standing about three feet apart, or three feet by five feet according to Bridgman.

Peas. The early varieties should be sown as early as possible in the spring. Double rows are the most convenient, and these double rows should be about a foot apart, and a space of from four to six feet, according to the height of the peas, between these double rows. Peas should be sown about two inches deep, and two or three inches asunder in the rows.

Beans. English beans should be planted so early that they may produce their crop before the heat of summer; the seed should therefore be put in the ground on the earliest opening of spring. A clayey loam is best, but a lighter soil is good if they are well rolled. The drills should be about two inches deep and two or three feet apart, and the seed two or three inches in the drill. The Mazagan and Lisbon are the earliest and the Genoa best for late crops. The Windsor, the Sandwich and the broad Spanish are excellent.

The kidney or common bush and pole beans, require a light rich soil, and may be planted in hills, three or four seeds to a hill, or in drills two or three feet apart, and two or three inches in the drill. As kidney beans are tender and easily injured by frost, the planting should be delayed until settled warm weather, which brings them forward rapidly. Pole beans require the same treatment as bush beans, except the addition of poles.

Cucumbers, melons, and squashes, should be planted about the first of May, in highly manured ground, or in copiously manured hills, about four feet apart. In clayey ground it is not reasonable to succeed to plant them on ridges of manure, covered several inches with earth; these should be at least a foot high, and they will produce twenty times the amount of crop that is obtained the common way. As soon as they are up a person should go over them three times a day, and pinch to death with his thumb and fore-finger all striped bugs which can be found upon them, and continue this operation until the plants are beyond their reach. The best cucumbers are the Early Green Cluster, and the Long Green Prickley. The green fleshed Nutmeg melon is most excellent for eating.

Carrots require a deep rich sandy loam. They may be sown in drills a foot or eighteen inches apart, and six or eight inches distant in the drills. The Early Horn is the earliest, and the Long Orange is the best for main crops.

Beets. Those intended for early crops should be sown as soon as the ground is open, and main crops deferred till warm weather in May. They need a deep soil and plenty of manure, and may be sown in drills, afterwards to be thinned to about one foot apart.