

With amateurs like these working in the spirit which animated Mr. Greenshields, and with trained nurserymen like Mr. Downie of Edinburgh, also interested in the culture of this lovely flower, and to which latter all florists' thanks are due for his life-long labours in the development of our best florists' flowers, we may rest in expectation that year by year we will see progress made in Pentstemon culture.—ALEXANDER SWEET.

SIMPLE FACTS ABOUT TOP-DRESSING.

INQUIRIES relative to Vines and Vine borders are continually being made, and doubtless will be as long as the amateur delights in tending his vinery, or the wealthy require a good supply of Grapes from their more extensive vineries. In consequence of the great interest in Vine growing having been thus maintained for many years past, almost every conceivable method of cultivation has been thrashed out in the pages of the *Journal of Horticulture*, many of those highly instructive articles being penned by eminent cultivators, who have been as well known for the excellence of the produce staged by them at the leading horticultural shows as for the freedom with which they described their method of procedure. Yet it is a well known fact that some of those who have achieved phenomenal successes are directly opposed to each other concerning the means they adopt to attain the same end. This conflict of opinion is, no doubt, somewhat embarrassing to casual observers; but if the greatly varying circumstances under which each cultivator conducted his operations could always be put quite clearly before readers, much that is apparently incongruous would, in many cases, be better understood.

Take, for instance, the excellent practice of top-dressing Vine borders annually. Many cultivators place implicit faith in the practice, while others consider the performance of it of little consequence, averring that they have seen but few beneficial results which could be directly traced to periodical top-dressings. As far as my observation goes there are hundreds of Vines which receive no benefit from the practice, not because the system is at fault, but for the simple reason that the carefully prepared soil which is spread so evenly upon the surface of the Vine borders only comes in contact with a few stray roots, the majority of them having wandered in search of food not found in a palatable form near the surface; and so long as an unsuitable mass of material remains between the roots and the rich top-dressings it is a difficult matter to induce the roots to come upwards to it. Once place fresh healthy soil near good roots, they will quickly appropriate such necessary food, and become ten times more active. In many cases the Vines, being planted in wide deep borders, ramble freely in all directions for the first few years, while the compost is rich and sweet, no especial trouble being taken to keep the roots near the surface. They frequently penetrate far deeper than is good for their ultimate benefit, as after a few years the bulk of fibry roots are at the extremity of the border or deep down in the subsoil. The consequence is, the Vines gradually get into an unsatisfactory state through sluggish root action, and it frequently happens that Vines in this state cannot be restored to vigour and fruitfulness without renovating the border to its entire depth, because the bulk of the roots cannot be reached by any other means.

These facts ought to be deeply engrained upon the minds of those who are engaged in top-dressing Vine borders at this season of the year. It is a loose system of culture to get into the too common habit of yearly removing the soil from Vine borders to a given depth and adding fresh materials, without paying much regard as to where the roots are located. The real guide should be to remove the soil till a fair quantity of roots are found, then to notch any strong ones in places where they are devoid of fibre, and cut clean away any damaged parts. The soil should then be worked underneath them, lifting them as near the surface as practicable, and place a few inches of soil upon the top, instead of always filling the border to its normal height. I am fully convinced that Vines frequently receive too much soil at the yearly top-dressings, which causes the roots to become in time too far from the surface, and as they do so produce less of those small fibry roots upon which the perfect finish of a good crop is so largely dependent. Top-dressing, when carried out intelligently, is, I hold, of immense benefit, and ought to receive due care and attention.

Those who can command good turfy loam are more fortunate than many of their neighbours, but any fairly good soil can with proper preparation be made suitable for top-dressing. When heavy clayey soil has to be dealt with abundance of wood ashes, road sand, and lime rubble should be thoroughly incorporated with it; the aim should be to produce a good rooting medium, as it is always a simple matter to supply animal manure to feed the roots and sustain the crops. For surfacing the soil of Vine borders

where the Vines are in good health an excellent compost consists of four parts good loam, one of well-decayed horse droppings or cow manure, half a part wood ashes, and a little soot. When the loam used is of a heavy nature add a sufficient quantity of lime rubble and road sand to make the whole in the right mechanical condition for roots to work freely amongst, and to prevent it getting into a sodden condition the quantities of these materials must of course be varied according to the degree of tenacity the loam used possesses; in some instances the lime rubble, wood ashes, and sand ought to be as large in bulk as the loam; sufficient manure should then be added to make it about one-sixth of the whole.

Where the Vines are not in good condition and are wanting in fibry roots I would substitute leaf soil for the manure, as I have found Vines have a great partiality for sweet, half-decayed leaves, in which they root with surprising freedom, and it is useless to attempt to feed Vines until abundance of roots are first produced. After the soil has been placed in position, half-decayed manure to the depth of 1 foot should be placed upon outside borders, but I would defer placing the manure upon the inside ones until the fruit is thinned. Where Vines in outside borders are forced early I fully believe in placing fermenting materials to the depth of 3 feet upon the borders, as it keeps the surface of the borders warm, and induces in a marked degree what all Grape growers strive to get—viz., plenty of surface roots.—H. DUNKIN.

CINERARIAS AT MIDWINTER.

CINERARIAS grown as annuals are extremely useful plants, and accommodating too. Although the regular flowering season is considered to be during the months of March and April, a good display may, with a little management, be obtained at midwinter and for a month before Christmas if desired, so amenable are the plants to different forms of treatment. A good number of plants flowering at the time named gives a pleasing variety after the bulk of the Chrysanthomums are past, the same plants lasting in good condition for a considerable time.

Apart from their usefulness as decorative plants, Cinerarias in a cut state are appreciated, the bright and varied colours appear so well under artificial light. No annual that I am acquainted with gives so much range in colouring as Cinerarias.

An advantage gained in flowering these plants at this time of the year is they are not nearly so liable to be infested with green fly as they are when flowering more at the ordinary season, when the weather is warmer. Where convenience exists, there is no reason why the plants should be in flower at one time. Whether it be during the middle of winter or in spring, a succession can easily be secured, provided space is available for a greater number of plants. The point to study is to sow the seed at intervals, instead of making but one sowing, as in the ordinary method of allowing the plants to flower as they will, say in March and April.

Some cultivators still adopt the old method of raising their stock of plants from offsets annually. Where special kinds or colours are desired no other method is so certain of success; but, nowadays, when such a wide range of colours as well as quality in the individual blooms can be obtained from seed through a reliable firm, it seems to me to be a waste of time to resort to the offset method. For flowering at Christmas, those raised from seed are better. Two sowings should be made—the first during the early part of May, and the second the first week in June. A succession of flowering plants is then assured, assuming, of course, neglect does not follow the initial stage. Any fine sandy, sweet soil will suffice to sow the seed in. Well-drained pans are the best for the purpose, covering the pan with a square of glass. To maintain the soil in a moist state, a little moss over the glass will dispense with the necessity of shading the frame.

Directly the seedlings show through the soil remove the moss and tilt the glass a little to admit air to keep the plants sturdy. A weakly growth cannot produce dwarf plants with robust foliage and strong heads of bloom, such as are required to be effective in a decorative point of view, especially for house use. Plants ranging from 9 inches to double that size in height are best suited for decorative use at the time named. This is a point to be borne in mind.

The pots in which the plants are to flower should range from 4½ inches to 7 inches in diameter. These final sizes will guide the cultivator in giving the plants their preceding shifts. A compost largely composed of leaves thoroughly decayed, with a small portion of loam and sand mixed with it, will be suitable in the initial stage; afterwards more loam should be added in the place of the leaves, with a small quantity of partly decayed horse droppings for the final shift. It is a mistake to allow the roots of Cinerarias to