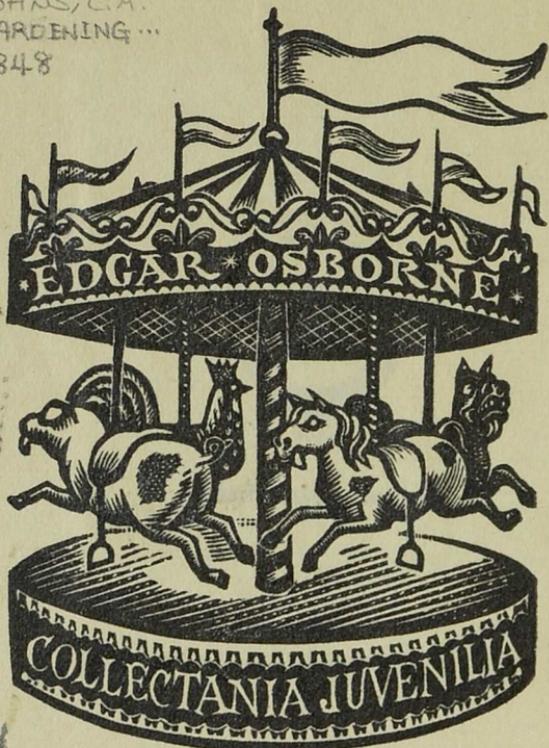




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GARDENING FOR CHILDREN.

EDITED BY THE

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"BOTANICAL RAMBLES," "FOREST TREES OF BRITAIN,"

"A WEEK AT THE LIZARD," &c.

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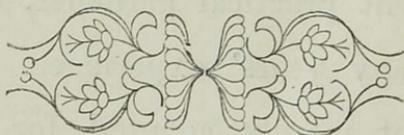
EDITOR'S PREFACE.

As the title, "Gardening for Children," might create an impression that this little book was written to amuse, rather than to instruct, the Editor feels himself called upon to state that all the directions contained in it were furnished by an eminent practical gardener, and are the result of many years' experience. They are, therefore, not merely adapted for the use of children, but will be found equally suited for cottagers and amateur gardeners, who have at their command only a small plot of ground.

The Editor holds himself responsible for the arrangement of the work, and for the soundness of the botanical deductions; the latter, he hopes, will not be the less acceptable for being stated in the simplest language that the subject will allow.

BEENHAM, BERKS,

October 25th, 1848.



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GARDENING FOR CHILDREN.

ONE evening in October, a little boy was sitting with his father and mother, busily occupied in picking caraway seeds out of some biscuits which had been given him for his evening's meal. Willy had spent the afternoon in the garden, and had been greatly pleased at hearing that the little black shining things, which his father had been so carefully collecting from various kinds of plants in his garden, were to be sown next spring in the ground, and that they would soon grow up to plants exactly like those from which they were taken.

Although Willy was very hungry with the exertion of asking a great many questions, and running after his father many times round the garden, it was very clear that he was thinking of something besides his meal. Presently, he looked up with an air of great satisfaction, and said, "Look, mamma, what a lot of seeds I have got!"

"Well, Willy, and what are you going to do with them?"

"Oh, papa has given me a little garden for my own, and when the right time comes, I shall sow them in the ground; and then they will grow up into plants, and I shall be able to pick from them as many caraway biscuits as ever I like!"

This was Willy's first gardening scheme, and, as you may suppose, not a very successful one: but, all in good time, some mustard and cress seed was given to him, which he

sowed in his own garden, and which, when it was grown up to salad, he cut with his own hands; and when it was sent to table, he declared, in spite of the burning taste which made his eyes water, that it was very nice.

Willy is now grown up to be a man, and knows a great deal about gardens, and trees, and flowers; but he has often told me that although he believes the love of Nature was implanted in him by God, yet he feels persuaded that it was greatly fostered by the means which his father employed to promote in him a taste for gardening. If this were the case, his little garden was productive indeed, for it not only supplied him with salads and nosegays in his boyish days, but furnished him throughout his life with an occupation which, while it has proved a constant source of enjoyment, has taught him to look into, and admire, the very humblest of God's works.

As I entirely agree with my friend Willy in thinking the occupation of gardening calculated to promote health, to teach habits of order and neatness, to foster the love of nature, which is instinctive in man, to improve the thinking and reasoning powers of the mind, and, besides all this, to furnish you with an amusement which will become more delightful every year that you live—I have marked out a piece of ground for each of you, which you may call your own. All the plots are equally sunny and sheltered from the wind; the soil is good, and (as you as yet know nothing about digging,) prepared for the reception of seeds, and of most of the common plants which you would like to grow. I will furnish you all with seeds, roots, and cuttings, and will give you full directions for growing them; but, remember, you must do all the work yourselves. Here are sets of

tools, each marked with your initials ; you may wear them out if you will ; but if any are lost, you must replace them at your own expense, and I shall impose a fine on every one who leaves work without putting them carefully back into the tool-house.

I have here some packets of seed, and when I have explained the nature of the plants they will produce, I shall divide them among you, and you may commence your gardening operations at once. I have procured but a few sorts ; because, as you have no room to spare, your object must be to occupy the space well, but not to crowd it. For this reason I have limited my selection to a few of the best sorts.

Let us begin with the Annuals, that is to say, plants that flower, and seed, and die in one season.

ANNUALS.

MIGNONETTE.

You must all sow a little of this, the "Frenchman's darling," as Cowper calls it, because it is a favourite in every garden on account of its rich perfume. Where it has plenty of light and air, it grows about four inches high before it blooms, but it continues to grow in a straggling manner after it flowers, and until the side-shoots become as long as the main branch; the plant then wants neatness of form, and runs to seed. There is little in its appearance to recommend it; but its fragrance is delicious. Now, this will well bear to be planted out, so that if a small patch of a dozen seeds is sown in any corner, the seedlings can be removed safely as soon as

they bear four strong leaves, and the check rather improves than injures them, for it has the effect of producing a more stunted growth, and throwing them into flower sooner than if they were suffered to flower without being transplanted. Mignonette is one of those favourite flowers, that no garden, however limited, should be without; therefore, I recommend you all to sow small patches half-a-dozen inches round, once every six weeks. These little fragrant crops will then succeed each other well, and by weeding out the plants that grow straggling you will be enabled to keep up a supply of dwarf, young, healthy, and handsome plants. When they are large enough to remove, plant them three in a group, in three or four different places in your plot of ground, and as other sowings come forward, do the same, for this arrangement does not take much room.



CONVOLVULUS TRICOLOR.

CONVOLVULUS TRICOLOR.

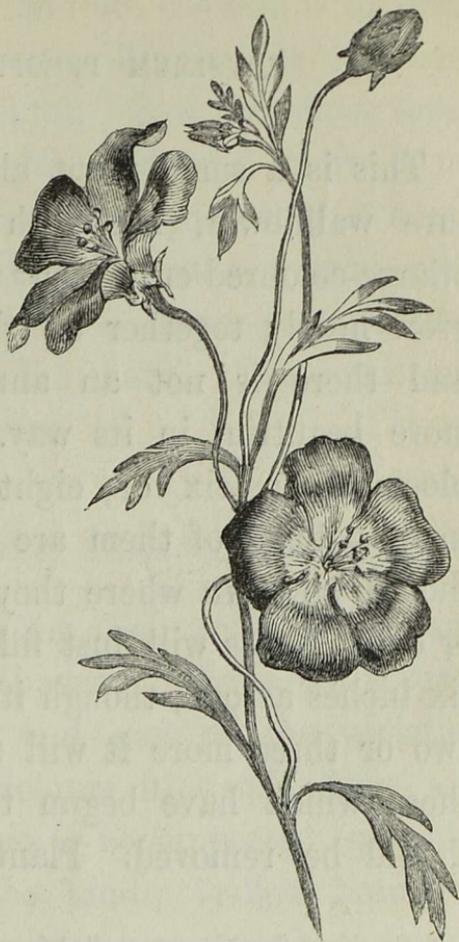
The next kind of flower will interest you from its habit, colour, and abundance of bloom. The *Convolvulus tricolor*, as it is called, from the dwarfishness of the plant and the comparative smallness of its flowers, grows about a foot high, rather spreading, has funnel-shaped flowers of a dark blue, with white centre and yellow throat; these expand in the bright day, but close up, like an inverted umbrella, on the approach of rain or darkness. Three or four seeds may be sown together in a small patch, and the plants are to remain there to flower, because they do not succeed so well when checked by removal, as when allowed to perfect themselves where they are sown. Two or three groups of this plant will be sufficient, because there are others that

deserve a place, and you must not have your garden too crowded.

NEMOPHILA INSIGNIS.

This is a showy annual of a dwarf growth, which soon displays abundance of small blue flowers a little cupped, having a pure white eye, and deeply cut leaves. Its seeds may be sown at different seasons, a few in April, and a few at the end of September ; for if the winter be not very sharp, they will bloom very early in spring, and those sown in spring will come into flower by the time the autumn-sown ones decline. The young plants will bear removal, but I prefer sowing them where they are to bloom ; there is, however, no harm in planting out the few that you take up from a patch when they have been sown too thickly ; and some gardeners make them regularly potted

plants, and therefore sow all in one place, and pot off or plant out at pleasure. They are very beautiful till they begin to straggle along the ground, when, although they still keep flowering a little, I should advise you to pull them up to make room for something better. The next plant to which I shall invite your attention is of a very different hue, a brilliant orange colour.



ERYSIMUM PEROFFSKIANUM.

This is a small plant almost like a miniature wallflower, but with the most brilliant orange-coloured cruciform* flowers. The flowers grow nearly together on the terminal shoots, and there is not an annual in cultivation more beautiful in its way. They are in full bloom when six or eight inches high, and small patches of them are very striking; they should be sown where they are to bloom; six or eight plants will just fill up a patch about six inches across; though if there happen to be two or three more it will not matter, because those which have begun to decline in bloom should be removed. Plants when they have

* Cruciform flowers are so called from having four petals arranged in opposite pairs, so as to form a *cross*, as the stock, wallflower, and all the cabbage tribe.

passed their beauty, and are covered with dead and dying flowers, are offensive to the eye, rather than ornamental. Sow therefore three or four patches of this seed, and there is no better way of marking the space they are intended to occupy than to make a ring with the edge of an inverted flower-pot, keeping your sowing within the mark. The next sort well deserve their name of

SWEET PEAS.

These are grown for their scent, and abundance of variegated flowers. There are several varieties of colour, and each of the varieties has two or three colours in itself; they are flowers which require to be supported by sticks or something of the kind; leafless branches of trees are perhaps the best support, because the peas will grow over them, and quite hide



their unsightly appearance with their mass of flowers. These may be sown ten or twelve in a patch, and they will grow three feet high, so that neat branches of the same height should be placed for the peas to climb over. Some gardeners, however, use only a single stake and tie up the peas as they grow, till they are two feet six inches high,

when they allow them to fall over and form a head of bloom ; but nothing is so good as two or three branched sticks, which support the peas well, and give much less trouble than single stakes. The Sweet Pea is also an old established favourite as a nosegay flower, and may be cut with long stems.

I will now introduce a very important annual, the varieties of which have been greatly increased in number by the gardeners of Germany, I mean

TEN-WEEK STOCKS.

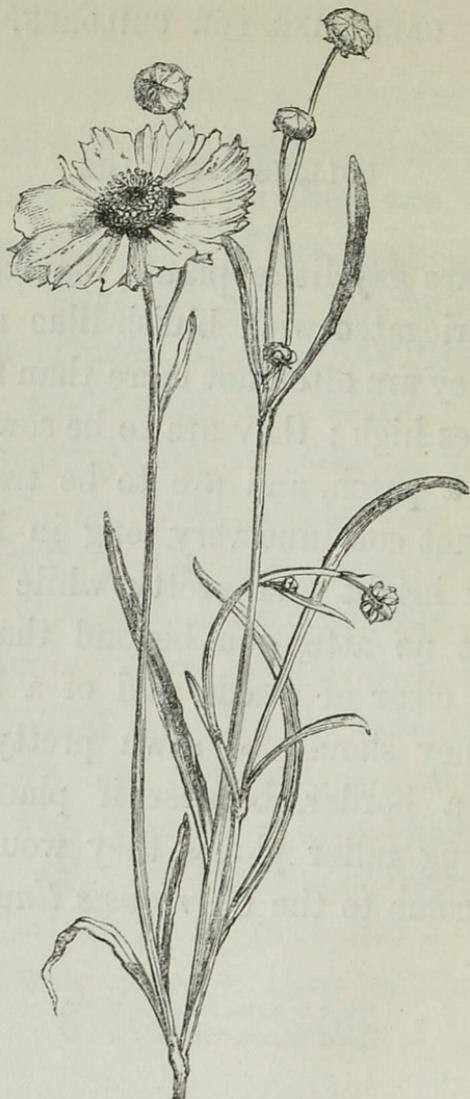
There used to be only the scarlet, white, and purple, and they were general favourites even then, both on account of their colours and for their exquisite fragrance ; now, observe, I have ten distinct colours, and the Germans profess to have twenty or thirty. I have limited my selection to the very distinct shades, but

as I shall only give each of you two colours, you must all sow them very carefully, and exchange plants as soon as they are ready to plant out, so that each of you may possess all the colours. Here you have dark purple, light purple, lilac, crimson, scarlet, pink, flesh-colour, slate-colour, lead-colour, and white. There is enough in every packet to allow of your sowing two rows or drills across your four-foot bed, which will be the best plan. It is customary to sow stocks in hot-beds, thus to obtain an early bloom, which is almost gone by before the crop sown in the open air comes on; but we must be content with one season of flowering. The original of this plant grows wild on the sandy sea-coast of Britain, but in this state has little to recommend it. Let us now see what else we have in the way of Annuals.

COLLINSIA BICOLOR.

These are gay little plants, having spikes of bloom, variegated with bluish-lilac and white, though they are often not more than from six to nine inches high ; they are to be sown ten or a dozen in a patch, and are to be transplanted. They do not continue very long in bloom, but look very bright and pretty while they last ; they want no attention beyond that of keeping them clear of weeds, and of a little thinning. They should be sown pretty near the front of a border, because if placed further back among taller plants they would be lost. We now come to the *Corriopsis tinctoria*.





CORRIOPSIS TINCTORIA

CORRIOPSIS TINCTORIA, OR CALLIOPSIS BICOLOR.

This is a tall plant, which contrasts well with sweet peas, for it grows much about the same height, flowering abundantly, and lasting for a considerable time. It has a yellow flower, with a dark brown eye, and is conspicuous in a good border; the stalks are remarkable for being so fine and wiry that although we see the flowers in abundance, the stems that support them are barely visible. These, like the sweet peas, should be sown in small patches, where they are to remain, and will need no support, for their stems are strong. The Branching Larkspur, of which these are the colours, blue, pink, and white, contrasts well with this; but nothing is prettier than the Dwarf Rocket-larkspur.



THE DWARF ROCKET-
LARKSPUR.

These are to be sown where they are intended to bloom ; they vary from nine inches to one foot in height, and give us several shades of blue, varying from the darkest to that of a bright sky ; several shades of red, from the deepest pink to the lightest blush or flesh-colour ; and various purples as

well as pure white. They are very double and rich when good, but this must depend on the seed, which, I hope, in my case is very good. A few groups of this, with from ten to twelve seeds together, will present a very brilliant appearance at flowering-time. They need only to be sown and kept clear from weeds, for they are hardy, strong growers when they have light, and air, and good soil ; but be careful to protect them from slugs, which are very partial to them.

FRENCH MARIGOLDS

Have nothing but their golden-edged, brown flowers to recommend them ; they have a far from pleasant smell, but they look showy in the autumn, when there is little to help them out. They may be sown in any temporary place, to be planted out afterwards, and well

deserve the trouble, their flowers being often as beautiful as those of a first-rate ranunculus. Their colours, however, are limited to two, a rich red-brown, and a bright, golden yellow, either combined in various proportions in the same flower, or confined to one. They should be planted three in a group, because the diversity of bloom will thus be greater, though the flowers vary greatly in the same plant. The bloom is very brilliant and generally very abundant, and lasts till the frost absolutely kills the plant. As an excellent companion to these I must introduce

THE CHINA, OR GERMAN ASTER.

These flowers should be sown together in one place, and afterwards planted out on the borders about three in a group. They are plants of dwarfish growth, but spread their

flowers about a good deal, when they once begin to branch. There is an immense variety, for not only are there all shades of red and blue, both of which appear mixed with white, but the white is mixed singly with all the shades, so that the autumn garden is much indebted to this flower for a good deal of its gaiety and brilliant effect. The former



of these flowers are both single and double ; of the latter some have all the florets strap-shaped, while others have them quilled in a remarkable manner. They want little attention, provided they are kept clear of weeds, and are planted in a moderately good soil.

CANDY TUFT.

This very old favourite is of two colours, purple and white. It grows dwarfish, and, when in bloom, is literally covered with flowers, so that you see nothing of the plant beneath. This, like some others, may be grown where it is to flower, about ten or a dozen plants in a group. I have only got the white ; I do not think it so desirable to sow the purple, because there are many flowers in bloom of the same colour, at the season when these are in perfection. The round masses of pure white

flowers are striking, and, interspersed with gaudier tints, produce an appearance of lightness and cheerfulness. It is very hardy, and will bear a good deal of ill-usage. You now have twelve of the best annuals ; there are very many more that I might have obtained, but I have selected such as I considered best adapted to your purposes, sorts that will not only be the most likely to thrive, but which possess qualities that will not fail to afford you much gratification.

BIENNIALS.

THE only Biennials I shall offer you are

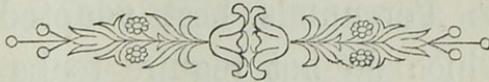
WALL-FLOWERS AND SWEET-WILLIAMS.

Both of these are extremely hardy and easy of growth, and during their season are very gay.



The Wall-flower is also very fragrant, and must be reckoned among the most welcome of our spring-flowers. You should sow them where they may grow for a few weeks, and then plant them out where they are to bloom the next year, or else transplant them while they are young to a nursery-bed, where they may grow stronger, and be

removed to their final destination late in the autumn. When these have bloomed they may be thrown away, and the supply kept up by newly-sown ones; for, although biennials can be occasionally kept over the second year by means of cuttings, and the plants themselves will stand through the winter, they never prove handsome or healthy.



PERENNIALS.

AFTER all, these most deserve the Florist's care. The character of this class of plants is that they are continuous, that is, they continue growing from year to year, either increasing by their roots, or giving us the opportunity of propagating them by other simple means. The former, those, namely, which spread at the roots, may be taken up and parted into as many pieces as can be pulled or cut off, with some little root remaining attached to the plant. All these pieces turn out precisely like the parent, but when we sow the *seed* from a Perennial we cannot positively foretell this result in the case of a single plant. You will find those Perennials best adapted to your purpose which do not require to be disturbed oftener than once in three or four years, and

which, besides bearing a handsome bloom, are well-shaped, hardy-plants. We will begin with a sort of

PERENNIAL LUPINE.

Of all the Lupine family the one which excels in richness of colour, length of spike, and closeness of bloom is *Lupinus polyphyllus*.

This plant is compact and the foliage elegant. The flowers vary in colour, from light to deep blue; some are variegated with blue and white, while others are of a pure white, without the admixture of any other colour. They will bloom the first year after sowing, and will soon spread into larger plants, with an increased produce of flowers every succeeding season. So great a favourite was this flower on its first introduction, that seeds could not be purchased for less than ten shillings each. It is now become more common, but



does not a bit the less, on that account, deserve a place in your garden. Another recommendation is, its being remarkably hardy. It flowers all the summer, and although the winter frosts kill it down to the ground, the first gleam of spring recalls it to vigorous life, and its highly-ornamental foliage is attractive long before it shews its

flower-buds. Next in rank to this excellent perennial I would mention

THE COLUMBINE,

Which you should sow in May, and it will bloom the next year. The plant is as elegant as the lupine just mentioned, the bloom of the very double ones is as rich as it is beautiful, consisting of many horn-shaped florets, which have so quaint an appearance, that they almost remind us of an old-fashioned quilled bonnet. If I knew where to obtain half a dozen healthy plants from a good collection, I should prefer saving the seeds collected from those to trusting to any chance purchase. But if our varieties should turn out indifferently, we will make another trial, for this is far too pretty a plant to be lost. Its colours are dark and light blue, dark and light pink,



THE COLUMBINE.

blue and white mixed, and pink and white mixed.

THE POLYANTHUS.

This bright, showy, cheerful flower, that peeps into the world in time to say "Good-bye" to departing winter, needs no description. It is one of the first flowers known to children, in spite of its long name, and is a necessary appendage no less to the cottager's wee bit of ground than to the gardens of the wealthy. I will not promise you many striking varieties from



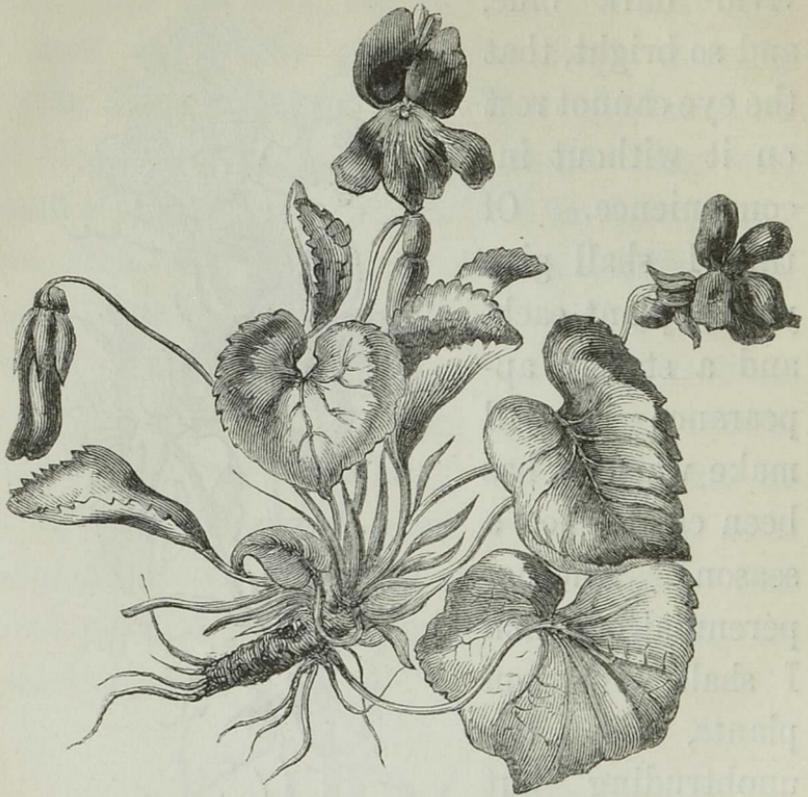
this pinch of seed, but one of you may sow it, and when the plants are large enough, divide them amongst you. You may let them all bloom, and keep the good ones. They will make a neat edging to your bed for one year ; and when they bloom you may select the best, and afterwards increase them by dividing the roots. You must not expect to find more than one in ten worth keeping, but at all events your border will be showy while they are in flower, and this is a great consideration at a time when other flowers are so scarce. Our next plant is more imposing, the great Perennial Larkspur,

DELPHINIUM GRANDIFLORUM.

A noble double-flowered variety of the Tree-Larkspur, with bloom of a most intensely

vivid dark blue, and so bright, that the eye cannot rest on it without inconvenience. Of this I shall give you a plant each, and a stately appearance it will make when it has been established a season. Another perennial, of which I shall give you plants, is the unobtruding but sweetly scented little flower, the Violet.





THE VIOLET.

Of this there are many varieties, single, double, white and blue. The single ones bloom

the most freely in the open air ; two plants of each sort will be enough for you, because they will, in two or three seasons, become large patches. They must be carefully put into the ground and well moistened with rain-water.

THE PANSY.

One would scarcely believe that this favourite flower, which for richness and lustre of colouring is unrivalled, should have derived its origin from the inconspicuous *Viola tricolor* of our cornfields. Yet such is the case, and perhaps no flower affords such strong evidence of the florist's skill and patience.

The varieties of the Pansy are endless ; the best are round in the outline and smooth on the edge, and the colours rich and distinctly marked. It may be struck from cuttings at any season ; but the best plants are reared



WILD PANSY.

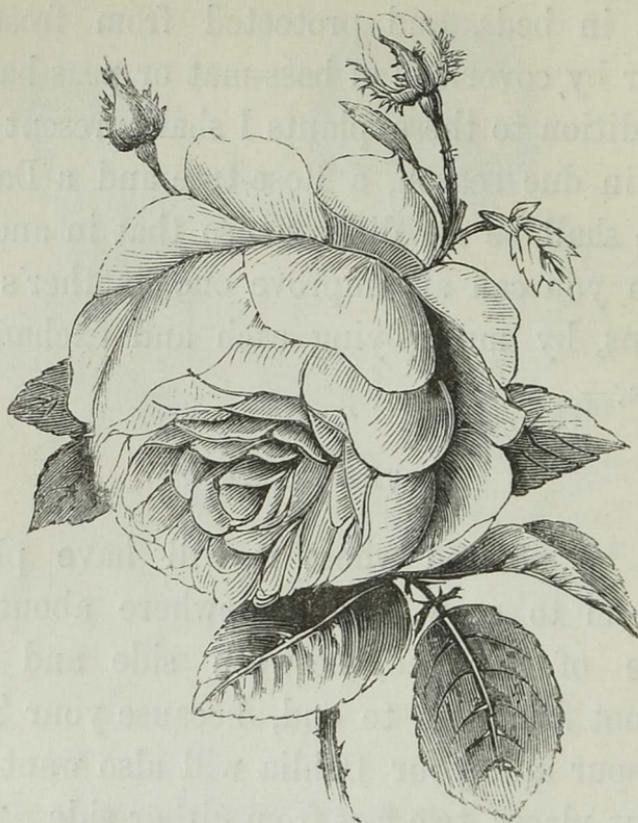
GARDEN PANSY.

from side shoots taken from plants well earthed up ; or they may be raised from seed sown from April to June, and a constant bloom may be kept up by taking off side shoots every fortnight. They should be planted six inches

apart, in beds, and protected from frost in winter by coverings of bass-mat or peas-haulm. In addition to these plants I shall present you each in due season, a Rose-tree and a Dahlia. These shall be all different, so that in another season you can all improve one another's collections, by multiplying each and exchanging plants:

THE ROSE

Must be planted where it will have plenty of room to grow, and somewhere about the centre of the bed, between side and side, but not from end to end, because your Tree-Larkspur and your Dahlia will also want prominent places, two feet from either side. After planting your Rose, you must carefully tread in the soil round its stem, so that the earth may be closely pressed about the roots. When the leaf-buds of the Rose begin to swell, cut



THE ROSE.

the last year's shoots down to the three eyes nearest the stump, and the strength of the new branches will thereby be greatly increased.

Towards the latter end of May you may plant out

THE DAHLIA.

As the spring frosts have now passed away, we may plant out the Dahlia, a flower which, though hardy enough in the autumn, is liable to have its young shoots sapped so late as April. Turn the ball of earth out of the pot, without disturbing the fibres, make a hole in the ground with your trowel to receive it, cover in and press the earth gently around it, and give the plant some water in order to settle the earth about the fibres. As the Dahlia grows fast, you should drive a good stake into the ground close to the plant, and to this it must be tied as it advances, but not so tight but that as it grows it may push up the cord, and that the main branch may not be checked or bent in its growth. After a while it will require



THE DAHLIA.

other stakes to fasten its branches to, so that the wind may not blow the flowers one against another, nor allow the branches to be injured by rubbing or chafing.

We will by-and-by walk through the kitchen-garden, where all the men are at work, and where they may let you try some of their implements. In the flower-garden, where all your spaces are allotted out, you will each of you find a piece of ground ready dug to your hands, four feet wide and twenty feet long, to contain all your plants, and quite enough to exercise your taste. I recommend you to sow the dwarf Annuals that are not to be removed before they bloom, such as *Convolvulus*, *Nemophila*, *Erysimum*, *Collinsia*, *Larkspur*, and *Candy-tuft*, in patches pretty close to the side. Begin two feet from the end, and in the centre of the third foot make a little round

hollow, either with a flower-pot or with your hand ; in this sow a dozen seeds of one of the dwarf plants ; in the centre of the sixth foot and of the ninth foot do the same, so that one patch of each of your six dwarfs will bring you to the eighteenth foot. Let all the patches be near to the edge. If your patches are six inches wide, the front edge ought to be three inches from the edge of the bed ; and the best way to measure from the end is to reckon two feet six for the first patch, and put a small bit of stick down at that distance, then at intervals of a yard put five more bits of stick, this will bring your last bit of stick two feet six inches from the other end. Next, make the other side match ; you will thus have two patches of every sort of dwarf plant, one on each side, and there will be vacancies between them for planting out the dwarf kinds that are to be transplanted, such as Mignonette, China Aster, and the various

Ten-Week Stocks. At the back of these patches you may sow Sweet Peas, Corriopsis, and French Marigold ; for these, being taller, will look better towards the centre of the bed. All that are intended to be transplanted may be sown in vacant places. If you choose to occupy one end of your plots with them, sow them in drills across the bed, not more than six inches apart, and when the plants are ready for transplanting, a regular exchange can take place among you, so that some of each sort may be possessed by all. This sowing will occupy some time, after which I will proceed to shew you all the kinds of work going on, which you have found already done for you. You must observe how the tools are handled, for you will have to dig and rake and hoe and weed for yourselves ; for I shall allow no one else to touch your gardens after this. Perhaps I may give you a little practice

in the use of the tools ; and if not, you will at least see all the different operations performed ; but first sow your seeds according to your different tastes. I shall not interfere with you ; only remember which are tall and which are short, in order that you may not have a dwarf plant hidden by a tall one. You may have your Rose-trees and your Violets now, but the gardener must take care of your Dahlias until all chance of frosty weather is gone by.

The ground is now in such an excellent state for sowing garden-seeds, owing to the recent rains, and there is so good a prospect of fine warm weather, that in the course of ten days you may expect to see some of your young plants appearing. You will perhaps have occasion to water them now and then, if the ground should become very dry ; this I would recommend you to do in the evening, using a watering-pot with a rose,

and taking care not to confine your watering to the exact spot where the young plants are growing, and this for a reason which I will explain to you by-and-by. As the young plants appear, you will feel too anxious about their welfare to need being told to watch them: your great care will be to find out what you can do to serve them. You will look upon them as more really your own than anything that you have ever possessed, because they never belonged to any other person. Nor will there be any selfishness in this feeling; for the gratification which we feel in contemplating plants of our own rearing is an instinct implanted by Him Who ordained that man should eat bread in the sweat of his face, and Who, to cheer him in the midst of his toil, decreed also, that he should reap in joy. You already, I doubt not, anticipate great pleasure in gathering

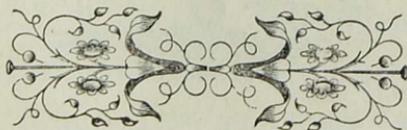
nosegays from plants raised from seeds sown by yourselves in your own gardens ; so I need only assure you that the feeling will grow stronger as you grow older. From having watched them come into leaf, and bud, and flower, and from having seen how entirely dependent they are on the dew of God's providence, you will value them as gifts from Himself, bestowed in fulfilment of His promise, to reward your industry and patience.

It may happen that some of your young friends will be glad to give you, from their own gardens, seedlings which you do not possess, in exchange for some of yours which they have not sown. In this case, you will see from the subjoined list, the names of those which you would do well to select, if you have a choice. My list contains also the names of those which I have given you, for I have brought them all together for the convenience of reference.

HARDY PERENNIALS.

The following would be a desirable collection of Perennials for a moderately sized garden :—

Anemone, Columbine, Hollyhock, Campanula, Crocus, Larkspur, Pink (including Picotee, and Carnation), Crown Imperial, Snowdrop, Christmas Rose, Hepatica, Hyacinth, Scarlet Lychnis, Iris, Lupine, Mimulus, Polyanthus-Narcissus, Jonquil, Pæony, Pansy, Phlox, Ranunculus, Violet, Primrose, Polyanthus, Auricula. Most of these boast of considerable variety, and of course I mean that the best of these varieties should be procured.



ANNUALS.

The annexed will be found the most brilliant and manageable of any, the best varieties being selected:—China Aster, French Marigold, Coreopsis, Sweet Pea, Phlox Drummondii, Campanula Loreyi, Clintonia pulchella, Collinsia, Convolvulus, Larkspur, Erysimum, Eschscholtzia, Candy-tuft, Leptosiphon, Lobelia, Lupine, Ten-week Stock, Nemophila, Nolana, Mignonette, Schizanthus, Zinnia, Rhodanthe.



RAISING PLANTS FROM SLIPS, CUTTINGS, SHOOTS, &c.

I will mention another mode by which, after a little pains, you may obtain Perennials. In every good nosegay you will be sure to find some sprigs capable of striking roots and becoming complete plants; some of these form roots readily, only requiring to be planted in an open border; others will require great exactness in their preparation and constant care until they are well rooted. Pansies, Wallflowers, Fuchsias, Roses, and such flowers as are always cut with some of their leaves on, afford us the opportunity of striking young plants. Others, which are cut with the stems only, will not. The Tulip, Ranunculus, and Anemone are of this kind. Generally we may assume, that

wherever there are leaves, there are also buds. A slip or shoot of any plant must be prepared for striking, by cutting the lower part neat and square, close to the bottom of a leaf, and taking off the top; and, according as the leaves are near together, or far apart, you must cut off one, two, or more, so that an inch of the stem may be put into the soil, with an inch, or an inch and a half, above it, not bare of leaves. But in taking off the leaves, you must not cut quite close to the stem, or the bud at the base of the leaf might be damaged. In the case of a sprig of a Rose, one leaf is generally enough to remove; but in Southernwood, you must strip off a good many. The objection to the leaves being left on, is, simply that you cannot then place the cuttings so well in the soil. If you are only striking two, three, or even half a dozen, you may fill one third of a flower-pot

with broken potsherds, to give the water an opportunity of running away freely ; the other two-thirds may then be filled with a compost of loam, dung, and sand, in equal proportions. After this knock the pot on the bench or table, to shake down and settle the earth. Press the edge of a tumbler or bell-glass on the soil, to make a ring, planting your cuttings within the mark ; then, with a small piece of stick, or your pencil, make holes and insert your cuttings an inch deep ; water them very gently, so that the soil may be closed about them, and cover them with your glass ; some plants will strike in a few days, but they ought not to be removed until they have begun to grow well. The pot may be placed almost anywhere ; but when the sun shines brightly, fasten a piece of paper on the sunny side of the glass, to form a shade. Let the glass be taken off every morning, and the inside wiped quite

dry, and let the pot be watered sufficiently to keep it moist. As soon as the cuttings have begun to grow well, you may conclude that they are well rooted: turn out the ball of earth, and divide it, taking care not to injure the growing plants. Let each of these be then planted in a separate pot, and watered daily; put them in the shade, and they may be placed in the house, or in the ground, according to the treatment which they require.

The greater part of these cuttings would strike, if planted in the common open ground, under a hand-glass, and shaded. In the month of June and July, all sorts of greenhouse-plants will strike, and require little attention but occasional watering and shading. When they are growing well, they must either be potted, or planted in the garden; and when you transplant them, take care to raise them with a trowel in such a way that each plant

may have a mass of earth hanging to its roots. I recommend you to try Myrtles, Geraniums, China Roses, Heliotropes, Pinks, Pansies, Mesembrianthemums, Hydrangeas, Verbenas, Petunias, Phloxes, very choice Sweet-Williams, Wall-flowers, and almost all shrubby Perennials. Many of them will be found in good nosegays, and it will be a pleasing amusement to pick out the leafy stems, which, when they have become plants, will be a source of much gratification. Some plants strike with wonderful facility; the Southernwood will strike in a bottle of water; so also will Mint, and some others; and most of the Cactus tribe will strike out their roots lying on a damp shelf, and, if left on the soil, will root into it sideways.



THE FRUIT-GARDEN.

When Willy was a little boy his father happened to have in his garden an apple-tree, which bore no fruit, and which he consequently cut down and grafted with a kind of apple which he was told was very rare and valuable. In due time the graft produced a fair show of blossom, which was succeeded by a solitary apple. When this was on the point of ripening, Willy was taken one day into the garden, and the apple being pointed out to him, he was told that he was on no account to gather it, as it was to be saved for a special purpose. A few days afterwards, his father going to examine his favourite apple, found it hanging to the tree indeed, but sadly disfigured, nearly half of it being gone. It was very clear that

neither wasps nor snails had been the robbers, for there was plainly perceptible the marks of a small set of teeth, and Willy, though an obedient boy, was immediately named as the probable culprit. "Willy," said his father, "do you know who bit my apple?"—"Yes, Papa, I did."—"And how came you to do so after I strictly charged you not to touch it."—"Why, Papa, you only told me not to *gather* it, and as I wanted very much to taste it, I did not think there would be any harm in my biting out a little bit." Willy was very much ashamed of what he had done when he grew a little older, and justly so; for children should make it a rule not even to taste fruit in any garden which is not their own, except they have received express permission.

It is on this condition only that I shall allow you to walk in my garden when you please; but that you may have some fruit of

your own I mean to give each of you a gooseberry and a currant-bush and a dozen strawberry-plants, the produce of which you may do what you like with. I shall also give you directions for increasing them, so that in the course of a few years you may be able to send to table some good dishes of fruit.

GOOSEBERRIES AND CURRANTS.

In October, when the leaves have fallen off, select shoots, about eight inches long, of the same year's growth, and cut them off with a sharp knife immediately below a bud; remove two or three inches from the end and insert the cutting three inches into the ground in a shady border. If the shoot be a long one you may divide it into two, always taking care to remove the tops. They will require no further attention till the following autumn,

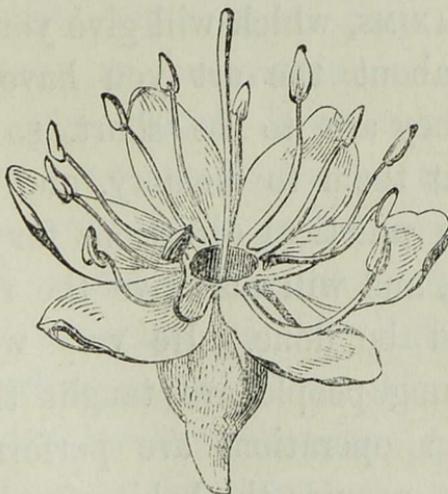
when they may be planted out. When they begin to grow bushy, prune them, at any season between the fall of the leaf and the swelling of the bud, by cutting away all but the leading branch and two or three of the side-shoots, Any branch that grows in a straggling manner should be shortened, and, as a general rule, the shoots which are likely to prevent a free admission of air should be cut away in preference to any others. If your tree gradually acquires the shape of a bowl, you will have pruned judiciously. The varieties of *Ribes*, which are cultivated for the sake of their flowers, require similar treatment.

STRAWBERRIES.

The varieties of this delicious fruit which I consider to be the best, are Keens' Seedling, Elton Pine, Myatt's Pine, Queen Victoria,

Swanstone's Early, and Alice Maude. You may easily increase your stock of these plants by pegging down the runners of those which I have given you. Roots are thrown out from all the knots of leaves on the runners ; but you will get the strongest plants by pegging down those only which are nearest to the parent plant, and cutting off the growth beyond. They will be well rooted by August, and, if planted out, these will probably bear the next season ; but September, or even October will be early enough, if you only want young plants. They thrive best in good rich loam, such as we obtain from the surface of a pasture. They should be planted a foot apart, and in rows two feet apart. When the outer leaves turn yellow or red, fork between the rows, turning in all the decaying leaves and runners which are not wanted ; but be careful not to remove any leaves which remain green,

as they are employed in strengthening the roots for the following season. When the fruit is beginning to ripen, clean straw may be laid between the rows to protect the fruit from the soil ; but the custom of laying down short grass instead of straw does not always answer ; for if the season should turn out to be a wet one, the grass is liable to rot, and impart a mouldy flavour to the fruit.



THE KITCHEN GARDEN.

I met my old friend Willy yesterday, and told him that I had set you all busily to work with your flower-gardens. He seemed much pleased to hear of it, and has kindly promised to call in occasionally and give you a hint or two ; he also promised to write out for you a set of MAXIMS, which will give you much information about the art you have begun to study. They are to be short, so that you may commit them to memory, and every one will contain practical directions for doing certain things, and will also give the reason why they should be done. He very wisely says, that if young people are taught the reasons why certain operations are performed, they will in time acquire the habit of asking them-

selves whether what they are about to do is right or wrong, before they actually set to work. Now I quite agree with Willy, and hope that you will always ask for information about any gardening operation, the reason of which you do not understand, provided only that you take care always that you ask, not to satisfy curiosity, but to gain knowledge.

Willy and I, too, are quite agreed in thinking that if young people once make gardening their favourite amusement, they will never cease to take an interest in it. There are very few games which boys and girls care about when they are grown up to men and women: but the little gardener will, in all probability, become a great gardener, if it please God to spare his life; and the young gardener, when he is grown old, will prefer a seat under the tree that he planted when he was a boy, to the richest couch that you

could offer him. He mentioned a striking instance of this in the person of his grandfather.

“Willy’s grandfather!” you say, “why he must have lived a very long time ago!”

“Not so long ago as you think : but you shall hear. He was born in a remote village, and in his earliest years was very fond of working in such a garden as I have given you. His father sent him to sea when he was a boy, and for a great number of years he was an officer in the navy, and served all through the American and French wars, so that he was exposed in his time to many dangers and hardships. Willy’s recollection of him does not extend to this period ; he remembers him living in a town near his children and grandchildren, but in a house to which no garden was attached. He still, however, had a great liking for the amusement of his childhood, and spent a great deal of time in a neighbour’s

garden, digging, sowing, and planting, and working at the hundred other occupations which an active mind and an active hand are sure to discover, and to execute well, even in the most perfectly kept garden. He had now passed his seventieth year, but had still the full use of all his faculties, except that he was growing deaf. This affliction he bore most patiently, 'knowing certainly that it was God's visitation ;' but as it deprived him of much of the pleasure of society, he determined to retire to his native village, where he possessed a cottage and a tolerably large farm. The latter he let, reserving for his own use the cottage and the bit of ground in which, sixty years before, he had sown his cress, and radishes, and sweet peas, but which now was a wilderness of tall weeds. He also had about a quarter of an acre of ground hedged off from a field ; and this he resolved to make his kitchen-garden.

“When he had been settled about five years, Willy went to see him. His little cottage was a gem ; it was thatched, and had a front as white as snow, with a green porch. In a little slip of ground before it, which was railed off from the road, grew the most luxuriant sweet peas that were ever seen, all carefully trained to the stems of taller plants. An old-fashioned China Rose on one side of the door, and nailed to the wall, was in flower all the year round ; on the other side was one of the finest myrtles that were ever seen ; and a Clematis, that perfumed the air for a great distance round, almost concealed the upper part of the white wall. How the front was white-washed at all was a puzzle that nobody could explain, for the good old man loved his flowers too well to allow any one to white-wash it for him ; so he always did it himself. His flower and fruit-garden was on the opposite side of

the road. Here he had a long bed of strawberries, raised on a bank of stones, and sloping towards the south, all constructed with his own hands ; and to this perhaps he gave more attention than to anything else ; for strawberries were the only fruit that his venerable partner cared to eat, and he always had the earliest and finest in the parish. ‘The strawberry season was close at hand,’ said Willy, ‘when I went to see him, and I received a strict charge not to gather any yet, for the first dish was intended for grandmamma. I did not lose anything by attending to the injunction, for they were suffered to remain until they were quite ripe, and grandmamma gave me more opportunities of testing their flavour than she allowed herself.’ The rest of the garden was intersected with paths edged with box or polyanthus, and the beds were filled with roses, carnations, tulips, larkspurs, China-asters,

and *such* Brompton and ten-week stocks as would have won prizes at half the horticultural exhibitions in the country. There were besides plenty of gooseberries and currants, and a few old apple-trees. A corner was reserved for brocoli, a vegetable on which he particularly prided himself ; the largest was always suffered to run to seed, but I am half-inclined to think that (partly at least) it was kept to be looked at, and to excite the admiration of wondering visitors. Some of the thorns in the hedge were cut down and grafted with pears. ‘God knows,’ said the old man, ‘whether I shall live to eat fruit from them ; but if I don’t, they will do somebody good.’ I shall never forget this pious remark, or the words that he addressed to me, when, having led me round his little garden, he stopped me and said : ‘Willy, I am too old to enjoy society now ; I feel my affliction very much when I am with other

people. I see my neighbours talking and laughing, and I do not know the subject of their conversation, and I feel all the more lonely for being in company. I don't like to ask any one what they are talking about, for who cares to be troubled by a deaf old man? so I spend as much time as I can in my garden; I can there find plenty to do, and can think about what I like, and I forget that I cannot hear as well as any one in the world.'

“The larger garden was situated nearly a mile from the cottage, and here was a plentiful supply of potatoes, turnips, onions, cabbages, and carrots, not a few of which found their way to the cottages of the poor. Now and then the whole of this garden was put into corn, on which occasions, harvest-home was celebrated with all the honours, the old lady being wheeled out in her chair to be present at the reaping. When he was in his *ninetieth* year I again paid him

a visit, and met him at his own door returning from his field-garden, erect, and with a steady gait, and carrying on his right shoulder his spade, rake, hoe, and fork, and in his left hand a large basket of vegetables for dinner. He took me into his garden and shewed me the pear-trees that he had grafted twenty years before, 'that they might do somebody good,' now loaded with delicious fruit; and then directed my attention to a vigorous fig-tree which had sprung up in the middle of his garden. 'It bore no fruit,' he said, and he did not know whether it ought to be grafted or not; but he had planted a vine near its roots that he might come out and 'sit under his vine and under his fig-tree.'"*

Here Willy stopped, and I fancied that his voice faltered a little; but as I wanted to hear, as I dare say you do, something more of

* Micah iv. 4.

the venerable gardener, I begged him to go on.

“Not long after,” he proceeded, “I was summoned to his bed-side ; on his way home from a neighbour’s house, to whom he had been carrying a basket filled with the produce of his garden, he chose to come across the fields instead of going by the road, and attempting to climb a gate, which, unknown to him, had been taken off its hinges, the gate fell with him on it, and he dreadfully mangled the back of his head. No one believed that he could live many days, but, to the general surprise, in a few weeks he resumed his labours in the garden. He never, however, thoroughly recovered his strength, and two years afterwards, I headed a long, very long, procession that followed his remains to the grave. He sleeps in the peaceful churchyard of ——, with a slate tablet over his grave, inscribed with a simple epitaph,

which after his death was found in his bureau, in his own hand-writing, and paid for with a portion of a sum of money found in the same place, and assigned to the purpose of 'defraying his funeral expenses,' lest, as the accompanying memorandum said, 'any one should be put to trouble about him after he was dead.' His cottage has passed into other hands, and his garden is become a wilderness again."

You will think perhaps that I have been talking to you a long while when we ought to have been working: but the time will not have been misspent, if I have convinced you of the propriety of setting in right earnest about a work, which is not intended to be merely a temporary amusement, but a relaxation and an enjoyment as long as you live. You will now see, too, the reason why I shall expect you to give your undivided attention to every single operation we shall take in hand, and to execute it to the best

of your ability ; for if I suffered you to go through your work carelessly, far from making you good gardeners, I should be only teaching you to be slovenly children, and preparing you to become improvident men and women ; for I call all people improvident who only half give their minds to any employment which occupies their time.

And now for the kitchen-garden.

I have promised to give you some of the commonest, but still most necessary, lessons in gardening, which you very naturally consider an amusement, but which many hundreds, indeed many thousands, follow as a means of earning their bread. I shall not begin with the first step necessary in laying out a garden, because it is difficult ; I do not indeed know an operation in the culture of land more laborious or difficult to learn than that of digging ; I intend it to be therefore nearly the last operation I shall shew you.

Let us begin with a very simple operation : weeding the borders and beds. But you ask very naturally, "how are you to know the difference between weeds and plants?" Attend then to me in one or two particulars, and you will soon become familiar with the difference between plants (as gardeners call all cultivated vegetables), and weeds. Observe this large piece of ground : there is a great variety of crops, but all of them are planted or sown in some particular order. These beans you see are in rows, and they all have the same appearance, that is, their leaves are all of the same form and colour, and they all have the same habit of growth. These rows are as far apart as you can step. Now, in the first place, all the plants, no matter what the colour, form, or size may be, that you see in the space between these rows, are weeds ; that is to say, they ought not to

be there, for, although I see a potato, here and there, and a straggling turnip, they are weeds to that crop of beans, and should be removed, as being injurious. You cannot therefore do wrong in pulling or cutting up, or otherwise destroying, anything that is growing between one row and another. And having cleared this, let us go carefully down the rows of beans themselves, to see if there be not here and there some plant unlike beans, because whatever is unlike them, is to them a weed, and ought to be taken out of their way.

Here we come to peas ; do you see the wide difference between the growth of these and that of the beans we have just left ? well, the same rules apply ; everything growing in the space between the rows must be removed, and then, whatever different plant may be growing among the peas, in their rows, must be pulled out likewise. The end of these peas brings us to

lettuces, and adjoining these are cabbages. These, you observe, are at regular distances, for, although they are in rows, there is a good space between them. Here a similar rule will guide you ; whatever plant there may be in the spaces between the rows, or in the spaces between the plants, is a weed, and therefore must be taken away. You will not fail to notice the similarity in all the lettuce-plants, and an equal similarity among all the cabbage-plants ; yet there is a wide difference between the lettuce and the cabbage, in colour, form, as well as in habit. This great difference in the plants will always enable you to tell one from the other, as soon as you make yourself acquainted with them by observation, and by-and-by you will find as little difficulty in recognizing weeds, even when unassisted by the distances and appearances I have mentioned. Here we have spinach in rows, and

further on, turnips and carrots ; just notice the difference between these three plants : the spinach has a thick smooth leaf, half leathery, and clammy to the touch ; the carrot has a leaf divided into numberless narrow parts, and almost like a green feather ; and the turnip has a rough leaf, that can be mistaken for neither. Now all these three crops will have to be thinned out ; the rows, observe, are about six inches apart, and there will be as many pulled or cut up as will make a vacancy of six inches between the plants in the rows, so that when this is done the plants will be six inches apart all over the space. If the plants had less room than this, they would not grow to perfection. They would crowd each other, and would not attain their proper size ; but, although these three kinds of plants have here been sown in rows six inches apart, so that the labour of thinning them is lessened, this is not always

the case, for the seeds are more frequently scattered over the whole surface of the ground, and the young plants thinned to six inches apart, as well as the eye will enable any one to do it. What is the next crop? Oh! onions; but you see they are almost choked with weeds. The onions are the small grass-like plants, and are so different from all the others that, although there are twenty sorts of weeds among them, you cannot be mistaken. The only thing that comes up like an onion is the leek, a plant of the same family, but these are never sown together. You can see here that the onions are too thick, and perhaps if the weeds were pulled out by hand, a good many onions would come up with them; but this would be a tedious process. I will shew you presently how to chop out the weeds with a hoe, and you will at the same time cut up a great many of the onions.

Along these borders, and close to the paths, there are many kinds of plants that are not weeds, and as the flowers differ more from each other than they do from weeds, I must point out to you the plants which are grown for the sake of their flowers, as well as some of the most remarkable and troublesome weeds. First, you must take notice that all these strong plants in groups must be preserved; they cannot be weeds, for weeds are not allowed to attain such a size; next you will observe that there are at equal distances, all along the borders, patches of young plants, like those in your flower-garden, but differing from each other a good deal in form. You must remember that weeds do not generally come up in patches, but spring up all over the ground alike. Again, unless a place is very much neglected, they are cut up and destroyed before they attain any great size. Indeed borders should

always be thoroughly cleared of weeds before young plants are placed in them, so that the latter may have a fair start, and acquire strength before their rivals can come up and choke them.

I have shewn you that weeding is a most important operation ; now I must shew you the different methods of doing the work. The most convenient ways of getting rid of weeds, are to pull them up by hand, or to cut them with a common hoe, an implement which I shall describe to you in my list of garden-tools. The hoe is a blade of thin iron placed across the end of a long wooden handle. By chopping the earth with this, just under the surface, as if you wanted to chop half an inch of the top soil off, you cut off almost every plant from its root, and the plant so treated dies. In executing this work, you should begin at the edge of the bed which lies nearest to

you. Then by inserting the edge of the hoe into the ground about a foot from your toes, and drawing it towards you, you will disturb the surface of the ground to the depth of half an inch, and cut off from their roots all the weeds that come in the way, being all the while cautious not to destroy seedlings or other plants which are intended to remain. You will thus advance over your work until the whole plot of ground is completed. The hottest and driest weather is generally selected for this work, because the weeds wither away directly ; but as hoeing disturbs a good many weeds that are almost on the surface, without cutting off their roots, the next step is to remove all the weeds, and make the surface smooth with the rake, because a shower of rain would revive all the weeds which had their roots undamaged, they ought therefore to be raked off as soon as they are hoed up. The prin-

cipal weeds here are dandelion, sow-thistle, shepherd's-purse, chickweed, groundsel, plantain. They are all very prolific, that is, they bear seed freely, and shed it rapidly, so that they should never be allowed to bloom in a garden. The dandelion has a root like horse-radish, and the smallest piece of it grows, so that when we are troubled with this weed, we ought to dig all the root out; but constantly cutting off any plant as soon as it appears above ground, will kill it in time. The dandelion bears a number of smooth, toothed leaves, which spread upon the ground, and have a texture very like that of the lettuce. Its large, yellow flowers grow on hollow, leafless, stems, and are succeeded by globular heads of down, which eventually separate into small single tufts, to each of which is attached a seed. A very light wind will waft these away and lodge them in all

parts of the garden. Particular care must therefore be taken that these are not allowed to run to seed.

The sow-thistle, or milk-thistle, is a tall rapidly growing plant, with hollow stems and yellow flowers, which are also followed by cottony heads of seed to be dispersed by the wind. This is easily got rid of, but we are always liable to be favoured with seeds from a great distance, and therefore may always find some of it. These countless plants coming up like small salad are shepherd's purse; look at some of the most forward with their little bunches of small white flowers; some of the outer ones have already formed their heart-shaped pods of seed. A fortnight's neglect of these very plants, which seem hardly a fortnight old, would shed millions of seeds in addition to the immense number with which the ground appears already full, for every time the earth

is turned up, there is just such a crop as this, although they are always hoed up and destroyed before they seed. A neglected garden will get so full of weeds, that it may take years of hard work even to thin them ; besides, it appears that the seeds of these prevailing weeds will live for many years in the ground, and whenever they are brought up within the proper distance from the surface, they will vegetate, so that, without any fresh supply, some will grow every time the earth is turned or disturbed. The mere stirring of the earth that is necessary to remove them, will bring other seeds within the influences that cause germination.

The chickweed comes up, as you see, nearly as thick as the last in some parts of the border ; it is a low, spreading plant, with small, starlike flowers, and is very troublesome, from its tendency to get entangled with anything

that grows near it, so that, very often, it can be only removed by hand.

Groundsel is another tiresome weed, because it is no sooner in flower, than it begins to seed. Its seeds, like those of the dandelion and sow-thistle, are attached to a cottony substance which buoys them up in the air, and carries them to a great distance; but thousands of seeds are washed down into the ground on the spot by the rains, so that it ought never to be allowed to flower. It is too well-known to need any description.

Plantain is a broad-leaved plant, spreading almost flat on the ground, and sending up long spikes of little round seed-vessels sitting close to the stem. It is a curious fact, that these last three weeds are great favourites with tame birds, and almost every one that keeps birds supplies them with one or other of them. It once happened to me that a

certain herb-bed, in which grew mint, thyme, sage, and marjoram, was constantly becoming overrun with these three weeds, and for a long while I could not discover the reason; but the mystery was cleared up when I discovered that when the bird-cages were cleaned out, the refuse was always thrown away upon this bed.

There are many very troublesome weeds besides these; the grasses for instance which will grow anywhere. Their seeds are light, and are blown about in all directions; they live for years in the ground, and as they vegetate when brought up to the surface, are, in fact, more plentiful than any other weeds; consequently any piece of ground left idle will soon be covered with grass, whatever other weeds may be also among it, and so strong are the various grasses, that they will in time overcome almost everything else, so that a

bare field, if neglected, would soon assume the appearance of a coarse pasture.

The bind-weed, a species of wild *Convolvulus*, is a very troublesome weed ; it has long creeping roots, or rather underground stems, which are very brittle and most tenacious of life. The stems are long and wiry, and support themselves by turning round any plants that may happen to grow near them, not only hiding them from sight but strangling them. So mischievous are they, that if they have been suffered to establish themselves in a shrubbery, they will quickly injure or even kill strong and vigorous shrubs. This and couch-grass, or strol, are the greatest enemies, as weeds, that the gardener has to contend against, for they will entangle themselves among the roots of other plants, in which case they can only be eradicated by clearing the roots of the plants to which they have attached them-

selves. They should therefore be picked up as soon as their leaves appear above the ground, care being at the same time taken to remove every particle of root, or they will grow again.

These directions will enable you to distinguish some of the worst kinds of weeds, but long experience alone will enable you to detect them all. You will sometimes, perhaps, discover that you have been expending your pains in nursing an unsightly weed, for which you have rooted up a favourite plant, the habit of which in its young state was unknown to you. This will teach you the necessity of accurately observing the characters not only of full-grown plants, but of the tenderest seedlings; you must learn also to distinguish weeds by their first leaves, and master them before they have mastered you. The gardener who does not begin to clear away weeds until they have thoroughly

established themselves, may be compared to a medical man who does not prescribe remedies for a disease, until it has assumed its most virulent characters.

In weeding, the hoe is your main dependence; when you have finished a piece of ground in the manner that I have described, have recourse to your rake, which you must move to and fro till you have broken all the lumps of earth which you have turned up, and finally clear the bed both of weeds and stones.

As we are upon the subject of raking, I must shew you the different uses of the rake. When ground is fresh dug, it is of course uneven and full of lumps. The use of the rake is to bruise these lumps, and to level the surface; you will sometimes find it convenient to turn the teeth upwards, and to hit the lumps with the back, so as to break them; then gently push and pull the rake over the

surface to draw off the stones. But we have yet another use for the rake; when seed is sown evenly over the surface instead of in rows, it is called 'sowing broad-cast;' it is then necessary to rake the surface all over, making the teeth penetrate the earth to the depth of a quarter of an inch. By these means, little furrows are formed, and immediately filled up again, so that the seeds fall into the furrows, and are covered up.

When the seeds are to be sown in drills, the drills are made of the requisite depth with the corner of the hoe; but since few persons can make these furrows straight without some guide, a garden line is used for the purpose; many people content themselves with two sticks to stretch the line with, but iron implements may be procured, made expressly for the purpose. These consist of a simple iron spike, to which one end of the string is attached,

the string itself being wound round a spiked reel. The former of these is first stuck into the ground, the reel is then carried to the spot to which the line is to be drawn, and when it too has been stuck into the ground is tightened and made fast; the hoe is then drawn along close to the string, and a straight furrow is ensured. One furrow having been completed, you may, by removing the spike and reel over equal distances, mark the whole of your ground with parallel lines; and in order to make sure of your distances, you should use a stick cut to a length equal to the space which you desire to have between your furrows.

When you sow seed in these drills, you must sprinkle them thinly and evenly, but peas and beans you should lay in at equal distances, peas two inches apart, French and broad beans six inches, and scarlet beans a foot. The drills

for the beans should be two inches deep, those for small seeds only an inch and a half. Now you find the rake of use again, because you can just rake in enough of the loose earth to cover the seed well and no more, and the back of the rake is handy to break the lumps if necessary. You observe that these directions apply generally to the sowing of all kinds of seed, and to the hoeing and weeding of them after they are up. I have already shewn you turnips, carrots, spinach, onions, and other small crops, in drills six inches apart, but the peas and beans are three feet, and the scarlet beans are six feet apart. The small crops might just as well be sown broad-cast, but that they would be more troublesome to hoe and thin out, because there would then be no rows to guide you.

The hoe is also of great use in an important though simple operation, namely, earthing

up. The whole of the cabbage family, including Brocoli, Cauliflower, Brussels-sprouts, pickling and common Cabbages, Savoys, Scotch Kale, will throw out new roots as high up their stems as earth is allowed to reach ; all these crops, therefore, should be earthed up as soon after planting out as they have begun to grow. To perform this operation you should stand on one side of the row of plants, and putting your hoe into the ground a foot beyond the plants, draw the earth up to their stems to the height of four or five inches, so as to form a sort of bank on one side. You must then make a similar bank on the other side of the row, and you will have a ridge of earth with the plants rising through it. These soon avail themselves of their newly-acquired power of forming fresh roots, and grow vigorously in consequence. Peas and beans should be earthed up while very young, to protect their tender

stems against frost and cold, and drying winds. Celery is earthed up as fast as it grows, to whiten the stems, which would otherwise be green, and too strongly flavoured to be eatable.

We now come to some peas which require support. These little dead branches are intended for the purpose ; stick them into the ground about a foot apart and three or four inches from the row, so that they may slope over the peas. Now stick some in on the other side, opposite the vacancies left on this side, and let them slope in a contrary direction. Some peas, which grow very tall, require sticks six or eight feet high, instead of two or three feet ; they must also be wide enough apart from row to row to allow of a person's going between to gather them ; four feet is not too much for some kinds. Whatever you sow, consider beforehand what the size and

habit of the future crop will be, and fix your distances accordingly.

We next come to the toilsome but indispensable operation of digging. This, as I have told you, of all gardening operations is the most laborious, and until you have practised it a little, the most difficult. There are two, or, I may say, three sorts of digging. The simplest is only to dig the depth that a spade reaches, merely turning the ground over. I ought to tell you that the ground is dug to soften it, to admit the air and rain, and to enable the roots to shoot freely into the soil. Another advantage that we derive from turning over the earth is that we thus bring to the surface, soil which has been partially exhausted, and supply its place by that which has recently been submitted to the influence of the air and light. The operation is so much simpler to perform than to describe, and the process so

much more easily learnt by watching a gardener at work, than from verbal directions, that I shall send you one by one into the garden, when the men are at work, and you will soon acquire the art of handling the spade. Let me only caution you against attempting to move a larger mass of earth than you have strength to lift ; be careful, too, to turn every spade-full completely over, and to break the mass to pieces before you proceed to cut out another.

There are two other kinds of spade-digging besides that which I have just described, but as they are both too laborious for you to attempt at present, I shall only say that they differ from common digging in being twice as deep ; for after the first spade-full is removed, a second is turned up from beneath ; sometimes these spades-full are made to change places, and sometimes they are simply turned over, keeping their places

In using the hoe, your right hand is to be placed loosely on any part of the handle you like ; but the left, which is placed nearer the blade, is the one that forces it into the ground : or it may be used with the handle by your left side instead of the right, in which case your right hand is nearer the blade. The rake and the hoe are used by most gardeners indifferently in either hand ; a change sometimes being made in order to rest a tired arm, and sometimes for the convenience of reaching the plants.

I will now shew you some of the minor operations with which it is necessary that you should be acquainted. This bass-mat, which is made of the bark of the lime-tree, makes the best sort of tie we can get for general use in a garden. Some of these lettuces will be hastened a week by tying up all the leaves close, because the plant will continue growing in the heart,

and as the tie will prevent the outer leaves from giving way, the heart will grow firm and white in a few days. The bast is strengthened a little by being twisted, and yet more by being soaked in the watering-pot. Gather up the leaves of the most forward plants, and pass the matting two or three times round them before you tie it, and they will soon acquire the character I have described. They should be tied close, but not too tight.

Cabbages are sometimes treated in the same way very early in the year, but never after they come regularly into season, because they then readily heart of themselves. I will now shew you planting, or rather transplanting, on a larger scale than you have yet attempted it. This piece of ground will do very nicely for planting out some Savoy plants, and Brussels-sprouts. Having first selected the strongest plants, put in the spike of your line a foot

from the edge of the piece of ground, unwind the line as you cross to the other side, give the line two or three turns round the spindle, and thrust it in so that it may be very tight. Take the dibble in your right hand, having the line between your feet; now thrust in the dibble close to the line, and when it is down twist it half-way round and back, thus preventing the earth from sticking to the dibble; take out the dibble, hold the plant in your left hand, against that side of the hole which is nearest the line; thrust the dibble into the ground an inch from the hole, so as to close the earth against the plant; half-fill the second hole you make by knocking the earth into it, and complete the row in this way, putting a plant in at intervals of two feet. Then move your line two feet down the bed, and proceed in the same way; taking care, however, that instead of putting the plants of the second row

opposite those in the first, you put them half-way, thus :—

1	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.

the third row will thus come opposite the first, and the plants will have more room, and look better than if they were all opposite each other. We will now plant out some cabbage-plants, the rows shall be eighteen inches apart, and the plants in the row only six inches. The reason why they are planted so close is this : cabbage-plants are eatable at any time, but when about half-grown they are excellent as greens. Two out of every three should be pulled at this stage ; the third will then have ample space.

Now observe these seed-beds ; all those small plants that are so crowded are Cabbage, Cauliflower, Kale, Brussels-sprouts, and different kind of winter greens. Wherever the colour

and form of leaf varies a little, there is a different kind of plant ; these all require to be pricked out, as it is called, that is, planted a few inches apart in another bed. Here is a bed four feet wide prepared for the purpose ; you need not use a line, because it does not matter much whether the young plants are an inch one way or the other. What they require is a space of from four to six inches across ; but you see they are within an inch of one another in their seed bed, so that the change must benefit them. Take your smallest dibble and make the holes not more than two or three inches deep, begin to work at the side of the bed, planting one close to the edge, and four more towards the centre, about six inches apart, in a line to cross the bed. This little bit of stick is just six inches long ; don't use it to measure by, but let it lie by you, that your eye may be familiar with the right distance ;

when you have planted half your plants, or rather more on this side, go over to the other and repeat the same operation ; contrive to get in one row near the edge, and three more towards the centre ; these will, in a month or six weeks, be strong and fit to plant out where they are to remain. When you have practised this a little, you will become used to lines and distances, but as these nursery-beds are always kept out of sight, you can make the pricking out a sort of practice ; in the garden, however, where crops are to stand until they are perfected, it would not do to shew any want of order or uniformity. You may water these plants that are close together with a watering pot with the rose on, but when the plants are at some distance apart, you must pour a little into every hole, and this is a good reason why you should leave a hollow close to each plant, when you dibble it in.

It is not easy to give general rules for watering. You can never hurt plants by watering their foliage after sunset; but when you do profess to water them, saturate all the ground with water for some distance round them; vacant spaces between plants require moisture as much as the plants themselves; the roots are then as free to grow one way as another; whereas, if the watering be confined to the roots of the plants, and the surrounding earth be left dry, the water poured at the roots is soon absorbed by the hot dry soil around, and the plant is thirsty again in a few hours. My advice therefore is, water seldom and when the sun is nearly down, but do it thoroughly; you may sprinkle the foliage with advantage every evening; this will have the effect of washing off the dust and cleaning the plant, if it does no other good; for as leaves are the lungs of plants, dust,

soot, and other accumulations on the surface, must be detrimental. Plants growing in pots should be placed where the water can run completely away from them ; it is very wrong to place them in saucers or pans where the water would be retained and the roots consequently be suffered to stand in it ; there are some few plants that will bear this treatment, but the great majority will gradually decline in health very soon, and become worthless. If, as in the case of plants in dwelling-houses, they cannot be watered without something to catch the superfluous moisture, throw away every drop that drains through, until the pan is not even damp ; but as plants are better for having their foliage thoroughly washed, the best plan is to take them out and water them effectually, and, after they have been well drained, to restore them to their places.

DESTRUCTION OF VERMIN.

By vermin, gardeners mean all kinds of living things which prey on, or injure, their crops.

SLUGS and SNAILS are great enemies to every kind of garden-plant, whether flower or vegetable ; they wander in the night to feed, and return at daylight to their haunts ; the shortest and surest direction is, 'rise early, catch them, and kill them.' If you are an early riser, you may cut them off from their day retreats, or you may lay cabbage leaves about the ground, especially on the beds which they frequent. Every morning examine these leaves, and you will find a great many taking refuge beneath ; if they plague you very much, search for their retreat, which you can find by their slimy track, and hunt there for them day by day ;

lime and salt are very annoying to snails and slugs; a pinch of salt kills them, and they will not touch fresh lime; it is a common practice to sprinkle lime over young crops and along the edges of beds, about rows of peas and beans, lettuces and other vegetables, but when it has been on the ground some days, or has been moistened by rain, it loses its strength.

As for CATERPILLARS and APHIDES, a garden syringe or engine, with a cap on the pipe full of very minute holes, will wash away these disagreeable visitors very quickly. You must bring the pipe close to the plant, and pump hard, so as to have considerable force on, and the plant, however badly infested, will soon be cleared without receiving any injury. Every time that you use the syringe or garden engine, you must immediately rake the earth under the trees, and kill the insects you have dislodged, or

many will recover and climb up the stems of the plants.

GRUBS on orchard-trees and Gooseberry and Currant-bushes, will sometimes be sufficiently numerous to spoil a crop; but, if a bonfire be made with dry sticks and weeds on the windward side of the orchard, so that the smoke may blow among the trees, you will destroy thousands; for the grubs have such an objection to smoke, that very little of it makes them roll themselves up and fall off; they must be swept up afterwards.

WASPS destroy a good deal of fruit, but every pair of wasps killed in spring saves the trouble and annoyance of a swarm in autumn; it is necessary, however, to be very careful in any attempt upon a wasp, for its sting is painful and lasting. In case of being stung, get the blue bag from the laundry, and rub it well into the wound as

soon as possible. Later in the season, it is customary to hang vessels of beer, or water and sugar in the fruit-trees, to entice them to drown themselves.

BUTTERFLIES and MOTHS, however pretty, are the worst enemies one can have in a garden ; a single insect of this kind may deposit eggs enough to overrun a tree with caterpillars, therefore they should be destroyed at any cost of trouble. The only moth that you must spare, is the common black and red one ; the grubs of this feed exclusively on groundsel, and are therefore a valuable ally of the gardener.

EARWIGS are very destructive insects ; their favourite food is the petals of roses, pinks, dahlias and other flowers. They may be caught by driving stakes into the ground, and placing on each an inverted flower pot ; the earwigs will climb up and take refuge under it, when they may be taken out and

killed. Clean bowls of tobacco-pipes placed in like manner on the tops of smaller sticks are very good traps; or very deep holes may be made in the ground with a crow-bar, into these they will fall, and may be destroyed by boiling water.

TOADS are among the best friends the gardener has; for they live exclusively on the most destructive kinds of vermin. Unsightly therefore though they may be, they should on all accounts be encouraged; they should never be touched nor molested in any way; on the contrary, places of shelter should be made for them, to which they may retire from the burning heat of the sun. If you have none in your garden, it will be quite worth your while to search for them in your walks and bring them home, taking care to handle them tenderly, for although they have neither the will nor the power to injure you, a very

little rough treatment will injure them ; no cucumber or melon frame should be without one or two.

You see already that there are plenty of things always waiting to be done in a garden besides the more important operations of preparing the soil, sowing, planting, &c. Many more will occur to you in the course of practice ; walk round your garden at any season, and you will find something which requires your attention, and when you have left off work, and walked round once more, you will be sure to find enough to occupy you on your next visit ; for instance, there is hardly a fine day in the year, that you may not plant out cabbages, if you have any in the nursery or seed beds. Radishes can be produced almost at all seasons, by sowing, watering, and if in winter, protecting from frost by litter ; the ground should never be idle, it should be

dug and left rough rather than be empty, for it derives no benefit from the air and rain while it is hard on the surface.

It may be well for me, perhaps, to touch on one point which is sometimes important, and the knowledge of which will be always useful. There are certain plants not often cultivated in gardens, but which will intrude sometimes, and which are poisonous, or at least noxious weeds ; you must become acquainted with these, and I will mention the chief, that you may be careful in avoiding them.

The principal are, *Bryony*, a climbing plant with red berries, root tuberous and poisonous ; *Fool's-parsley*, sometimes mistaken for parsley ; *Butter-cups*, well known to all children ; *Meadow Narcissus*, bulbs poisonous, like those of all the garden Narcissuses ; *Henbane*, distinguished by its clammy leaves and large

cream-coloured flowers with purple eyes ; *Monkshood* ; *Foxglove* ; *Deadly Nightshade*, remarkable for its large, drooping, bell-shaped flowers of a livid purple hue ; *Nightshade* or *Bittersweet*, a straggling plant, with dark purple and yellow flowers, shaped like those of the Potato ; *Hemlock*, easily detected by its umbels of white flowers, finely cut leaves, and hollow stems, spotted all over with red ; *Thorn-apple* or *Stramonium* ; *Spurge*, distinguished by its milky, acrid juice ; *Lords and Ladies*, or *Cuckoo-pint* ; *Hellebore* ; and all the kinds of Toad-stools, some of which have been mistaken for Champignons and Mushrooms, and been fatal to many. The *Foxglove*, both the purple and white varieties, may be introduced with advantage into a large garden, especially at the back of a border in a shrubbery, but this is the only one.

I shall now give you a table of gardening operations which you will do well to study with attention. You will learn from it what are the best seasons for sowing a variety of vegetables, as well as a few plain directions for their treatment. Many of them may be sown at other seasons besides, by persons who have at their command extraordinary means for forcing and protecting them ; but I cannot recommend you to resort to any of these, until you are thoroughly acquainted with the simpler methods of cultivation.

You will discover the use of my directions by-and-by, when gardening has ceased to be a *mere* amusement, and you find how much better and cheaper too vegetables are when grown in your own garden, than when purchased in the market. And even if you should have no garden of your own you will find it a great privilege to be able, when visit-

ing your poor neighbours, to give them hints for turning their little plots of ground to the best advantage. It is impossible to overrate the value of sound practical knowledge of this kind ; for my own part I do not know how you can confer a greater benefit on a poor labourer than by shewing him how he may, with little or no expense, rear enough vegetables in his little garden to be able to add something to his daily meal every day in the year.

JANUARY.—*Sow* Radishes, if you can protect them with litter by night, and during frost by day as well. *Earth up* the Cabbage tribe and Celery on fine days. *Transplant* cabbages, if you have plants and vacant ground to receive them ; collect manures and soils in bad weather.

FEBRUARY.—*Sow* Radish again if necessary, a little Cabbage-seed, and Mustard and Cress. *Transplant* Cabbage, if you have any plants left.

MARCH.—*Sow* Broad Beans and Peas, Lettuce and Radishes, Beet, Carrots, Parsnips, and Onions. *Plant* Potatoes, Jerusalem Artichokes, Herbs, Shallots, and Garlic. *Transplant* Cabbage. *Earth up* Celery and crops generally.

APRIL.—*Sow* successions of Peas and Beans, Cabbage, Pickling Cabbage, Brussels Sprouts, Lettuce, Savoys, Scotch Kale, Carrots, Parsnips, Beet (if not done before), Onions, Spinach, Celery, Cauliflower. *Plant* Potatoes. *Transplant* Lettuces, Cabbage. *Thin* Onions and Spinach as soon as they are large enough. *Earth up* Peas, Beans, Celery, Cabbages, and other crops requiring it.

MAY.—*Sow* Dwarf Beans, Scarlet Runners, Peas and Beans, all the kinds of Brocoli, Turnips, Carrots, Lettuces, Herbs. *Plant* Potatoes (full crop). *Transplant* the Cabbage tribe. *Prick out* Celery and other seedlings from their beds

to strengthen. Weed and thin the coming crops with the hoe.

JUNE.—*Sow* Vegetable Marrow, Turnips (full crop), Endive. *Plant* late Potatoes. *Transplant* all the Cabbage tribe, Celery in trenches well dunged. *Earth up* Potatoes and all the crops requiring it. *Stick* Peas and Scarlet Runners, and look well to weeding.

JULY.—*Sow* Brocoli in variety, Dwarf Kidney Beans for succession, Endive, Salads of all kinds, Cabbage, Turnips. *Transplant* the varieties of Cabbage, Brocoli, Savoys, Brussels Sprouts, and Celery. *Prick out* all young seedlings. If any Onions and Shallots have done growing, pull them up, and dry them on their beds before storing them away. *Earth up* Potatoes and other forward crops, and gather Herbs for drying.

AUGUST.—*Sow* Spinach, Cabbage, Onions, Radish, Lettuce, and Cauliflower. *Transplant*

all the Cabbage tribe—Brocoli, Cabbages, Pickling Cabbages, Savoys, and Brussels Sprouts, Celery, Endive, Lettuces. *Earth up* crops in general ; and take up Onions for storing.

SEPTEMBER.—*Sow* Salads for use, and Winter Spinach. *Transplant* Winter Greens of all sorts, Lettuce, Endive. *Pull up* Onions, if any remain not yet stored.

OCTOBER.—*Sow* Cabbage of all sorts. *Dig up* Potatoes, Carrots, Parsnips, Beet, &c., and store them in sand to protect them from frost. *Earth up* any thing that wants it. *Hoe out* Winter Spinach to make room for other crops.

NOVEMBER.—Vacant ground may be filled with plants of the Cabbage tribe ; Celery and other crops, may be earthed up ; but with these exceptions there is little to do in the garden. As for Beans and Peas, they are a precarious crop if sown at this season, and give more trouble than profit.

DECEMBER.—When the weather permits, dig, dung, and trench ; during frost collect the soils and manures likely to be useful ; but I do not recommend much winter gardening. Keep the crops of winter Greens neat and clean, and well *earthed up* ; Celery too must be *earthed* as fast as it grows.

Works on gardening generally contain many directions which I have intentionally omitted. I am quite ready to allow that the various plans recommended may be very useful to those who have large gardens, and are willing to incur great expense in order to procure crops of vegetables out of season. I would recommend you however not to attempt these unnatural productions, for you may employ your ground much more profitably. You should especially avoid autumn sowings of Beans and Peas ; for, although you may, by taking ordinary precaution, protect them during the

winter, they rarely stand the spring frosts, which attack them after they have put on, if I may use the expression, their warm weather clothing, and in most cases prove fatal. They bear very well long winter frosts, but are too delicate to stand the sudden contrasts of heat and cold, which are so frequent in spring.

A monthly table is scarcely needed for the flower-garden; all your seeds may be sown in March and April; weeding and watering go on all the year. The time for planting out flowers is when they have from four to six leaves. All the spring bulbs should be planted by November. I shall distribute some bulbs at the proper season, with instructions how to manage them: till then, keep your gardens clean, remove all decaying flowers from the borders, take up all the annual plants that have done flowering, frequently rake the surface of the bed to make it clean and neat, for nothing looks worse than a disorderly

flower-bed. Such of your perennials as have not been planted out ought to be attended to; any of you who intend to exchange plants should lose no time: and recollect, as soon as the frost turns the leaves of your dahlias black take up the roots and preserve them in some place which is at the same time dry and cool, and yet secure from frost.

If any of you are saving seed take care to gather the pods before they open and shed their contents, for this takes place very soon after they are ripe. Although I have supplied you with certain seeds and flowers that were necessary to give you a fair start, I shall not interfere with any additions your friends may like to make, nor shall I control your further choice of plants; but whatever plants you grow, bestow on them all necessary care; if they disappoint you, take them up and throw them away, for I would rather see your garden half filled with well-grown plants

than crowded with sickly specimens struggling to keep themselves alive.

In November, when you have cleared off a good many of your annuals, you will have vacancies for a few bulbs, such as Snowdrops, Hyacinths, Crocuses, Jonquils, and Narcissus. Let these be planted in small patches where you think they will least interfere with your future plans, fork up all the ground except where your perennials stand; for they must not be disturbed. The Crocuses and Snowdrops should be planted close to the edge which is now occupied by the Polyanthus. The Hyacinths, Jonquils, and Narcissus must be planted further back, and take care to mark their places with labels, that you may not attempt to plant anything else there before they come up, and so injure their roots. All kinds of spring flower-bulbs may be planted then, but those which I have mentioned are the best adapted to your small gardens.

THE CROCUS.



This is the gayest of all the spring flowers, affording a great variety of brilliant colours, such as pale gold, deep orange, dark and light purple, pure white, and many that are curiously striped. They are annually imported in large numbers from Holland. They should be planted three inches deep in the ground, and will come up very early in the spring. Each bulb throws up several flowers shaped

somewhat like a tulip, but smaller, and destitute of a stem ; that which appears to be a stem is the tube of a very long corolla ; every root produces two or three new ones in a season, and therefore you soon get a good stock ; after the flowering is over, the foliage grows long and grassy, and we may say untidy, hence many persons cut it off close when it has grown the full length, but this weakens the root ; the plants may be left in the ground for three years.

THE HYACINTH.

One of the most beautiful of the bulbous plants. It has highly fragrant flowers on a spike, as it is called, forming a pyramid or column of bloom, which is composed of twenty, or thirty, or more individual flowers, each on a separate footstalk. The best sorts have so



many flowers that they touch each other all the way up, and the column of bloom grows smaller and smaller until at top there is only a single flower, though at bottom there may be six or eight round the stem; the colours are all the shades of red and of blue, buff, yellow, pure white, and many kinds are variously marked with pink or blue eyes on

a white ground ; some flowers are double and very large, and of these there are fewer on a stem. The bulbs should be placed three inches under ground, and when they appear above ground they should be preserved against the effects of severe frost by a covering of litter or an inverted flower-pot ; but they are by no means tender.

THE SNOWDROP

Is a favourite flower in every garden, appearing at such a season that it is hard to say whether it belongs to the past or the coming year, and suggesting, with its pure white, drooping flowers, which brave the most intense frost, the notion of the humble but fearless confidence of innocency. The Snowdrop is to be found apparently wild in many parts of



THE SNOWDROP.

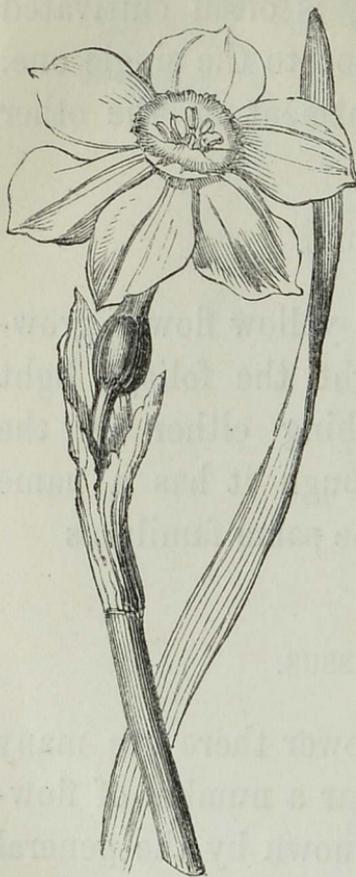
England ; a double variety is often cultivated in gardens, but it is inferior to the single one. It requires the same treatment as the other bulbs.

THE JONQUIL.

This is a sweet-scented yellow flower, growing a foot high, very bright, the foliage light and elegant, and flourishing either in the ground or in a pot. Though it has a name of its own, it belongs to the same family as

THE NARCISSUS.

Of this pretty spring flower there are many varieties ; those which bear a number of flowers on a single stem are known by the general name of *Polyanthus Narcissus*, and are best suited to your gardens, being fragrant and showy. One of those which I have given you has bright



yellow flowers, the other white with yellow cups. They are large bulbs, and require to be planted so that the top may be three inches underground. None of these bulbs that I have mentioned require any care after planting till they come up, and then only to be kept clear of weeds; they are not injured by the severest cold; but if the expanded flowers are touched by frost they will not last long.

There are many other bulbs which you may plant with advantage, if you can procure them;

but a stock of them would be costly ; they are the Spanish, Persian, and English, Iris, Tulips early and late, Lilies and Gladioluses in great variety. I will endeavour to procure for you a few white and orange Lilies, because they are very showy, and will stand for years without wanting to be removed.

Small as your garden is, you will never, except in the depth of winter, be without at least a few flowers, if you bestow on your plants ordinary care, and attend to the directions which I have given you. But if you forget to sow your seeds at the right time, or suffer the plants to grow too large before you transplant them, or neglect to water them in very dry weather (especially soon after removal), or allow vermin to eat away their leaves, you must not lay the blame either on the seed or the soil. You will only be suffering for your carelessness. Negligence

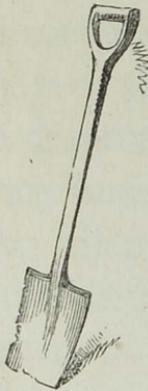
in gardening is sure to be followed by disappointment; for although you may gain experience against another year, you cannot possibly retrieve an error. When you have learnt something of the gardener's art by cultivating your present assortment, I shall provide you with fresh subjects for your skill and industry. I do not expect that you will all succeed equally well; for though the soil of all your gardens is alike, and I have given you all the same seeds, I am quite prepared to find every one's garden an index of his character. The dilatory will put off essential operations until they are too late. The thoughtless will forget what ought most to be remembered. The careless will not think it worth while to attend to all of my directions. The impatient will pull up his plants to see if they are growing. The fickle will destroy a growing crop to make room for a new favourite. While

those whose character is the opposite of all these, will, when Willy comes to pay us a visit, keep very close to his heels, waiting to hear him say, "Whose neat garden is this?" and to answer by an arch smile, "Oh, that is mine!"



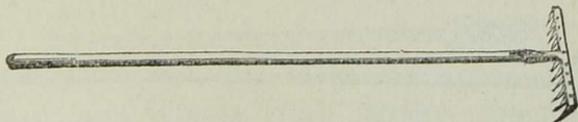
GARDENING TOOLS.

THE SPADE. This is used to turn up the ground. It is held in the right hand by the loop of the handle, with the blade resting on the spot



where it is to be thrust in ; the left foot is put on the left shoulder of the blade, which is pressed into the soil by throwing the whole weight of the body, if needful, on the left foot ; by bending the handle back with the right hand, the earth is forced up by the leverage, and by putting the left hand as low down towards the blade as is necessary, the spade-full of earth thus released is lifted and thrown out, or turned over, as may be wanted.

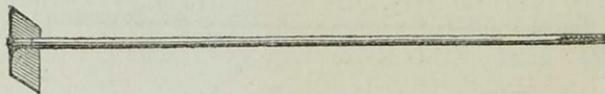
THE RAKE. This is an instrument for levelling the top of the soil after digging. It is held in both hands, and alternately pushed forward and pulled backward. It naturally draws together all stones and lumps that are too large to go through the teeth. The lumps, however, are bruised and broken with the back of the rake. The stones are collected into heaps, or drawn off the side of the beds into the paths, to be taken away. The rake is also used after hoeing, to rake off the weeds and stones, and to smooth the surface. It is likewise used to rake seeds into the ground after sowing.



The teeth of the rake make little furrows, into which the seeds fall, and these are again filled up by the rake going over the ground back-

wards and forwards, till they are all buried under the surface. There are different sizes.

THE HOE. This is an instrument with a flat iron blade, across the end of a handle similar to that of the rake. It is held in both hands, and is used to make drills or furrows to sow seed in rows. As a weeding implement, it is very useful, either tearing up the weeds entire, or chopping off the leaves from the roots. Dry, hot, weather, after a shower, is the best for weeding with a hoe, the ground being then easily penetrated, and the weeds soon withering. It is also used to stir the surface of the soil, and to draw earth up to the



stems of the plants. Another purpose to which the smaller one is applied is to the thinning out, and weeding of Turnips, Carrots, Spinach, Parsnips, Onions, and other crops.

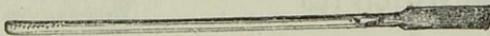
THE DUTCH HOE is used for weeding; it is thrust forward with the blade a little beneath the ground, and weeds are thus separated from their roots by a slight effort. It can be used at a greater distance than the common hoe, and requires less exertion.



TROWEL. This is useful for transplanting seedlings, and removing other small plants from one part of the garden to another.

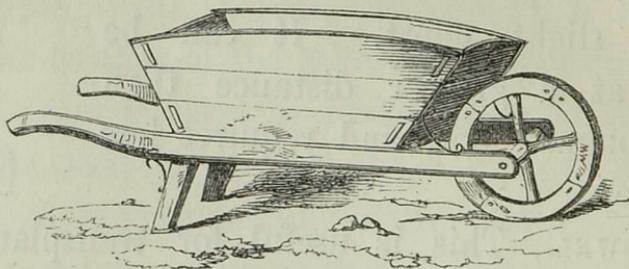


A SPUD is something like a chisel fixed at the end of a long handle; it is used to cut up



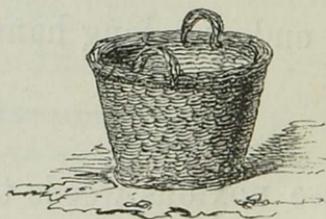
those noxious weeds that strike deep into the ground, as Dandelions. It is an instrument that might be always carried in the hand; for in most gardens weeds growing close to

plants, are occasionally overlooked, and a thrust with this will cut them off as low down as is necessary.



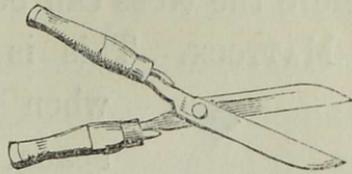
BOX-BARROW. To wheel rubbish, manure, or soil, from one place to another.

WEED-BASKET; this is used not only for the purpose which its name denotes, but for carrying fruit, vegetables, &c.

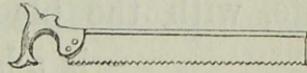


GARDEN SHEARS are employed in the trimming of hedges. To be perfect, a hedge

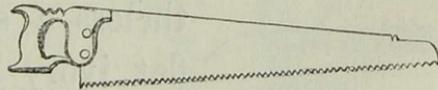
should be kept at the same height throughout, narrow, so as not to occupy much space, and so compact from top to bottom as to be impenetrable. All these results are produced by the frequent use of the shears.



SAW. To prune off the limbs of trees that are too large for the pruning-knife, and not stout enough to bear a coarser hand-saw. It has a thin blade, which is kept in its position by a thick back, and the teeth are very fine.

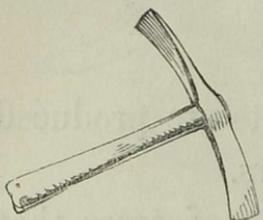


A common **CARPENTER'S HAND-SAW.** It is used for sawing off branches which are too large to be managed by the fine saw. In orchards that have been neglected, it is indispensable, for in such cases



it is often necessary to remove large limbs before the trees can be brought into shape.

MATTOCK. This is to loosen the ground when too hard to admit the spade. It is like a strongly-made pickaxe, but the head is not so wide. It is used also for cutting through roots.



PRUNING KNIFE. This is simply a strong knife, with the blade inclining inwards. It is adapted for cutting off such branches as are in the way. This is an implement in universal use among gardeners, and is always carried in the pocket.

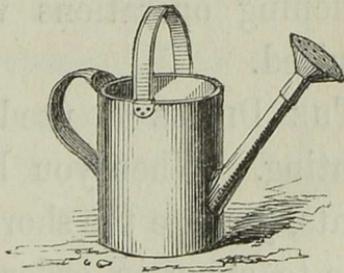


BUDDING KNIFE. This is a smaller but nevertheless a strong knife, with a flat ivory handle, thin at the bottom. The thin part of the handle is used for lifting up the bark of a tree after the blade has cut through it. The operation of budding

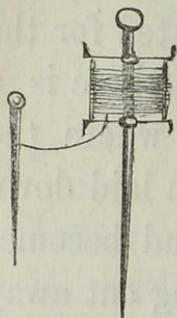


is performed by shaving off a piece of the bark of a tree with a leaf upon it. A cross incision is then made in the bark of another tree, and the strange bud introduced between the wood and the bark, which are carefully separated for the purpose. At the base of the leaf there is a bud, which is applied to the part where the bark is cross cut. The bark is then laid down over the inserted piece, and the bud becomes the future tree, all other shoots being cut away as they appear.

A WATERING-POT for the garden should be furnished with two or three moveable tops, with holes of various sizes, proportionate to the character of the crop to be watered; for trees and shrubs the open spout is used.



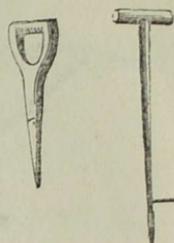
GARDEN LINE. The use of this is to make straight lines. The spike is thrust firmly into the ground, and enough of the line is unwound to reach to the place where the



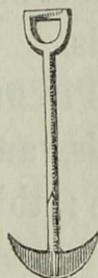
other end of the line is to be fixed. The string should be twisted two or three times round the spike of the reel to prevent it from unreeling, and then drawn tight. It is used in drawing drills, as well as in marking straight lines for planting; in short it serves as a guide in all gardening operations when a straight line is required.

THE DIBBLE is used for making holes for planting. When you have to plant out small plants, you use the short dibble, because, as you have to stoop in order to set the plant, you may as well make the hole at the same time; but if it is required for potatoes, or anything

that is to be dropped into the hole by another person following you, the long one, which has a rest for the foot is far better, because you have no occasion to stoop, and can thus get over the ground quickly. Blunt dibbles are used in the planting of potatoes, but they should be made with tapering points for rooted plants.

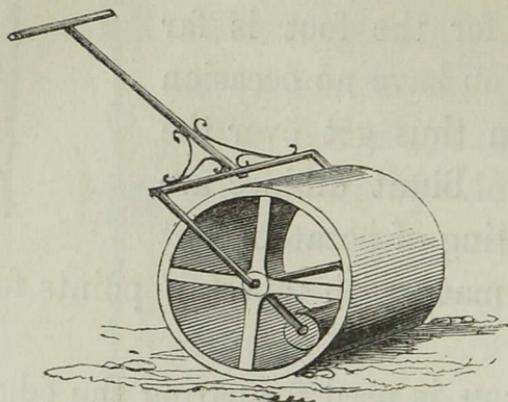


THE EDGING-IRON is used for paring the edge of turf, and preventing it from extending over the paths. It is shaped like a cheese-knife, and has a long handle like that of the spade. This tool is exceedingly well adapted to the purpose for which it is intended, as it penetrates the turf quite through to the roots, and may be used for making either a straight or a curved edge.



GARDEN ROLLER. This is of the greatest

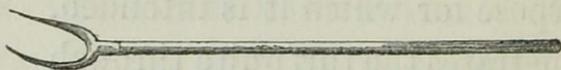
service in hardening gravel walks after rain and frost, also



to roll the soil after seed sowing. Rollers are now made of iron, a material which has completely superseded both wood

and stone, which were formerly common materials.

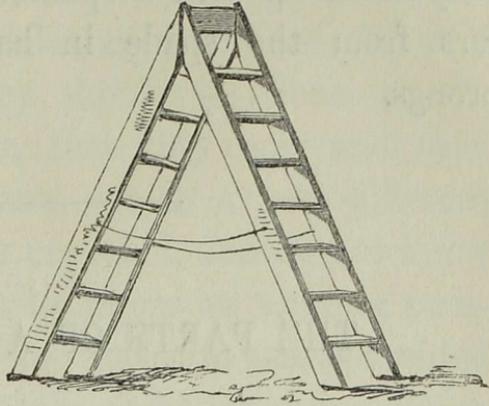
PITCHFORK. For the purpose of making hot beds, and preparing the manure previous to use: this is held in both hands, and being



thrust into the manure as far as it will go, a considerable weight of it can be taken up with the fork, either to be thrown about on

the spot, or to be carried with the fork upright, to any other part of the ground.

FRUIT GATHERER. Steps of this description are infinitely superior to ladders, because they stand independently of the tree, and two persons can work at once if necessary. They are also better for pruning, or for any other operation in which it is requisite to ascend to any height.



POTATO FORK. This is useful in digging up the crop of potatoes when they are ripe. It is not so likely to damage the potatoes, if it happens to be thrust in among stragglers, as a



spade would be; besides, it penetrates the ground more easily, and turns up the crop better, exposing the potatoes more than if they came up with a spadeful of soil. It differs from the spade in having three stout prongs.

THE PARTS OF A PLANT.

I SHALL now enter upon another division of my subject, not relating entirely to the practice of Gardening, but nevertheless very important.

I told you the other day that I should wish you to be able to give a reason for every gardening operation that you perform. There are many gardeners, I fear, who, although they

work very industriously, and keep their gardens in excellent order, often fall into great errors from not having formed the habit of thinking why it is desirable that certain things should be done in a particular way, or even why it is necessary that they should be done at all. The consequence is, that they now and then find their crops turn out in a very different way from what they expected, and do not know how to set matters to rights on another occasion. Now I wish you never to rest contented with knowing that it is right for you to do so and so, but to find out the reason for the very simplest operation. This you will not be able to do without being first acquainted, to a certain extent, with the science of botany. I do not mean by botany merely the being able to call plants by very long and very hard names, of which you cannot yet know the meaning ; but I think it highly desirable that you should be

able to carry in your minds a correct general idea of the principal parts of a plant, and of the use of each part. Willy's Table of Maxims will give you a good deal of information on this point, for you will find that every one of them contains some practical direction founded on what he has learnt, either from reading or personal observation, to be a fact. All the botany that I wish you to study at present is a collection of such facts, and I think you will be the better able to recollect them if I present them to you in a connected form, even although you should discover some of them again among the maxims.

I will then describe the principal parts of a plant, and the most remarkable functions of each.

THE SEED.

If you remove the shell and inner skin from a hazel-nut or filbert (fig. 1), you will find that the kernel easily separates into two pieces throughout nearly its whole extent, being held together at the smaller end by a small body, which

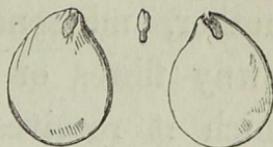


FIG. 1.

tapers towards each of its extremities. This little body is called the *germ*, and may be compared to a bud containing the rudiments of a tree like that from which the nut was taken. The two larger portions are termed the *seed-lobes*, and contain enough nourishment to support the young plant until it has formed roots and leaves, and is able to provide for itself. The kernel, or seed, has no

tendency in itself to alter its form, if kept dry and exposed to light ; but if buried a few inches beneath the surface of damp earth, it swells and bursts its coverings ; the seed-lobes are changed into green fleshy leaves, and between them the germ lengthens upwards and downwards, expanding first one *leaf* and then another, and sending out from its lower end downy fibres or *roots*. All the nourishment which it receives at present, is derived from the enlarged seed-lobes, called *seed-leaves* in this stage of their growth ; consequently, if they are destroyed the young plant perishes likewise.

The true leaves, which shoot up between the seed-leaves, are generally different in form from the seed-leaves, as may be observed in the young cabbage-plant (fig. 2). They usually consist of two parts (fig. 3) ; the *leaf-stalk*, which is a collection of tubes enclosed in a

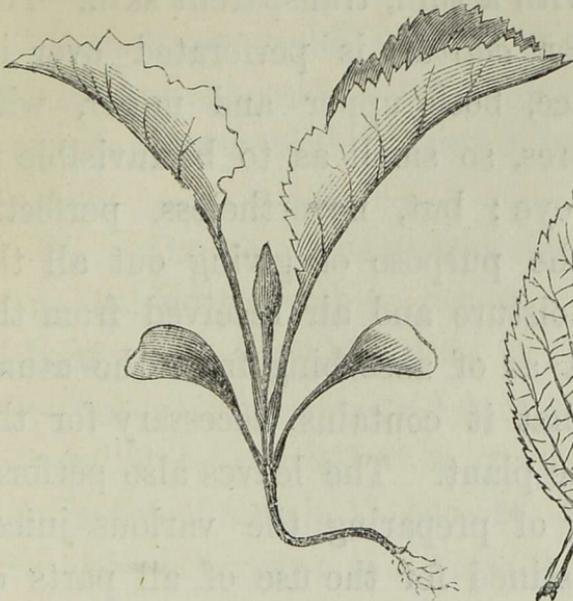


Fig. 2.

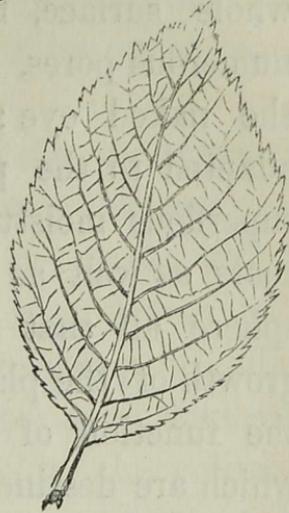


Fig. 3.

thin rind, and destined to convey juices and air upwards and downwards between the leaf and the stem. The flat part of the leaf is composed of a network of tubes like those of the leaf-stalk, the interstices being filled up with a number of minute cells, which contain a green juice, and the whole is covered, above

and below, with a thin, transparent skin. This thin skin, or *cuticle*, is perforated over its whole surface, both upper and under, with numerous pores, so small as to be invisible to the naked eye; but, nevertheless, perfectly adapted to the purpose of giving out all the superfluous moisture and air received from the roots, as well as of absorbing from the atmosphere all that it contains necessary for the growth of the plant. The leaves also perform the function of preparing the various juices which are destined for the use of all parts of the plant; they are, consequently, as important as the roots.



FIG. 4.

At the base of every leaf is a bud, which contains either leaves precisely similar to those described, or rudiments of flowers (fig. 4). Generally, only a portion of these come to per-

fection, most plants having, as it were, a reserve of these useful organs, to be called into life if required, and in trees they are carefully protected from cold in winter by scales, wool, or gum.

When the plant has gained size and strength, it is enabled to produce a new organ yet more delicate and complex than the leaf; this is the *flower* or *blossom*. A perfect flower in its natural state consists of a green cup or *calyx*, the leaves of which, if there be more than one, are called *sepals*; the *corolla*, the coloured leaves of which are called *chives* or *petals*; *stamens*, and *pistils*. The beauty of the flower mainly depends on the perfection of the corolla; the production of seed depends exclusively on the presence of stamens and pistils. The art of the florist consists in increasing the number, size, regularity, and bright tints of the petals.

In the rose (fig. 5) the *calyx* consists of five

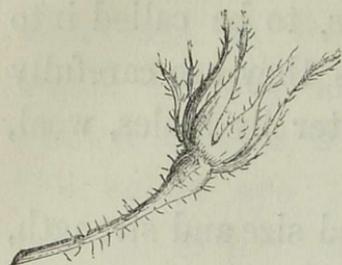


Fig. 5.



Fig. 6.

after the petals have fallen off; the primrose has a calyx of one leaf, divided into five *segments* (fig. 6); the tulip has no calyx.

The *corolla* of the poppy consists of five *petals* (7); that of the primrose has but one,

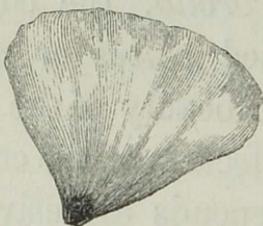


Fig. 7.

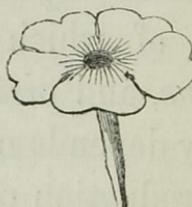


Fig. 8.

which is divided into five *segments* (fig. 8); and some plants have no corolla, but these are rarely cultivated by gardeners.

A *stamen* consists of three parts; the *filament*, which is a thread of tubes for conveying nourishment to the other parts; the *anther*, a case usually of two cells, which, when ripe, burst and shed a quantity of fine powder, called *pollen* or *farina* (fig. 9). The honeysuckle contains five such stamens; the poppy a countless number.



FIG. 9.

The place of the *pistil*, or, if there be more than one of the *pistils*, is in the very centre of the flower. Its summit is called the *stigma*, and its lower part the *germen*, and these are generally separated from one another by a third part, called the *style*. In the primrose, the stigma is globular (fig. 10) and the style long; in the poppy the stigma is radiated, and there is no style (fig. 11). The germen contains the rudiments of the *seed*, and when enlarged is usually called the *seed-vessel*



FIG. 10.

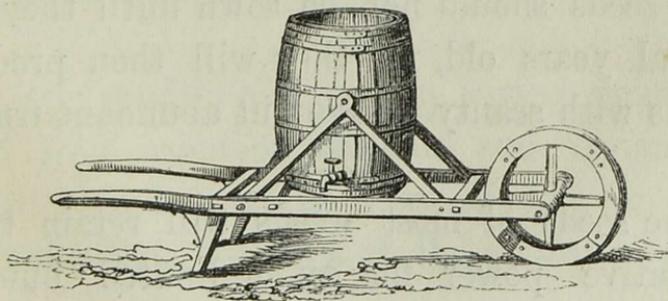


FIG. 11.

or *fruit*. No flower can produce perfect fruit unless some portion of pollen fall on the stigma ; few double flowers, therefore, that is to say, flowers in which the stamens and pistils have been changed by excessive cultivation into petals, produce seeds. In the case of dahlias, China-asters, &c., there would seem to be an exception to this law ; but it is only an apparent one ; for what is called a single dahlia or a single China-aster, is not in reality one flower, but an assemblage of small flowers or *florets*, of which the yellow central ones are furnished with stamens and pistils, and the spreading, petal-like ones are furnished with pistils only. Consequently, when the central florets are changed into spreading florets, they still continue to have pistils, and are capable of producing seeds, provided that pollen, either from the same flower, or from another flower of the same kind falls on them.

But in the case of a double stock or wall-flower both stamens and pistils are wanting ; these flowers, therefore, are always barren.

This is as much as is necessary for you to know at present about the structure of a plant, but if you desire to become a good gardener, it will be necessary for you to make the science of botany your study ; and you will find that the two pursuits are not, as some people suppose, opposed to each other, but, on the contrary, that every new discovery in either throws light on the sister science. You will see that this must be the case from perusing Willy's Maxims.



MAXIMS.

Grow nothing carelessly ; whatever is worth growing at all, is worth growing well.

Many kinds of garden-seeds lose their vegetative power if kept over the first year ; be sure, therefore, to sow none but new seeds.

Melons, cucumbers, and other plants of the gourd tribe, form an exception to this rule ; their seeds should not be sown until they are several years old, for they will then produce plants with scanty foliage but abundant fruit.

The seeds of most weeds will retain their vegetative power for an unlimited number

of years; take care, therefore, that all weeds are burnt, or at all events that they are not thrown on piles, from which they are liable to be brought back to the garden.

The first leaves which appear in the seed bed (called the seed-leaves) are the sole nourishment of the young plant until it has acquired roots; therefore, if they be destroyed or seriously injured, the young plant must die.

Seeds will not vegetate unless within the influence of moisture, air, and heat; be careful, therefore, not to sow your seeds too deep, or they will never come up.

Little good is obtained by saving your own seed from common annuals and vegetables; your ground is worth more to you for other purposes than the cost of the quantity of seed

which you will require ; besides which, you will have a better crop from seed raised in a different soil.

The roots of very young plants are not strong enough to bear removal ; the best time for transplanting seedlings, is when they have made from four to six proper leaves ; for by this time the roots will be able to perform their proper functions.

Plants when exposed to the action of light transmit moisture copiously through their leaves ; transplanted seedlings, therefore, and cuttings, should be shaded from the sun until their roots are strong enough to supply moisture as rapidly as it is thrown off.

Roots require that air should be admitted to them ; the surface of a clayey soil should

therefore be disturbed as often as it begins to cake.

Let unoccupied ground be left in as rough a state as possible during the winter, in order that a large surface may be exposed to the frost, and the soil become thoroughly loosened.

Frost takes effect more readily on roots that have been dug up than on those which are left in the ground ; therefore, either give your store roots complete protection, or let them stay in the ground.

All plants absorb from the ground different juices ; a constant variation of crops is therefore indispensable.

Leaves absorb and give out moisture, and inhale and exhale air, they are consequently

the most important organs of a plant, and if they are destroyed or injured, the whole plant suffers.

The pores in the leaves of the plants, by which they transmit moisture and air, are exceedingly minute, and liable to be choked by exposure to dust, and especially soot; delicate plants should therefore be placed out of the reach of smoke, and if their leaves become soiled they should be washed.

The branches and leaves of plants rarely touch another while in a growing state; learn from this not to crowd plants too much in your beds; air and light are as necessary to them as earth and water.

The throwing off of its leaves by a newly planted cutting, is a sign that growth has com-

menced ; on the contrary, when leaves wither on the stem, it is a sign that the plant has not strength to perform the natural function of throwing them off.

When shrubs produce an abundance of foliage but no flowers, either move them to a poorer soil, or cut through some of the principal roots.

Dry east winds are injurious, by absorbing moisture from the leaves of plants more rapidly than they are prepared to give it out ; weather of this kind requires to be guarded against more than the severest frost.

If a grass-plot becomes overrun with moss, manure the surface, and the grass will gain strength so as to overcome the intruder.

In all cases of pruning, cut towards you, beginning a little below a bud, but on the opposite side, and ending just above the bud ; by this means the wood will be kept alive by the bud, and no water will be able to settle and rot it.

Leaves shaded from the light do not acquire depth of colour or strength of flavour ; gardeners take advantage of this fact, tying up lettuces and earthing celery, that they may be white and mild.

Light is necessary to flowers, that they may acquire their proper hues ; therefore, when kept in rooms, their place should be as near as possible to the window.

All plants have a season of rest ; discover what season is peculiar to each, and choose that season for transplanting.

Plants are in their most active state of growth while in flower ; avoid transplanting them at this period, for in all probability they will suffer from the check.

On the contrary, choose this period in preference to any other, for taking cuttings, as they are then most active in forming roots.

Plants when in bloom, have all their juices in the most perfect state ; choose, therefore, the period of their beginning to flower for cutting all aromatic and medicinal herbs.

Profuse flowering exhausts the strength of plants ; therefore remove flower buds before they expand from all newly rooted cuttings and sickly plants.

No plants can bear sudden contrasts of temperature; therefore bring nothing direct from a hot-house to the open air; warm weather should be chosen even for bringing out plants from a green-house.

Remove all dead flowers from perennials unless you wish to save seed; the plants will thus be prevented from exhausting themselves.

To procure a succession of roses, prune down to three eyes on all the branches of some trees as soon as the buds begin to expand; defer the same operation with others, until the leaves are expanding; in the former case the three buds will bear early flowers; in the latter they will not begin to expand until the others are in full foliage, and will bloom proportionally later.

By checking the growth of plants, you throw strength into the flowers and fruit ; this is the reason why gardeners nip off the terminal shoots of beans and other such vegetables ; on this principle too, is founded the valuable art of pruning.

Generally speaking, the smaller the quantity of fruit on a tree, the higher the flavour : therefore, thin all fruits in moderation, but avoid excess ; a single gooseberry on a tree or a single bunch of grapes on a vine, no matter how fine it may be, is a disgrace to good gardening.

Fruit should always be gathered in dry weather, and carefully laid in baskets, not dropped in ; the slightest bruise will cause fruit to decay.

All bulbs and tubers should be placed in the ground before they begin to shoot; if suffered to form leaves and roots in the air, they waste strength.

Never remove the leaves from bulbs after flowering, until they are quite dead; as long as the leaves retain life, they are employed in preparing nourishment and transmitting it to the roots.

Vegetables that are valued for their juiciness and mild flavour, should be grown quickly; the reverse should be the case when a strong flavour is required.

Though rapid growth is desirable in succulent vegetables, this is not the case with most flowering shrubs, which form bushy and therefore handsomer plants when grown slowly.

Few plants thrive in stagnant water ; potted plants should therefore always have a thorough drainage of broken pots or brick, and should not be allowed to stand in damp saucers ; they require but little water during the winter ; but when they begin to grow they should be liberally supplied.

Plants in pots are more liable to be injured by frost than plants in the ground which are exposed to the same temperature, because the fibres of their roots cling to the sides of the pots and are soon affected ; if they are kept out of doors during the winter, bury the pots in the ground.

All garden hedges should be kept clear of weeds, or when the latter run to seed, they will supply your garden with a stock against the next season.

Finally, whether you sow seeds, water the young plants, or reap the produce, remember that you are dependent for all on God's blessing; with all your care and industry, you will find yourselves sometimes disappointed when least you expect it. He has been pleased to ordain that certain results shall ordinarily follow from certain labours in the tillage of the ground, reserving to Himself the power of setting your industry at naught, in order to remind you that "man doth not live by bread alone, but by every word that proceedeth out of God," whether that word command the earth to bring forth abundantly, or whether it "send forth the cankerworm to eat what the caterpillar has left.

THE END.

