

Then I grow for an early bed the *Tussilago alpina*. It is not usual to find this anywhere except in shrubby borders, but in a mass it makes a fine bed in the early spring, and it also adds variety. It is easily increased by division as soon as done flowering, when, if the smallest piece is planted out in the shade, it will make a good plant by the autumn.

## GRAPE VINES IN GROUND VINERIES.

BY GEORGE GRAY,

Head Gardener at Ewell Castle, Surrey.



**I**N commencing the cultivation of the grape vine in the portable structures commonly known as Ground Vineries, it is necessary to consider which is the best of the numerous forms now before the public, the best sorts of grapes to plant, and the soil most suitable for insuring a vigorous growth.

Much depends upon the character of the structures; for, unless they are made in a manner that will admit of the vines receiving the necessary attention without difficulty, it is very certain that, in the majority of cases, the vines will suffer from neglect. The ground vinery which has the greatest advantages is unquestionably that manufactured by Messrs. W. S. Boulton & Co., of Norwich. It is portable in the truest sense of the word, for it can be moved from place to place without difficulty; and, when shifted from one part of the garden to the other, it can be set to work again instantly. Added to this, the glass is fixed in sashes several feet in length, and air can be admitted, or the glass removed for the vines to be syringed or otherwise attended to, without the trouble attendant on the removal of loose sheets of glass. The sides are of wood, but if they are placed on a course of bricks, they will remain sound for a large number of years. Of those made in earthenware and glass, that manufactured by Mr. B. Looker, of the Norbiton Potteries, Kingston-on-Thames, is undoubtedly the best; for, whilst substantial in character, it is light in appearance, and the glass is easily removed, although not, perhaps, quite so readily as in Boulton's. The most suitable width is either three feet or four feet, as two rods can then be trained side by side. In ground vineries of lesser width, there will not be room for more than one rod. The length of each vinery must be determined by local circumstances, such as the amount of money to be expended, and the space at disposal; but, as a rule, vineries twenty or thirty feet in length will be the most desirable. Each vine, whether trained to a single or double rod, will require about ten feet run of vinery; and, therefore, one vine should be planted to every ten feet length. In planting the smallest of the two sizes above mentioned, put a vine at each end; and in the case of the largest size, put one at each end, and one twenty feet from

one of the ends, and train it towards that end. By that means each vine will have its proper space, which would not be the case if the third vine was put exactly in the middle. When there is room enough for four vines, let one be planted at each end, one exactly in the centre, and one half-way between the middle and one of the end vines. It is quite unnecessary to make borders in the same manner as borders for houses are made; but it will be beneficial to the vines if a few barrowsful of turfy loam, and a barrowful of lime-rubbish, and the same quantity of horse-droppings, are dug in where the vines are to be planted. Soil that is undrained, and of a cold and retentive character, is quite unfit for vines; and, unless it is possible to raise the border in which they are to be grown partly above the surface, it will not be of much use to plant them; for, in unfavourable seasons, there will be a great difficulty in securing good crops.

The ground vineries should be placed upon four or five courses of bricks laid upon a level surface, so that there will not be much danger of their sinking. The vines will then have sufficient head-room, and there will be an abundance of space for the development of the foliage. The vines may be allowed to lay upon a floor of slates; but it will be preferable to train the canes to wires fixed about six inches below the lower edge of the glass. One wire to each vine will do; but, as the expense is trifling, it is preferable to have three or four wires, stretched parallel to each other at regular distances apart, for the better regulation of the lateral growth, and the support of the branches. Strips of wood will do as well as wires, except that they will not last so long.

In erecting the side walls—which can be built with or without mortar, at discretion—a few openings, just large enough for a half-brick, should be left for ventilation purposes. As a rule, the air should be admitted at the tops, for cold currents of air are not desirable; but occasions may occur for ventilating at the sides, and it is always well to be prepared for emergencies.

The best sorts of grapes for ground vineries are the Royal Muscadine (white); Black Hamburgh (black); and Kempsey Alicante (black). Select vines struck from eyes a twelvemonth since, which can now be purchased for about three shillings and sixpence, and prune them to within about three buds of the base. As soon as the border is prepared, plant them in the manner indicated above. In turning them out of the pots, remove the crocks, and loosen the roots round the outside of the ball of soil, to facilitate their striking into the new soil immediately they begin to move in the spring. To encourage the production of roots from the base of the stem, bury about two inches of the rod. It must be distinctly understood that, even if the canes are of a considerable size now, they must be cut back; for if they are left unpruned, with a view of obtaining a crop of grapes the first summer after they are planted, a loss of one year at least will be the result; for the lateral shoots will be so weak, that no fruit worth having will be produced, and, at the winter pruning, it will be necessary to prune back the vine to nearly the ground level, for the purpose of obtaining a cane full of health



and vigour. Pruned as here directed, and managed with ordinary care, the canes will attain a length of ten or twelve feet, and be of a proportionate size. The following winter, prune them to about half their length, and in the spring a side-shoot will be produced at every bud. About nine inches will be the proper distance for the side branches to be apart on each side; consequently, if the canes are short-jointed, and the buds rather close together, it will be necessary to remove every other shoot on each side of the vine when about two or three inches in length, or as soon as it can be seen which will be the strongest. In all probability, one or more bunches will be produced on every lateral branch; but, as four bunches are as many as it will be prudent to allow each to carry, the least promising must be removed at an early stage. All the shoots, with the exception of the one at the end, must be stopped when about twelve inches in length, those bearing bunches being stopped at either the first or second leaf above the bunch. The end shoot must be trained along the wire to take the place of that portion of the cane removed at the previous winter's pruning; and it will require stopping at about twelve inches beyond the point to which it will be pruned back the succeeding winter. The following winter, the necessary pruning will consist in shortening the leading shoot as required, and in cutting the lateral branches back to one eye. In the spring, the portion of the main cane produced the previous summer should be managed the same as advised for the other portion the year previous. In all probability, two or three laterals will be produced at each spur after the canes are two years old; and, as one will be sufficient, all but the one most promising to each spur must be removed when a few inches in length.

The summer management consists in ventilating the frames, stopping the laterals as required, pouring water on the floor for maintaining a proper degree of atmospheric humidity. During the summer season, the vines may be watered if the weather happens to be dry enough to render it necessary. The bunches will require thinning, but it must be done in a careful and moderate manner.

---

## TERRESTRIAL ORCHIDS.

BY GEORGE GORDON.



**O**F the large number of exotic orchids in cultivation, the terrestrial species, that is to say, those which grow in the soil in their native habitats, form but a very small part. They are, however, all deserving of the estimation in which they are held by experienced orchid-growers, and I gladly comply with the request of a correspondent, and offer a few hints on their cultivation.

**CALANTHES.**—First we have the lovely *C. veratrifolia*, with its immense spikes of pure white flowers, which are produced in such abundance during the months of May and June as to render it invaluable for the summer exhibitions. Then there are the pretty