

THE FLOWER GARDEN.

The Cultivation of Roses.

READ BEFORE THE GERMANTOWN (PA.) HORTICULTURAL SOCIETY, BY CHARLES H. MILLER.

The Soil.

The best of all soils is a strong loam. If rich, so much the better; if not, it should be enriched with good rotten manure. It must be understood that to have roses in perfection, they must be planted in rich, stiff soil, well drained and manured. I do not mean wet clayey ground; for in that they will not thrive. We need an open, airy situation, and loamy soil for such as the hybrid perpetuals and other strong-growing kinds. On the other hand, a protected situation and a somewhat lighter material for Teas, Bourbons, and Chinas. But, as all our gardens are not thus favorably circumstanced in regard to soil and situation, and cannot be made to suit the roses, the roses must be brought to suit the gardens. And, as the varieties are so numerous and their habits so different, there should be very little difficulty in that respect.

Hybrid Perpetuals

Of all the hardy kinds this group is the most desirable and deservedly the most popular. They thrive under common treatment, and are generally suited alike for all soils and situations. Whatever the rose-grower fancies for a collection of other kinds, he must grow these in quantity, and rely principally upon them for display. They are the best for all the various purposes to which roses are applied in garden and lawn decoration.

In this group are the best kinds for bleak hills and for confined city yards and gardens, or soils of questionable character. Of the strong and more robust kinds of this extensive section we find many varieties well adapted, and indeed, the best for training to pillars and trellises, or for growing in pots, for forming rich masses in the flower garden, or for forcing in pots, and also for exhibition.

Planting.

Roses may be planted either in spring or in autumn. If in the autumn, they require some protection. Plant as early as possible, that the roots may take some hold on the soil before winter sets in. The early part of November is a good time to plant any of the hardy kinds, and the best protection is rotten manure heaped around the stem of the plant to the height of from six to ten inches. To prevent the radiation of heat from the ground, it is desirable to cover the whole surface of the bed with the same material. Dry leaves heaped among or around the plants and kept down by branches of cedar or pine boughs, is also one of the best modes of protection.

When the operation of planting has been deferred until spring, they may be safely put out as late as the early part of April; and if the plants have been kept in pots all winter, they may be planted any time during the spring and summer, providing it is done during suitable weather. A cloudy day is the most desirable.

When the roses are ordered from a nursery, everything should be in readiness for their proper planting as soon as they come to hand. If they have been some time out of the ground, the planter should have a bucket of water, in which the roots should be dipped and a little dry earth thrown over or shaken among them. Then plant immediately. Choose a dry day, if possible, and the drier the ground the better. Be careful to press the soil firmly around the roots. This is also very important.

The Care of the Plants.

If all these things are well done, the roses will flourish for years without change of soil, with the additional top-dressing of manure once a year. It, however, sometimes happens that, with all the care bestowed on your favorites, some of them will become unheathy, when the only remedy is to take them up in the fall or spring, shake all the soil from their roots, and replant in fresh earth, after examining them and cutting away any decayed roots and branches.

Early in spring, just as the plants begin to bud out, remove the top soil around each plant and lay a little manure as a top-dressing. They should also have a top-dressing of manure or bone-dust immediately after the first bloom is over, and all useless shoots and decayed flower stalks should then be cut away, preparatory to a second.

Tea-scented Roses

This group is the most choice and refined of all the families of roses. They are par excellence the dia-

They may be planted as late as the early part of May in spring, and by the middle of October in fall.

monds of the race. Their odor is delicious, and closely resembles in bouquet the flavor of high-class teas, from which they are named.

They are easily distinguished by their large, thick petals, their elegance of form, and also the delicate tints of their flowers. Nothing can surpass in fragrance and beauty the half-expanded buds of the creamy *Devoniensis*, or the apricot-colored blossoms of *Safrano*, the combined colors of the new *Ma Capucine*, *Le Nankin*, and many others.

But, beautiful as these roses sometimes are in favorable locations out of doors, they are not to be compared to those grown under glass. There they are to be seen in perfection, and amply repay the cultivator for the extra trouble bestowed on them.

The Tea Rose was first introduced from China, about the year 1810; and the old Double Yellow Tea from the same country in 1825. From these a large number of excellent varieties have been raised.

Dendrobium Pierardi.

Almost everybody nowadays who has the means—even where no special houses exist for their cultivation—is anxious to grow a few orchids. Doubtless, the discovery that many of the most beautiful orchids will flourish in a greenhouse temperature during a considerable portion of the year, and that they are not nearly so difficult to manage as was formerly supposed, has had much to do with their increasing popularity. Of course, comparatively few can afford to make a speciality of them, although, taking into consideration the high prices often realized at orchid sales, they must, one would think, in many instances prove a not unremunerative investment. For beginners, few families are more useful or beautiful than the *Dendrobiums*. *D. Pierardi* makes a beautiful basket plant, which may be had in good condition with as little trouble as many of the commoner creeping plants used for that purpose. We have a basket of it literally covered with its soft, velvety-looking flowers; it has been in this condition more than a month, and there are still many buds to open. Two years ago, when it was a very small plant on a block of wood, it was placed in a wire basket lined with moss, and the interior of the basket was filled up with moss interspersed with pieces of charcoal and two or three pieces of very fibry peat. The basket was hung up near the glass, and was well supplied with water during the growing season; afterwards it was rested by gradually withholding water and by exposure to the sunlight, not absolutely to dry it off so as to cause shrivelling. The great thing is to hang the plant near the glass, so as to get the growth well ripened. Where shall we find any stove or greenhouse plant that will yield as much floral beauty with so little trouble as the common but beautiful *dendrobium nobile*? It may be had in flower at any season of the year where there are several plants in stock, by inducing them to make their growth at different periods; and, during their period of growth, heat and moisture are essential, accompanied by bottom heat if possible. Much, however, of the success is due to the proper maturation of the pseudo-bulbs near the glass, altogether exposed to the sunlight, or at first with only the thinnest possible shade over them, to be removed altogether as soon as the plants get injured to the sun. I think this class of plants are often too heavily shaded, and as a consequence they do not flower so well. For the purpose of experiment, I placed a large plant of *dendrobium nobile*, early in August, out in the open air at the foot of a south wall. My object was to see if exposure alone, even in a warm spot, without the aid of glass, would mature the pseudo-bulbs so as to produce a good bloom. The experiment, however, was a failure, for the flowers are few and far between, whilst other plants placed on a greenhouse stage near the glass have flowered well. It appears that a plant that requires an Indian summer to mature its growth must in England have the aid of glass; but I know that many stove plants will flower all the better for being placed in the open air in a warm sheltered place for a month or so, to complete the maturation of their growth.—*E. Hobbay*.

In a moral point of view, the life of the agriculturist is the most pure and holy of any class of men; pure, because it is the most healthful and vice can hardly find time to contaminate it; and holy, because it brings the Deity perpetually before his view, giving him thereby the most exalted notions of supreme power, and the most fascinating and endearing view of moral benignity.—*Lord John Russell*.

THE VEGETABLE GARDEN.

Transplanting Beets.

Transplanting beets may be done with perfect success. The cause of so many failures is by taking the plants when small, like a cabbage or turnip plant. Beets should never be transplanted until the roots are formed, and are at least a fourth of an inch in diameter. I have transplanted them when three inches in diameter with good success. From one-half to one inch is the most suitable size. I would take the most favorable time after the plants reach one-fourth of an inch in diameter. Last year I took plants from the same bed at different times and of different sizes, and transplanted as follows: June 8, plants 3-inch in diameter, yield per acre, 40½ tons; June 11, 4-inch in diameter, yield per acre, 40½ tons; June 19, 4-inch in diameter, yield per acre, 49 tons; June 25, 1 inch in diameter, yield per acre, 37½ tons. There were two reasons why the crop on the last plot was not as good as the three first. The last was the most unfavorable time to transplant, as there was less moisture in the ground, and the plants were thick in the bed and had started a sparing growth, much to their injury. When plants are thick in the seed-bed, the sooner they are removed after reaching a suitable size the better, all other conditions being favorable. Plants are checked in their growth a few days by transplanting, therefore, to insure success, they should be started as early as possible. The chances are four to one that there will be a more favorable time to transplant with early plants than with late ones. I would not recommend transplanting beets as a general practice in their culture, but would do it to fill vacancies that may occur by defective seed, unfavorable time for it to germinate, or a destruction of plants by insects; also on very weedy land, and for a second crop after early vegetables. On land filled with weeds, by the transplanting system the harrow does all the early work of hoeing and weeding at a very cheap rate, and the plants that are set out being finely started, soon grow vigorously, and before weeds can get ahead they will be ready for horse and hand hoeing, the same as corn and potatoes. Plants should be ready to transplant the last half of June or early in July. As the plants are pulled, the tap root is cut off, and the leaves shortened to within one or two inches of the beet. The leaves will soon die if not taken off; the first growth will be indicated by a new set of leaves springing out of the top of the cone of the beet. It is a good point in all cases of transplanting to preserve the fibrous roots in a flexible state; for this reason the greatest care should be taken to keep them moist. As the plants are pulled and prepared I place them in a pail of water. The planting is done with a sharp stick about a foot in length. When the plant is set in its place, a side thrust with the stick presses the dirt against it. The land should be marked in rows 30 inches apart; set the plants 18 inches apart in the rows. In transplanting beets never bury the collar of the plant. It takes 11,000 or 12,000 plants for an acre, a good man and boy should set out 1,000 in a day.—*Henry Lane, in New York Tribune*.

Wireworms.

The true wireworms are the offspring of the clickers, or click-beetles, which lay their eggs in the field, which they hatch, become larvæ or wireworms, and are transferred into pupæ, and from these the perfect click-beetles emerge. It is believed that the female elater, of those species so injurious to field crops, after pairing with the male, lays her eggs upon or beneath the surface of the earth, they are small, round or oval, and yellowish-white. The almost invisible worms which hatch from these immediately attack the crops, whether of corn, turnip, mangel wurtzel, potatoes, cabbages, or grass, and during the five years they are arriving at maturity they no doubt mould their horny skins several times. When full fed they form, generally in July or August, an oval cell deep in the earth, and casting off the last coat, they are transferred to delicate white pupæ, and in about a fortnight they become perfect beetles. Wireworms are not much unlike meal worms, but they are more active, burrowing into the soil with great facility when laid upon the surface. The different kinds resemble each other considerably, the greatest dissimilarity existing in the form of the tail. Sometimes the common wireworm will ascend into the stem of a plant to feed, and come forth at night, or in a dull day, to revel upon the leaves, but they prefer keeping beneath the soil, as they cannot endure the sun or dryness; and as they dislike cold, in severe winters they retire too deep into the earth to do any mischief at that season. Rooks, starlings, sea-gulls, lapwings, plovers, wagtails, robins, black-