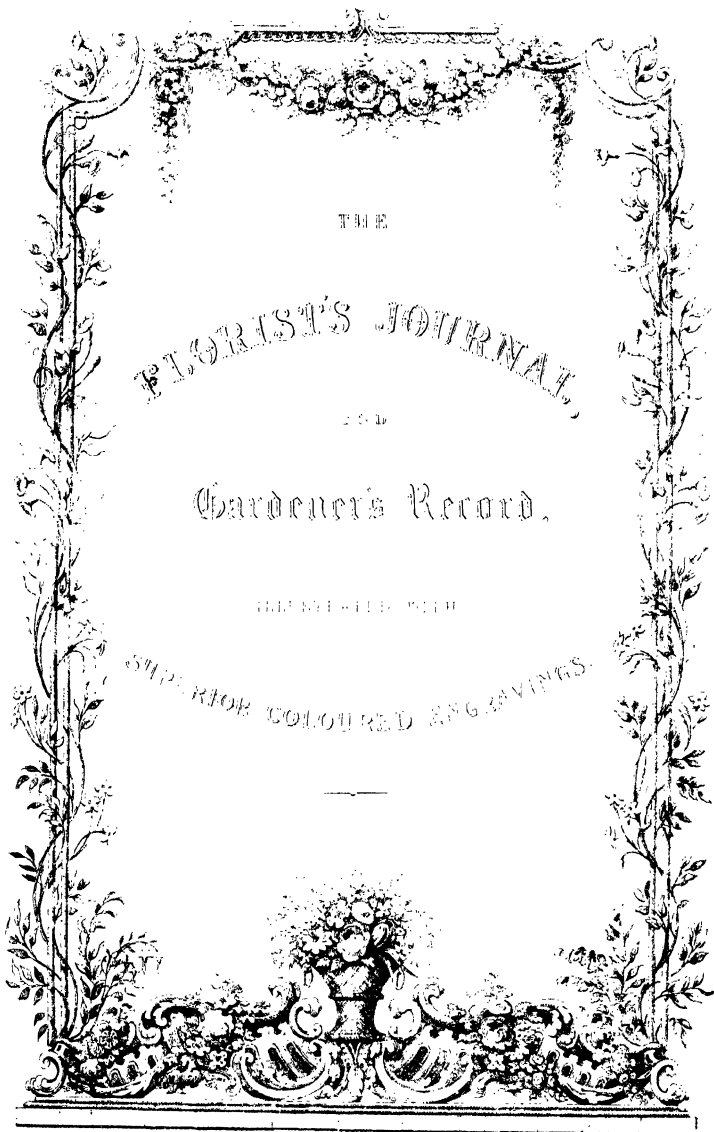


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THE

FLORIST'S JOURNAL,

OR

Gardener's Record,

ILLUSTRATED WITH

SUPERIOR COLOURED ENGRAVINGS.

THE

FLORIST'S JOURNAL

FOR THE YEAR

1844.

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P R E F A C E.

ANOTHER year is closing, and another volume of THE FLORIST'S JOURNAL is before the public, to receive its measure of praise or condemnation — may it be found “perfect in all its parts!” It is usual on this occasion of an annual address, to speak of *ourselves* and *our* prospects, but for once we indulge a propensity to speak of others — previously assuring our friends, lest they stumble on some misconception, that we are perfectly satisfied with both.

It is, we think, sometimes as useful, and always more gratifying, occasionally to review the difficulties we have overcome, as to narrowly examine those likely to occur; and with this idea, we propose to glance retrospectively and cursorily at the advance that has been made and the improvements effected since May 1840, the period of our commencement.

For some time both before and after that date Horticulture was declining; a degree of apathy pervaded its several interests — though, fortunately, without materially injuring any of them — until, in 1841-2, a reaction occurred, which threw new vigour into every branch of the science;

and since then its progress has been most satisfactory. Theory has been found to be other than mere chimerical romance. The science of chemistry has been cleared of much of the technical obscurity with which it was encumbered, and has thus become familiarised and rendered an useful auxiliary; and, as a necessary consequence, the practice of Horticulture has advanced in a corresponding ratio. To assist which improvements have been made in the operative departments, tending to render the application of correct principles easy and their effects certain.

These advances can only be regarded as the gratifying first-fruits of a general search after knowledge undertaken by the members of the profession; the spirit of inquiry has taken firm possession, and most of the energy requisite to a proper and beneficial consummation is at length aroused. Let it still be pursued, as the only and certain means by which it is possible the gardener can hope to attain the position his character and usefulness entitle him to.

It remains only to show how this has been done, and how it may be continued, to insure the desired result. An advance of this magnitude cannot be thought of as resulting from isolated individual efforts; no—it required the united assistance of many; and it is to the formation of societies for the promotion of Horticultural objects, no matter how they act, whether by encouraging the production of extraordinary subjects in the distribution of prizes at an exhibition, or by the dissemination of knowledge in the pleasing and equalising manner of mutual instruction; it is to the influence of societies of this nature that the science is mainly indebted for the advancement

effected, and the eminent position it now occupies. One of the effects of public exhibitions of the productions of Horticulture has been the introduction and continuance of a commendable spirit of emulation, the result of which is evident, in the superiority of the articles submitted at the present day over those of the period we first spoke of; and this superiority must be progressively augmented in proportion to the extension and continuance of the incentive.

Another, and even more important object, has been achieved by this competition — it has removed the film of self-complacency from the vision of many, and imposed on all the necessity of opening their eyes and understandings to the various advances progressing around them; and hence the formation of Gardeners' Instruction Societies, which, if we regard their already ascertained results, and the moral influence exercised on the minds of young members, must be considered as pre-eminently the most important advance of the whole.

And the Florist, too—he who, as the poet says, has

“ Mark'd with secret pride the wonders of his hand,”

can tell us of the happy influence of friendly competition, and point to instances in his Auriculas, his Tulips, Pelargoniums, Pansies, Dahlias, and in all he grows; in fact, the very pursuit itself must have originated in this feeling, though perhaps evinced in some other form.

Thus has emulation been made conducive to the foundation of a better system of gardening, to the manifest advantage of all interested in it; who, to preserve their present position and secure future prosperity, have only to press onward the impetus thus given, by giving all the aid

in their power to societies of either kind already formed, or by the formation of others in every promising locality.

It must, however, be remembered that to render the associations thoroughly effective, publicity should be given to their proceedings, for which ample opportunities are now offered on all sides. The Horticultural Press is the engine by which gardening has been rescued from the darkness of empiricism, and elevated to become a science; and without its invigorating aid would inevitably return to the former condition. It becomes therefore of equal consequence to encourage simultaneously meetings for the promotion of the profession, and the means by which their usefulness is made known. For the very flattering proportion of this encouragement we have experienced, we are grateful; and conclude this address by cordially thanking those correspondents whose contributions grace our pages, and our subscribers generally, for their past favours, trusting to merit and receive a continuance through the future.



THE
FLORIST'S JOURNAL.

JANUARY, 1844.

ON ROSES.

WITH AN ILLUSTRATION.

CLOSELY associated with the love of roses is the very natural desire to possess them in their greatest beauty ; and much of this necessarily depends, not only on the skill and attention with which they may be tended, but also, to an extent seldom appreciated, on the position or situation in which they are grown. The proper station for this, the queen of flowers, in our gardens has not yet met the attention we think it deserves ; and it may be, that part of this neglect may be traced to opinions which have been promulgated, tending rather to bring this class of flowers into disfavour than otherwise. It has been held, that the general form of a rose bush is compact and lumpish, which totally unfits them for grouping in a tasteful manner. Granting the form usually assumed to be compact, or even round, it must be borne in mind we do not look upwards when viewing their beauties, as is the case when admiring the verdure of a group of trees, by which *their* outline is drawn so prominently and conspicuous upon the heavens behind them ; on the contrary, our attention is directed downwards, and, thus seen, nearly every plant or tree would assume the same form. Indeed, it may be questioned if the compactness of these plants is not an advantage, as it brings them more immediately into one view ; and, on the other hand, we believe there is scarce another family of plants, certainly not one so extensive, that will present a greater variety of outline, under the same general line of altitude, than does the Rose : but, even to meet difficulties, should two neighbouring plants indicate a tendency to the same form, they are so ductile, that by

pruning or training, the shape of one or both may be completely altered in half a summer. Thus we see no real objection to their arrangement in groups; and in fact, so far does our opinion incline to the contrary, that we believe the Rosary to be the only place in which their loveliness can be estimated to the full.

We therefore proceed to briefly consider some of the circumstances affecting their arrangement in this manner. The best situation for a Rosary, if choice can be made, is on a gentle declivity facing to the south-east: an easy slope is to be preferred, because the plants receive more light, and are seen to greater advantage than when growing on a level surface, and the compartment itself looks larger; and also because the superfluous moisture will pass off quickly in such situations, for, though Roses delight in a rich retentive soil, they receive much injury, in common with all plants, from stagnant aqueous matter in the soil.

In the disposition of the plants, the taste of the designer, aided by local circumstances, must be the chief guide: a few general rules, however, may assist the most refined; thus, for instance, the superiority of an arrangement would be self-evident in which the several families or classes were in juxtaposition, allowing the hybrids or doubtful kinds to approach the nearest to their affinities, so that if a division were occupied with the varieties of China Roses, the next should contain their hybrids, followed by Perpetuals or Bourbons according to the class the hybrids partake of: the arrangement in the beds requires but little explanation, being only to place the more vigorous kinds towards the centre, and to include as great a variety of colours as possible. Standard Roses are fine objects when planted singly, either in the centre of the beds or on the turf, though the number of them should be limited, as too many take from the appearance of the whole, by excluding from view the dwarf kinds in their rear, and by imparting an air of confusion where everything should be as regular and neat as art can make it; a grove of them, however, may be allowed as an appropriate background.

We are entirely opposed to the introduction of what is called "natural scenery" in Rosaries: thickets and jungles of Roses may be read of with pleasure, but they present a very untidy appearance in a garden, and we should therefore endeavour to possess the whole with a classic and chaste regularity, as being

more in consonance with the plants themselves, so entirely the result of art, and with the general idea of a collection. This principle excludes the mis-shapen masses of stones, shells, &c. which, dignified with the title of "rockwork," we frequently find occupying the centre beds of Rosaries, than which nothing can be more opposed to a correct taste: in their places we would recommend the erection of a light, elegantly-proportioned building in the form of a temple, which, when covered with Roses, would be in excellent keeping, and need not be a whit more expensive than are these misplaced piles of rockwork.

The boundaries of places set apart for the culture of Roses should be distinctly marked in a manner to be plainly seen; at the same time, to agree with the interior, wearing a light airy appearance, for this purpose, perhaps there is nothing more suitable than the Roses themselves: a very pretty boundary line may be formed by placing short posts ten feet apart, with a chain fastened to the top of each, on which the climbing kinds may be trained in the manner of a festoon; these fences have a beautiful effect, realising the pastoral idea of a "garland of roses." For the edgings of the beds we would also employ roses, the pretty little Miniature or Fairy Roses being remarkably well suited, from their dwarf and very neat habit; they require some protection through the winter, which may be given by pruning close back in the autumn, and covering the remaining part with fern or dry leaves.

A Rosary thus formed and arranged would possess a pleasing variation, while an air of harmony would pervade the whole.

EDITOR.

LIST OF ORCHIDÆ.

(Continued from page 240.)

135. *Epidendrum cuspidatum*. (Derived from prickly-pointed.) Plant bulbous; bulbs nearly one foot long, rather slender; leaves placed at the summit of the bulbs, six inches long; flowering from a short spike rising from the summit of the bulb; the sepals and petals are of a yellowish green, changing with age to a pale yellow; labellum white and fringed. This species requires pot cultivation in a mixture of turfy peat and sphagnum, with a liberal supply of water when in a growing state, provided there be a good drainage, with a temperature of 65° to 70°. — *Native of Dominica*.

136. *Epidendrum aloefolium*. (Derived from aloe-leaved.) This species is of a trailing habit; its leaves are from eighteen inches to two feet long, of a

thick fleshy green, narrowing to an acute point; flowers produced on a solitary stem; sepals and petals three inches long, of a bright green colour; column white; labellum white, 3-lobed, the middle lobe extending one inch beyond the other two, and ending with an acute point. This species is worthy of cultivation, and will either grow on a lump of turf or in a pot with the same compost as the above; in either case it requires hanging up on account of its long drooping leaves; with a temperature of 65°. — *I believe a native of Mexico.*

137. *Epidendrum Harrisonia*. Plant with tall bulbous stems, three feet long; leaves rather fleshy, alternate; flowers produced on a drooping raceme from the summit of the stem; the sepals and petals are of a delicate green, with a pure white labellum. This species is not handsome; it requires pot cultivation, in a mixture of turfy peat and sphagnum and a liberal supply of water; a temperature of 65° to 70°. — *Native of Brazil.*

138. *Epidendrum floribundum*. (Derived from its free flowering.) Plant with bulbous stems, from two to three feet long, upright; leaves alternately up them; flowering from the summit in a branching raceme, producing from forty to fifty small flowers; sepals and petals brown, the latter falling back, of a thread-like appearance; column pale green; labellum white, stained at its breast with purple. This species is worth cultivation, and requires growing in a pot with a mixture of sphagnum, rotten wood, and turfy peat, and plenty of water while growing; temperature, 65°. — *Native of Mexico.*

139. *Epidendrum bifidum*. (Derived from being cleft.) This is rather a curious species, but not very handsome, yet worthy of a place; the sepals are bright green, slightly blotched at the extremity with pink; petals bright yellow; column white, with the helmet yellow; labellum flesh-colour, with a slit in it that renders it a peculiar object; it requires the same treatment as the above, with a temperature of 65° to 70°. — *Native of Tortola.*

140. *Epidendrum nocturnum*. Stems upright and leafy, about ten inches long, simple, erect, and round; leaves sheathing, alternate, oblong, flowering from the summit of the stem; sepals and petals greenish white; labellum white; it smells very sweet during the night. This will do either on a chump of wood or in a pot, with the same treatment as for most others; temperature, 65°. — *Native of Martinico and Jamaica.*

141. *Epidendrum nocturnum var. angustifolium*. This plant may be readily distinguished from any of the others by the narrowness of its leaves, but is the same in regard to its flowers, and will do with the same treatment and temperature as the other. — *Native of the West Indies.*

142. *Epidendrum nocturnum var. latifolium*. This is another variety, with larger and broader leaves; the flowers are also larger, requiring the same treatment as the other. — *Native of the West Indies.*

143. *Epidendrum nocturnum var. punitum*. This is a very small variety, and well adapted for growing on chumps of wood, provided its roots are covered with moss and it is allowed a liberal supply of water; temperature, 65°. — *Native of Essequibo.*

144. *Epidendrum variegatum*. Plant bulbous; bulbs four to five inches long; rather flat leaves, mostly in pairs, produced from the summit of the bulbs; flower-spike also proceeding from the summit; the sepals and petals are yellowish green, spotted with dark brown; the labellum pale yellow. This species will either do on a chump of wood or in a pot, in a mixture of turfy peat, sphagnum, and rotten wood; in the latter way not so liberally supplied with water as in most cases; it requires a temperature of 65° to 70°. — *Native of Demerara.*

145. *Epidendrum odoratissimum*. This plant is far from being handsome; but the astonishing odour which it yields during the night renders it worthy

of cultivation ; it will do with the same treatment as any of the others, and a temperature of 65° to 70. — *Native of Brazil.*

146. *Epidendrum selligerum*. Plant pseudo-bulbous ; bulbs rather better than three inches long ; leaves mostly in pairs, nearly one foot long, and rather narrow ; flower spike rising from the summit of the bulb. This is a fine species, and should be in every collection ; and will either do on a chump of wood or in a pot, in a mixture of sphagnum, rotten wood, and turfy peat ; if in the former way, it requires a liberal supply of water during the summer months, and a temperature of 65°. — *Native of Guatemala.*

147. *Epidendrum Clowesii*. Plant with bulbous stems two feet long ; leaves alternately up them, the raceme rising from the summit of the stem in a drooping position ; the flowers are small ; sepals and petals are pale green ; labellum greenish white. This is rather a scarce species. It requires pot cultivation, with the same treatment as the others, and the same temperature as the last species. — *I believe a native of Guatemala.*

JOHN HENSHALL, K—P—Y.

(*To be continued.*)

NOTES ON A FEW EARLY-FLOWERING PLANTS FOR THE GREENHOUSE.

SIR,—I often reflect what a pity it is that the more early flowering kinds of greenhouse plants are not cultivated to a much greater extent than is too generally observable.

In the months of February, March, and April, every expanded flower arrests more attention, in fact, appears more lovely, than at any other period. Winter is just loosening its icy hold. Nature wears a reviving aspect, and our spirits, becoming exhilarated by a lighter air and the approach of joyous summer, we look around for some lovely object of creation on which to realise, for the moment, our often vague anticipations. It is yet too early to expect much variety in the borders of the flower-garden, and the greenhouse is the only source which will yield the desired pleasure ; and here, too frequently, we meet only the chilling aspect of green leaves or bare stems. This, of course, depends on the selection of plants when furnishing the house, and may therefore be easily obviated. I subjoin a brief notice of some that bloom at this desirable season, with some remarks on their management. There are, doubtless, many others equally suitable, but even those enumerated will be sufficient to remove the blank so much to be complained of.

The genus *Epacris*, from containing so many interesting varieties, must be considered indispensable. Some or other of them may be had in bloom from December until June. They delight in fibrous peat, broken rough, and fine white sand. The young plants should be frequently stopped, by pinching off the points of the shoots while growing, to induce them to throw

out laterals: these again should be stopped until the plants have attained a size sufficient to warrant their blooming.

The pretty *Cosmelia rubra* occurs next in order. Its habit and manner of flowering closely resemble that of the *Epacris*, though the flowers themselves are larger and more deeply coloured. It succeeds under the same treatment.

Fabiana imbricata, although recently found to be sufficiently hardy to bear exposure to our winters, still merits a place in the greenhouse, on account of its precocity and its lovely heath-like pure white blossoms.

Pultenia stricta, an old and somewhat neglected, yet certainly beautiful, species, when properly managed, is highly desirable: its spikes of bright yellow and red, pea-shaped flowers, copiously produced, render it a most pleasing object. This plant should be pruned closely back as soon as the flowering is over, which will keep it dwarf and handsome.

Chorozema. I need not enlarge on the beauties of this genus; it is universally grown, and therefore needs no commendation. A large pot and frequent stopping will speedily produce fine plants.

Eutaxia myrtifolia is, like the *Pultenea*, a plant whose beauty depends entirely on the management it receives. During the summer and autumn every new shoot should be stopped as soon as it has attained two, or at most three, joints: thus it may be formed into an extremely neat compact dwarf shrub. It is a most profuse bloomer.

Pimelea. This genus, with its capitate heads of lovely pink, white, and red flowers, may be classed among the best of greenhouse plants. They are generally of easy management, though I have found some difficulty with *P. spectabilis*, when growing on its own roots: it appears to do better and live longer when grafted upon another species.

Diosma capitata is closely allied to the *Pimelea*; the colour of the flowers is a lively lilac.

All the above plants succeed under the same treatment: they delight in sandy peat containing plenty of fibre, and require plenty of air at all times, and should be kept constantly moist, though never saturated, with frequent stopping, to keep them close and dwarf.

Next to these is the *Genista*, with its splendid corymbs of bright yellow blossoms; these require rich turfy loam to grow in, plenty of air and water, and but very little pruning, being naturally close, compact-growing plants.

The *Boronias*, too, are charming plants; though not quite so early to flower as some others, yet in April and May they are fine objects; the prevailing colour in their flowers is a rich rosy red. They should be grown in peat, loam, and sand, and make rapid progress when grown in large pots.

Oxylobium retusum and *obovatum* are two fine plants, affording a pleasing variety among the other plants named, from their more robust habit and larger foliage. The flowers are papilionaceous, of a bright orange and red: fibrous peat suits them best.

Among these we have nearly every colour except blue, and this may be had in *Kennedia monophylla*, a lovely climbing plant, bearing copiously racemes of blue and white pea-shaped flowers. It delights in peat and loam, and should be trained upon a wire trellis. It requires but very little pruning.

Lechenaultia formosa is a delicate low-growing plant, rather difficult in its management, but, when seen in good order, a most lovely object, being densely covered with small bright red flowers. It requires to be potted in fibrous peat with nearly an equal quantity of silver sand; a few rough pebbles mixed in the soil will induce it to root more readily. An abundant supply of air and water should be given it during summer, reducing the quantity of each on the approach of winter.

The above selection, with the assistance of a few *Azaleas*, *Camellias*, and *Rhododendrons*, would render a greenhouse all that could be desired for the first three months of the returning season, when they would be succeeded by the *Pelargoniums* and other summer flowering plants.

P.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Association.

VEGETABLE PHYSIOLOGY: the ELEMENTARY ORGANS.

By Mr. T. MOORE.

THE vegetable kingdom cannot be distinguished from the animal kingdom by any absolute character: there is considerable analogy between the members of each, especially as regards their more important functions, and general principles of organisation; but when viewed in detail, we find that in the higher orders of each kingdom there are important and distinct functions specially allotted. Whilst between the more perfectly organised members of each kingdom, the analogy is found to be more perfect, the points of distinction are likewise more apparent; and when we descend to the lower orders of each, it is difficult to discover any character by which the line of distinction is easily recognised. It has been thought by some, that the animal

and vegetable kingdoms form separate and connecting links, in what may be termed the universal chain of nature, and by which all created things are brought into endless connection. Such a view is not, however, a correct one; it is much more philosophical to regard the organised kingdoms of nature as meeting at their lowest point, and simultaneously rising side by side, the perfect forms of each being more widely separate, as well as more easily distinguishable from each other.

A plant is a member of the vegetable kingdom; it is imbued with a mysterious vitality, by means of which it is enabled to perform the offices of respiration, assimilation, and secretion. A plant is individually originated by a seed, borne on its parent plant, and is destined in its turn to give rise to a similar progeny; these seeds, or germs, possess the peculiarity of retaining their vitality for a considerable length of time, in a perfectly inert and latent condition, even when detached from their originating source. A plant grows by taking up food from the soil in which it is placed, through the spongioles of the root, and by absorption from the atmosphere through the leaves; this aliment is then assimilated in the laboratory of the vegetable structure, and by a process of deposition of matter, the fabric is increased: this goes on until, in the fulness of time, the plants arrive at maturity, developing a succession of leaves, which are succeeded by the flowers, and ultimately by the seeds. A plant is multiplied by division of its axis, as well as by seed; thus if a portion containing a bud is removed, and placed in favourable circumstances, it will form a new plant of the same nature and properties as its parent.

These are general truths, which it requires no great exertion of the mind to assent to; but how all this is accomplished is a point of which we are ignorant. Science may and has constructed theories, by the help of which much light has been thrown on the subject, and by means of which the progression of a plant through its several stages up to maturity, and thence to decay, may in some degree be explained; but science cannot divest the vital principle of its tabernacle of matter, and show us of what it consists. The mystery, like that of our own existence, is unfathomable, and, to use the words of Sir J. E. Smith, "we can know it only as we know its Omnipotent Author—by its effects. This vital energy is stupendous in every organised body, from our own elaborate frame to the humblest moss or

fungus: those different fluids, so fine and transparent, separated from each other by membranes as fine, which compose the eye, all retain their proper situations (though each fluid is perpetually removed and renewed) for sixty, eighty, or one hundred years or more while *life* remains: so do the infinitely small vessels of an almost invisible insect, and the fine and pellucid tubes of a plant, all hold their destined fluids, conveying or changing them according to fixed laws, but never permitting them to run into confusion, so long as the vital principle animates their various forms: but no sooner does death happen, than, without any alteration of structure, or apparent change in their external configuration, all is reversed: the eye loses its form and brightness: its membranes let go their contents, which mix in confusion, and thenceforth yield to the laws of chemistry alone. Just so it happens sooner or later to the other parts of the animal as well as vegetable frame; chemical changes, putrefaction, and destruction immediately follow the total privation of life, the importance of which becomes instantly evident when it is no more."

To take a seed as it separates matured from its parent stock, in some cases, dry and parched in its appearance, in others covered with a coating almost as hard as the solid rock, or as frequently so minute as to be scarcely discernible, and to know that such a fragment contains within it all the elements of life,—to take any other body resembling it in appearance and in substance, yet spun out by the hand of man,—to know that one of these when placed in the soil would spring up and grow, and produce leaves, flowers, and numerous bodies like itself,—and to know, as assuredly, that the other, to all appearance its perfect similitude, if placed in a similar situation, would remain perfectly inert and unmoved, until decay had destroyed its texture and reduced it to dust,—is a source of reflection, a close application to which would overwhelm the strongest intellect, and place an impenetrable cloud before the brightest vision: the limited and feeble comprehension of humanity would be unable to explain how an atom, such as we have been speaking of, can produce, through innumerable ages, a succession of beings transmitting each to the other, not only material resemblance, but also the inexplicable and mysterious property—vitality.

In the limits to which I am necessarily confined, it would be impossible to enter very minutely upon the whole bearing of the subject, even had I the ability to do so: all that I can attempt

to do, will be to give you a brief outline of what is generally acknowledged on the subject before us, and to express my own opinion on those points which seem to be debatable.

The materials of which plants are composed, or, in other words, the *elementary organs* of plants, consist of substances called *tissue*, the chemical bases of which have been found to be oxygen, hydrogen, and carbon, to which nitrogen is occasionally added, and these are found to be combined in variable proportions: vegetable tissue exists in three forms, which are termed *cellular tissue*, *vascular tissue*, and *woody tissue*.

CELLULAR TISSUE is the only kind which exists in all plants. It consists of little vesicles, or cells, of colourless transparent matter, contained within a delicate membrane, which, by cohesion, forms the sides of the cells; these assume a variety of forms in consequence of being susceptible of pressure in any direction. *Membranous cellular tissue*, in its normal form, has these vesicles spheroidal; but, in consequence of the pressure of the adjoining vesicles, they are frequently met with in other shapes: thus we have the oblong, and the lobed, as in many leaves; the square, as in the cuticle of some plants, and frequently in the pith; the prismatical, as in the liber, and in the vicinity of vessels; the cylindrical, as in the genus *Chara*, where it has been discovered so large, that a single bladder has been found to measure four inches in length, and one third of a line in diameter; the fusiform, as frequently found in wood; the muriform, in which the prismatical bladders, viewed laterally, are so arranged as to resemble the bricks in a wall; the compressed, as in the cuticle of all plants, which, although composed of cells, assumes, in consequence of compression, the form of a simple membrane; the sinuous, as in the cuticle, and frequently beneath it. When the edges of these vesicles fit together by plane surfaces, it is called *parenchyma*; when they are elongated, and overlap each other at the extremities, it is called *prosenchyma*. *Fibrous cellular tissue*, is that in which the sides of the vesicles are either composed of vegetable fibre and membrane in conjunction, or of fibre only. This kind occurs in the leaves of *Sphagnum*, the pith of *Rubus odoratus*, the parenchyma of *Oncidium altissimum*, the coating of many seeds, and the aërial roots of orchidaceous plants; it also constitutes the lining of the valves of almost all anthers. It differs from that previously noticed, in being composed either wholly or in part of vegetable

fibre, which latter may be compared to hair of inconceivable fineness, whereas membrane is an extremely thin substance, which does not cohere more strongly in one direction than another. *Vasiform cellular tissue*, consists of tubes or cylindrical cells, whose sides are marked with numerous dots, arranged more or less in a spiral manner. These tubes are internally divided by transverse partitions, formed by the uniting of the ends of the individual cells; they may be readily observed by the naked eye in a transverse section of the cane, the bamboo, the vine, and also in monocotyledonous plants generally; the openings which are seen on examining the sections being the mouths of the tubes, or what would in vulgar terms be called their "porosity."

VASCULAR TISSUE consists of simple membranous tapering tubes, and exists in two principal forms, viz. as *spiral vessels* and as *ducts*. *Spiral vessels*, or *tracheæ*, are membranous tubes with conical terminations, which are internally occupied by a spirally twisted fibre, capable of unrolling with elasticity, and presenting to the eye an appearance resembling a twisted wire. It is not clearly ascertained whether the fibre composing these spirals is in itself hollow or solid, both opinions being entertained by men of science. It would seem most natural to regard it as a solid body, were it not that Hedwig has discovered that coloured fluids, when rising in these vessels, follow the same direction as the spiral; this may, however, be an illusion, from the colouring matter rising in the channels formed by the approximation of the cylindrical fibres, and not actually in the fibres themselves. Their extremities are, without doubt, of a conical form, and in this way we may suppose them to elongate during the increasing developement of the part in which they occur. They are formed, sometimes by the convolution of a single fibre, and in other cases by the union of several fibres turning in the same direction, and forming a right-handed screw; the former, which is its most common character, is called a simple spiral; the latter, a compound one. They vary considerably in size, being met with from $\frac{1}{300}$ to $\frac{1}{3000}$ part of an inch in diameter; in the floral parts they are exceedingly minute. They are situated in the medullary sheath, that is, in that part of the axis which surrounds the pith; they are also found in every part of the ascending axis, the tissue of which emanates from thence, such as the veins of leaves, and all the modifications of leaves. They

are not generally found in any part which is formed in a downward direction, and are therefore usually absent from the wood, the bark, and the roots: as exceptions to this general rule may be mentioned *Nepenthes*, where they abound in the bark and pith, and some few seeds, of which they form part of the testa, or covering. They are, for the most part, altogether absent in flowerless plants, and hence is founded one of the grand divisions of plants into Vasculares and Cellulares, the only exceptions being in the case of Ferns and Lycopodiaceæ, which are the connecting links between phanerogamic and cryptogamic plants. It has been supposed by some botanists, that the spiral vessels terminate in the orifices of the cuticle called *stomata*; but this supposition is without any solid foundation. *Ducts* are also membranous tubes, with conical or rounded extremities, and differ from spiral vessels principally in their incapability of being unrolled without breaking: owing to this close analogy, they are by some persons still confounded with spiral vessels; but it seems to be desirable to view them as distinct organs, because they occupy a station in which true spirals are rarely found, and we may, therefore, without injustice, infer, that their office and functions are somewhat different. Their variations of form are designated, the closed, the annular, the reticulated, the scalariform, &c.

WOODY TISSUE is also composed of slender, transparent, and membranous tubes, tapering to each end, laying in bundles, and having no direct communication with each other except by invisible pores. It is nearly allied to cellular tissue, being by some botanists considered as a mere elongated form thereof; but a sufficient difference may be discovered in its attenuated character, and also its tenacity. It is this latter character which renders it suitable to be manufactured into linen, the strength of which, as compared with that of cotton fabric, which latter is mere cellular tissue, consists solely in the tenacious character of woody tissue. There are three distinct kinds of woody tissue, of which the finest and most common, as well as most genuine, is *destitute of granules* adhering to the sides of the tubes; another form of woody tissue *has these appendages*, and approaches near the character of vasiform tissue; whilst a third kind, termed the *glandular*, is almost exclusively confined to the stems of *Coniferae*. This latter differs from *granular* woody tissue, in the markings of the tubes being vesicular, and usually trans-

parent, with a dark centre, whereas the supposed pores of granular tissue have a solid appearance, and are perfectly opaque. Woody tissue constitutes the greater proportion of the ligneous part of all plants; it is common to the bark, and forms a considerable portion of the veins of leaves, to which it gives firmness and tenacity.

Besides these elementary parts, there exists also in plants certain organs, which are composed of similar forms of tissue: these are termed *intercellular passages*, *receptacles of secretion*, *air-cells*, and *raphides*.

INTERCELLULAR PASSAGES are the spaces formed by the imperfect adhesion of the vesicles of cellular tissue. They vary in form according to the pressure of the cells; thus, if this be very regular, the spaces will be very small or altogether obliterated, whilst, on the other hand, if the pressure is strongest in any particular direction, the spaces will become horizontal, vertical, or oblique, according to the direction of the angles of the cells. Their size also varies considerably, for in plants of a dry or rigid character they are frequently very small, whilst in those of a more succulent nature they are so large as to present the appearance of cells; in aquatic plants they are generally very large in the horizontal partitions, which separate the air-cells, and have been supposed to act as passages for the ready access of air from one to another.

RECEPTACLES OF SECRETION are the intercellular passages in a state of distension by the accumulation of proper sap, which, when unusually increased, ruptures the coats of the adjoining tissue, and by this means the cavities are formed. In some plants these are tubular; in *Coniferae* they are very irregular in figure, and even in position, chiefly forming hollow cylindrical spaces in the bark. Those contained in the rind of the orange and lemon are oblong and spherical; from their situation they are easily examined, and give an accurate idea of the organ.

AIR-CELLS are another kind of intercellular passages, similar to the last, but, instead of being filled with the juices of the plant, these contain only air. This is provided for by their construction: in the former (that is the receptacles), the orifices of the cells are all open, and thus the juices drain readily from one to the other, whilst in the latter they are closed up, except in the partitions which divide them from each other, and thus the discharge of fluid into them is prevented. They cannot be re-

garded as mere accidental distensions of tissue, by reason of the uniformity and beauty of their construction in the individual species in which they are found. In instances where their presence seems to be indispensable to the life of the plant, they are internally uniform and smooth, whilst in others, where they do not appear to be essential, as grasses, umbelliferous plants, and some others, they are of irregular surface and figure, owing, probably, to the rapid growth of the stem, by means of which the tissue is rent asunder.

RAPHIDES are certain needle-shaped transparent bodies, existing among the tissue; they were first discovered in the milky juice of *Euphorbia*, and subsequently in other plants. If a common Hyacinth is wounded, a considerable discharge of fluid takes place, and in this fluid myriads of slender raphides are found floating. In some plants, instead of being of a circular form, they exist as minute conglomerated crystals.

The general properties of the elementary organs of plants are, *elasticity, extensibility, contractility, and permeability*. The first gives to plants the power of bending to the breeze, and of vibrating without rupture; the second enables them to develop with great rapidity whenever such is requisite; the third enables any parts which may have been overstrained to recover their natural position when the disturbing cause is removed, and also causes the mouths of wounded vessels to close, and thereby prevent the loss of their contents; the last secures the free communication of the fluid to every part of the vegetable structure which has not become indurated by earthy depositions.

The CELLULAR TISSUE is the most important constituent of plants, as we may readily infer from its being the most abundantly and uniformly present, and also by its being the principal constituent of those compound organs, to which the preservation of the species is specially allotted. It may be regarded as the flesh of vegetable bodies, the substance which surrounds and keeps all the ramifications of the vascular system in their proper place: it is also the first which is generated in the case of wounds, or the developement of new parts; thus, the granulations at the base of a cutting or between the edges of two rings of the bark are cellular tissue. It transmits fluids in all directions, notwithstanding that the sides of the cells possess no visible pores; for in many plants no other tissue exists, and yet a circulation of sap goes on, and life is maintained. The medul-

lary rays which convey the elaborated fluid from the bark to the centre of the stem, and the parenchyma in which the sap is diffused on entering the leaves, are both composed of it: nearly all the bark, in which the downward current of the sap takes place, is also cellular; and in endogenous plants, where no true bark exists, there is no other course for the descending sap than the cellular substance in which the vascular system is imbedded; it is therefore permeable to fluids, though it does not possess visible pores. It is the substance from which the leaf-buds are generated, for these organs always originate from the medullary system, of which it is the entire component. Fertilisation appears to take place exclusively through its agency, for the coats of the anther, the tissue of the stigma, the ovules with their sacs, and the pollen itself, are all cellular, the vivifying particles of the latter being composed of the same kind of matter in a more minutely divided state. It is, moreover, the only tissue in which saccharine and amylaceous secretions are formed. When collected into hollow cylinders, as vasiform tissue, it serves for the more rapid transmission of fluids in the direction of the stems; and the size of these is usually in proportion to the distance to which it has to be conveyed.

The nature of the functions of the VASCULAR SYSTEM has been the source of much difference of opinion. *Spiral vessels* have been supposed to be destined for the transmission of air, and it seems almost difficult to believe that a vegetable anatomist can doubt the fact; nevertheless Dutrochet and others assert that they serve for the transmission of fluids. Bischoff, who has instituted many ingenious and delicate experiments, with a view to the determination of this point, has arrived at the conclusion, "that plants, like all other living bodies, require for the support of their vital functions a free communication with air, and that it is oxygen most especially which, when absorbed from the soil by the roots, renders the crude fluid fit for the support and nourishment of a plant, just as blood is rendered fit for that of animals; but for this purpose, it is not sufficient that the external surface should be surrounded by the atmosphere; aëriferous channels are provided in the form of spiral vessels, placed internally, and which convey air containing an unusual proportion of oxygen, obtained through the root from the earth and water by its own vital force." "With such evidence," says Dr. Lindley, "of the aëriferous functions of the spiral vessels,

it is difficult to contend ; and, indeed, it seems probable that the question, as far as proper spiral vessels are concerned, is settled. Whether or not *ducts* have a different function is uncertain ; it is, however, probable, from the extreme thinness of their sides, that they are really filled with fluid when full grown, whatever may have been the case when they were first generated." The *air-cells* in such plants, as they appear to form part of the vital system, as in water plants, are regular cavities of cellular matter, intended to enable the plants to float in the water : in other cases, as in *Umbelliferae*, *Gramineae*, &c., where they do not appear to be essential to vitality, they are mere ragged distensions of the tissue, caused by the growth of one part more rapidly than another.

WOODY TISSUE appears to be applied to the conveyance of fluids, both upwards and downwards, from one end of the body to the other, until it becomes choked up by the deposit of earthy matter, and the natural secretions of the plant. The late Mr. Knight was clearly of this opinion, but Dutrochet regards them merely as downward channels. The power possessed by cuttings of forming roots, and establishing themselves, seems to afford strong evidence in support of Mr. Knight's opinion. This tissue gives firmness and elasticity to every part of the plant in which it is found ; its surprising tenacity, and the admirable manner in which it surrounds and protects the vascular system, which in itself has no stability, are strong proofs of these properties. It is also the tissue whence the roots originate ; for whilst leaf-buds, and all their modifications and appendages, are always generated in and proceed from the cellular tissue, the formation of roots always results from an elongation of the woody tissue : this may readily be seen by tracing a young root to its origin.

(*To be continued.*)

LIST OF NEW PLANTS.

MYRTACEÆ.—*Monadelphina Polyandria*.

Barringtonia speciosa. Cultivators will be pleased to find that this noble plant, which is chiefly known in our stoves for its very handsome foliage, and for the alleged difficulty of growing it well, has produced its remarkable inflorescence in the stove of Colonel Baker, at Salisbury. Mr. Dodds, gardener to Colonel B., says—“ It is a stately tree, which grows plentifully towards the coast of many of the islands in the Southern or Pacific Ocean, as well as in various parts of India, China, and Indian Islands. The bark is

ash-coloured; the branches are numerous and spreading; the leaves are often more than a foot in length, of a strong and firm texture, with a lucid surface, and of a beautiful bright green. The flowers are numerous, large, and white, with a vast number of stamens of a deep sanguineous purple; they are produced from the upper parts of the branches, and blow chiefly in the evening, falling off the next morning, and are followed in succession by others. It is a plant of easy growth, likes plenty of moist heat, abundance of water in the growing season, and a little bottom heat. The plant we have now bloomed was four years old last March. It was topped a year ago last March, and kept without a drop of water from November till the middle of March: it was then started into growth. About the beginning of May it had made shoots a foot or more in length; when I turned it out of the pot, shook nearly all the soil away, and cut back the roots; then potted it into a 12-inch pot, in a mixture of charcoal, loam, sand, and peat; and on the 4th of the following month (June) it threw up a fine spike of flowers. It is highly fragrant."—*Pax. Mag. Bot.*

LEGUMINOSÆ.—*Decandria Monogynia.*

Oxylobium obovatum. A very pretty species, with dense heads of bright orange and red flowers. It was introduced from New Holland about two years ago, by Mr. Low, of the Clapton Nursery. The species seems to be almost as good as *O. retusum*, and much superior to *O. capitatum*.—*Pax. Mag. Bot.*

CACTACEÆ.—*Icosandria Monogynia.*

Epiphyllum Russellianum. With somewhat of the habit of *E. truncatum*, this species is perfectly distinct, both in the appearance of the leaves or foliaceous branches and also in the colour of the flowers; the former are more decidedly chain-like, having the parts between the joints more regular and less flattened. The flowers differ in having the violaceous tint not upon the crimson scarlet, as in the other species, but really mixed with the crimson in the texture of the flower, so as to produce one uniform colour. Unlike *E. truncatum*, it blossoms at various seasons under the same treatment, and is commonly seen in flower from October till May. It was found by Mr. Gardner on the Organ Mountains of Brazil, and named after the late Duke of Bedford.—*Pax. Mag. Bot.*

SCROPHULARIACEÆ.—*Diandria Monogynia.*

Veronica speciosa. With much of the aspect of *Lisianthus Russellianus*, this fine Speedwell constitutes a robust-growing shrub, decidedly evergreen, with an abundance of neat leaves, and an extraordinary number, as well as succession, of densely-clothed flower-spikes, which are about three inches in length, and bear deep-blue blossoms, that fade away to white before they fall. It is a particularly clean, healthy, and compact object, not rising, apparently, above a foot or a foot and a half in height. Mr. Knight, Nurseryman, of the King's Road, Chelsea, received it from Mr. Egerly, who brought it from New Zealand in 1841. The flowering plant has been kept in a very cool part of the stove, and any kind of pruning has been carefully avoided. It is potted in a light, open compost full of fibre, and a moderately large pot. Other younger plants are looking perfectly healthy in a cold greenhouse.—*Pax. Mag. Bot.*

RUTACEÆ.—*Polyandria Monogynia.*

Diplolepis Dampieri. A singular rutaceous plant, with flowers collected into a capitulum, like the *Compositæ*, but which, when examined, exhibit a very different structure. These flowers are fully produced in the greenhouse in the month of May, and have a very pretty appearance among the rather gloomy foliage: the prevailing colours are red and yellow. It is a native of Western Australia.—*Bot. Mag.*

PLUMBAGINEÆ.—*Pentandria Pentagynia*.

Statice rhytidophylla. This, it appears, is the correct appellation of the plant so well known in gardens as *Statice Dicksoniana*.—*Bot. Mag.*

ORCHIDACEÆ.—*Gynandria Monandria*.

Cirrhopetalum auratum. Among the singular species of this genus the present is one of the most interesting.—It hangs down from the branch of a tree or a piece of charred wood, which it soon overruns with its delicate green roots and egg-shaped furrowed pseudo-bulbs. The leaves are very thick, deep green above, and convex; stained with purple beneath. The flower-stem is as slender as a small thread, and too weak to bear the umbels of flowers, which therefore hang down gracefully and are balanced in the air. The umbels, as in many others of this genus, are so arranged that the flowers are all on one plane, and, diverging equally from the centre, form a circle whose interior is occupied by the lower part of the flowers, and whose circumference is formed by the long, flat, strap-shaped, lateral sepals, which look like so many parti-coloured ribbons collected into a balloon.—The upper sepal and two petals are fringed with golden hairs, and taper into a fine point; the lateral sepals are quite destitute of hairiness, and only faintly stained with purple. It differs from *C. picturatum* in its parti-coloured, not purple flowers, in its petals being far less taper-pointed, and not villous, and in the lip not having a central ridge, which is conspicuous in *C. picturatum*. A native of Manilla, whence it was received by Messrs. Loddiges. Like many species of *Pleurothallis*, *Stelis*, &c., this requires a humid atmosphere in winter as well as in summer; but it should always be remembered, that the more light and heat, the more water is required.—*Bot. Reg.*

DILLENIACEÆ.—*Polyandria Trigynia*.

Hibbertia perfoliata. This is really a beautiful Swan River shrub, particularly well adapted to pot culture on account of the neatness of its appearance at all seasons. According to Baron Hugel, it has a tendency to climb, but that has not been observed in our gardens. When it first flowered, it was of one uniform glaucous hue, almost as much so as the fruit of the plum when ripe and covered with bloom; but that appearance has gone off, and the foliage is now of a deep rich glossy green, while the beautiful yellow flowers are as large and showy as in the old *H. volubilis*; they are quite free from the offensive smell of that species. In the garden of the Horticultural Society it proves to be a greenhouse shrub requiring the same treatment as many other New Holland plants.—*Bot. Reg.*

ORCHIDACEÆ.—*Gynandria Monandria*.

Oncidium bicolor. This charming species of *Oncidium*, one of the rarest of its genus, was obtained by Messrs. Loddiges from the Spanish Main. It flowered with them in September, 1842. Among other peculiarities of the species may be mentioned its very thin pseudo-bulbs, and 3-lobed crest of the labellum, the front lobe of which projects forward, while the laterals are at right angles to it and slightly toothed. It has, moreover, a very large lip, which, although deep clear yellow on the upper side, is almost white beneath. Its nearest affinity is with *O. bifolium*.—*Bot. Reg.*

CALENDAR FOR JANUARY.

STOVE. At this season of the year, when all is dark and dreary without, our once verdant trees dismantled and our par-

terres deserted, the inmates of our stoves and greenhouses afford us a cheering onward impulse, and seem as a link to connect the floral seasons of the past and the future. There is, however, but little scope for aught else than admiration of the beauties which, heedless of the dreariness around them, still blossom on : the operations on which this pleasing sensation is dependent are past, the flowers we now admire are the record of them, and faithful witnesses they are, attesting the degree both of our tact and our talent in the arts of cultivation. There is not perhaps a single feature in the cultivation of plants during the winter, in which the amateur is more likely to err, and by reason of which a greater amount of injury is occasioned, than in the application of water, either in its fluid or vaporous state : if applied directly to the soil in great quantities, the roots, being at this season inactive, are certain to sustain more or less of injury ; and if it is applied in excess to the atmosphere, in the form of vapour, the exhalations from the leaves of the plants will thereby be checked, in consequence of the density of the medium which surrounds them ; in either case the plants will materially suffer. It is difficult to give precise rules for the performance of operations such as this : as a general principle, however, with reference to plants in pots, no more ought to be given at the root than is sufficient to sustain the vital energy of the plant. And barely any more should be supplied to the atmosphere, than arises from the evaporation troughs on the hot-water pipes : none should be applied by the syringe. A succession of forced flowers should be maintained by introducing a few about once in a fortnight. Roses, Lilacs, Rhododendrons, &c., may be added now to the bulbs and herbaceous plants of last month.

The temperature in all plant structures ought to be comparatively low, in this department ; from 60° to 65° by day, and from 55° to 60° at night, will still be sufficient.

GREENHOUSE. The foregoing rules respecting moisture apply here also, except that in the generality of cases, it is not advisable to make so free use of evaporating troughs as in the stove, for, in consequence of the lower degree of temperature which is maintained, the atmosphere cannot hold so great an amount of aqueous matter, in a state inappreciable to the outward feelings.

The management in both houses may be summed up thus :—avoid the application of stimulants ; maintain, if possible, all pre-

vious growth, but seek not to add thereto till the proper season arrives. An average temperature of 45° will be sufficiently elevated.

The FLOWER-GARDEN will now be desolate, unless some means have been devised to supply the place of the summer flowers: perhaps there is no better plan than to keep a supply of *small* evergreens in pots, which might be done with but little trouble, and these may be plunged into the beds when the flowers are removed. They ought in all cases to be kept together, in masses of the same kind of plant, as being far preferable, in point of taste, to an indiscriminate mixture. No plant is better adapted for this purpose than the dwarf British Furze (*Ulex nana*), which flowers so universally throughout the winter, that love is said to be out of date when furze is out of bloom. Other plants adapted for the same purpose are, *Aucuba japonica*, *Buxus sempervirens suffruticosa* (*dwarf Tree Box*); *Ilex Aquifolium* (*Holly*), green and variegated varieties; *Phillyrea*, several species; *Erica*, the hardy species; *Berberis Aquifolium*; *Cistus*, several species; *Ledum* or *Leiophyllum thymifolium* and *L. palustre*; *Vinca major*, (*Perri-winkle*); *Prinos glaber* (*Winter berry*); *Daphne pontica*, *D. collina*, *D. Gnidium*, and *D. cneorum*; *Garrya elliptica*; *Pinus pumilio* and its varieties; *P. Cembra pygmæa*; *Cupressus* and *Juniperus*, several species; *Ruscus aculeatus* (*Butcher's broom*); *Araucaria imbricata*; *Yucca filamentosa*, and *Y. recurvifolia*. A selection made from plants similar to these, and arranged so as to combine a pleasing variation with harmony of effect, would supply all that could be desired.

Plants in frames, intended for bedding out in summer, require especial attention, to guard against both damp and frost: such plants should receive the full influence of the air at all times when it can be admitted to them without risk; and they should be kept dry as possible, never watering them except when it becomes absolutely necessary, nor taking off the sashes in damp weather: coverings sufficient to exclude frost should be duly applied, and these should be elevated a few inches from the glass, so as to enclose a space beneath them, which will serve as a powerful non-conductor. In the event of very severe weather tulip beds, and also those of ranunculus and hyacinths, will require covering. Auriculas, polyanthus, picotees, &c., the same as last and previous month.



PETUNIA PUNCTATA

THE
FLORIST'S JOURNAL.

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FEBRUARY, 1844.  
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THE PETUNIA.

WITH AN ENGRAVING OF *P. PUNCTATA*.

THE Petunia has been, from the first year of its introduction to British collections, a general favourite; its easy management, robust character, and copious blooming, have ever rendered it desirable for all the purposes of embellishing either conservatory, greenhouse, or flower garden; it is, however, needless to insist on claims which are everywhere conceded, we therefore pass on to a slight sketch of the history of the genus, and thence to its cultivation.

The name Petunia is derived from the Peruvian word *Petun*, a name for tobacco, because of the affinity of this genus with *Nicotiana* (see Vol. IV. p. 217.) The first species we have recollection of is *P. acuminata*, which came from Chili about 1826, after it in 1823, *P. nyctaginiflora*, or as it was then called *Nicotiana nyctaginiflora*, from South America. This curious little species is still very generally grown, though rather more difficult to preserve in good health than any other of the genus; this was followed by *P. violacea* in 1830, from Buenos Ayres; and so uncertain were the distinguishing characters of the plant, that it was called, beside the name we employ, *P. phœnicea*, and it was also proposed to unite it with the new genus *Nierembergia*, while by others it was referred to *Salpiglossis* as *S. integrifolia*; it is now, however, universally known as a Petunia. From the introduction of this species may be dated the origin of the many hundreds of seedling varieties which have annually appeared, and as regularly been eclipsed by some more recent production.

an immense flower of a rosy crimson colour ; but even this, true as it is, must yield to our present illustration, *Punctata*. Nothing we have ever seen possesses half its beauty, with an outline the most perfect is combined a great thickness in the petal, which imparts to the flower an appearance of velvet ; the colours, too, and their disposal are perfectly distinct from any previous variety. The rich rose blotches on a field of clear bright blue render it quite unique. It was obtained from seed last season by Mr. Miller, Nurseryman of Ramsgate, who informs us he has been fortunate in raising also some other desirable varieties of *Petunias*, besides *Fuchsias*, *Verbenas*, &c., which we shall probably have occasion to notice in a future Number.

The cultivation of the genus is so simple and requires so little of what may be called "tact," as to place them within the command of the smallest grower. If healthy plants are purchased in the spring, they may be increased to any extent through the summer months, by inserting cuttings under a small hand-glass upon any shaded border ; and but few plants may be kept with greater ease in the sitting-room window. But it is to their culture from seed we intend to direct our remarks ; and for this purpose a good-sized, well ventilated melon-pit or greenhouse is necessary ; it may be done in either, though we think the pit preferable, because the plants, naturally impatient of heat, may here have a larger proportion and be in more immediate contact with the fresh air, and for the greater facility of covering, uncovering, shading, watering, &c. A difficulty is generally experienced in procuring sound, well ripened seed ; this is attributable to our variable and often dull wet summer. The plants being natives of the clear bright sunny regions of South America, have not the natural and necessary space of dry

We will suppose a collection to be formed of strong healthy plants, and containing some of the best sorts. About the beginning of April they should be placed in large pots, with any light rich soil, such as a mixture of leaf-mould loam, and decayed hotbed manure ; there should be sufficient of this earth in the pots to sustain the plants throughout the following summer, without being again shifted. Petunias frequently commence blooming about the beginning of May; the first flowers may be taken advantage of to decorate the greenhouse or other place, as it is not these that are to be depended on for the production of seed, but such as appear about the commencement of the settled weather of June or July ; at this time the plants should be taken to the pits, the better to protect the flowers from occasional showers and other moisture ; in this situation they require an abundant supply of water and air, with free exposure to bright sun-shine so long as they will bear it,—which they will do to any extent (if regularly watered) until the roots have entirely filled the pots. Should it happen that cloudy weather prevails, advantage of every gleam of sun-shine should be taken to assist the plants by artificial fertilizing; but in anything like the average summer weather this will not be required, as the plants themselves, assisted by insects, will perform the operation ; after the seed is set, it will only be necessary to keep the head of the plant dry, that moisture may not lodge in the capsule, and so destroy it ;— each pod of seed should be gathered as it becomes ripe, and the whole kept in the usual way until the season for sowing, which we recommend to be the early part of March, a slight hotbed, such as is

usually employed at this part of the year for raising tender annuals, will be necessary on which to sow the seed; and as soon as they are large enough to handle, let them be potted singly into small pots, continuing them in the frame until grown sufficiently to bear removal to the greenhouse, here with the usual attention to repotting, &c., they will produce flowers almost as early as mature plants, and according as any improvement or degeneration is observable they should be preserved or rejected,—the best to be increased by cuttings, which root readily at any time in sandy mould on a gentle bottom heat,—and the remaining portion may be turned into the beds of the flower garden. We have generally observed the white and pale-coloured varieties exhibit a much less tendency to produce other varieties than those of a deeper shade.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Association.

(Continued from page 16.)

VEGETABLE PHYSIOLOGY: the COMPOUND ORGANS.

By Mr. T. MOORE.

THE parts we have been previously considering are called *elementary organs*; but there are others to which we must now direct our attention, and these are designated the *compound organs* of plants. It will be desirable, in the first place, to notice some of these, which are general to almost all parts of plants; they are, the *cuticle*, and its appendages.

The *CUTICLE* itself is a thin and extremely delicate membrane, composed of parenchyma, the vesicles of which are compressed into a firm state of cohesion. It is not, therefore, as some suppose, a peculiar membrane, but a form of cellular tissue, which covers all those parts of plants which are exposed to the air, except the stigma, and the spongioles of the roots; and is as constantly absent from any parts of plants which are habitually under water. It appears to the naked eye like a transparent homogeneous skin; but it is by the aid of a microscope that it is seen to be cellular tissue in a compressed form,

with lines traversing it in various directions, and which, by anastomosing, give to it a reticulated appearance: the most usual form of this reticulation is hexagonal; but it is sometimes marked by sinuous lines, having no determinate figure.

On the exact nature of the *cuticle* botanists are not agreed: some incline to the opinion that it is a peculiar membrane traversed by veins, and the irregularity of the sinuous lines, by which it is sometimes marked, are considered as strongly supporting this view; such irregular figures being considered to be at variance with the notion of its being an adhesion of vesicles of cellular tissue: others, regarding it to be a form of cellular tissue, contend that the irregularity of the reticulations, or supposed lymphatic vessels, is nothing more than is observed in a section of any portion of cellular tissue. In answer to the argument, that on the removal of the cuticle the subjacent tissue dies, instead of becoming cuticle, it is maintained that this is no reason why itself should not have originally been composed of a cellular tissue; and, as regards the non-formation of cuticle, by the change of the tissue immediately beneath the original covering, it is an axiom in physiology, that a part once fully formed is incapable of any subsequent change whilst in a living state; thus, a zone of wood never contracts or expands after it is deposited, though new matter may be added to any part. The arrangement of tissue, when it once becomes fixed, continues, therefore, unchangeable as long as it is maintained by the vital force. It may further be remarked, that separable cuticle may often be traced to that which is younger, and inseparable from the other cellular substance with which it is in contact, and from which it possesses no organic difference.

The cuticle is generally perforated by small openings, and these are termed *STOMATA*, or pores; by some they are regarded as imperforated glands, whilst others regard them as openings connected with respiration. They are composed, in some of the species of *Crinum*, of two elastic kidney-shaped bladders, which lie over an opening of the cuticle, and are pressed together by the action of two opposing springs, by whose contraction the pores are opened. They are not found on mosses nor on fungi, on algæ nor on lichens, on submerged plants nor on plants growing in darkness, on roots nor on the ribs of leaves; they are frequently found on one surface of a leaf, but are absent from the other; they may generally be seen on the

calyx, often on the corolla, and rarely on the filaments or style. Brown is of opinion that the two glands, or rather bladders, of which a stomate is composed, are each analogous to the single bladders found occupying the inner face of the meshes of the cuticle.

The surface of the cuticle is either smooth or furnished with numerous processes or appendages, which originate either from the cuticle or the cellular substance beneath it, and are entirely independent of the vascular and ligneous systems; these are, *hairs*, *scurfiness*, *glands*, and *prickles*. **HAIRS** are minute transparent cellular bodies, formed either of a single cell of tissue or of several placed endways in a single series; they are not found on true roots, except at the time of germination, nor upon any parts of the stem that are formed under ground or that grow under water. They are of two kinds, namely, *lymphatic* and *secreting*; the former taper gradually from the base to the apex, the latter are visibly distended into receptacles of fluid. The various parts of plants, when clothed or furnished with hairs, are described as being downy, pilose, villose, tomentose, ciliated, bristled, stinging, hispid, silky, arachnoid, rough, bearded, and stellate, to which might be added other terms, chiefly modifications of the above. **SCURFINENESS** is of two kinds: *scurf*, properly so called, is the small, roundish, flattened particles which give a leprous appearance to the surface of plants; *ramenta* are thin brown foliaceous scales, sometimes abounding on young shoots, especially the backs of the leaves of ferns: both of these consist of thin flat membranous processes, formed of cellular tissue springing from the cuticle. **GLANDS** are small collections of firm cellular tissue, formed for the purpose of secreting the juices of the plant; they are known by the terms stalked, sessile, and lenticular glands, papillæ, &c. **PRICKLES** are rigid opaque processes, formed of cellular tissue, and terminating in a point, which becomes indurated. They have no connexion with woody tissue, by which character they are obviously distinguished from spines. They are found on all parts of plants except the stipules and the stamens; rarely on the corolla: their most common position is on the stem and the petiole of the leaf.

THE STEM.

When the vital action of a seed is excited the tissue becomes developed in three directions; namely, upwards, downwards, and horizontally. That portion which elongates downwards is called the *descending axis*, or *root*; that which lengthens upwards is the *ascending axis*, or *stem*; that which extends horizontally is called the *medullary system*; and the part whence all these axes start is called the *neck*, or *collum*. The descending axis is characterised by its avoidance of light, and by its penetrating the soil; from it are produced the fibres or feeding points: the ascending axis, on the contrary, is constantly striving to expose all its parts to the influence of light, and from it are developed, according to fixed laws, the leaves, and their appendages, as well as all the modifications in which these appear. As this mode of development is common to all plants, it follows that, during the earlier stages of growth at least, they all have these parts; and, therefore, when a plant is described as being rootless or stemless, such terms are not to be regarded as being physiologically correct.

The ascending axis, or STEM, demands our first consideration. The stems of plants are of two distinct kinds, and of each of these there are numerous modifications.

Subterranean, or *underground stems*, are such as are very commonly called roots, from which, however, they essentially differ in their ascending tendency and origin, as well as by their structure. Of these, we have the *cormus*, which is the dilated base of the stem in some monocotyledonous plants; it is composed of cellular tissue traversed by bundles of vessels and woody fibre, and has the form of a flattened disk; the *Crocus*, *Colchicum*, and *Arum* afford examples of this kind of stem: the *tuber* is an annual thickened stem, provided with buds, from which new plants are produced: in some varieties of potato, as, for example, that called the pineapple, the position of these buds indicates the real nature of the body on which they are produced; whilst in others the excessive development of cellular tissue renders them shapeless masses, and their origin is less perfectly portrayed: the *creeping* stem is exemplified in the couch grass, the horizontal underground stems of which are vulgarly termed roots; it differs from the *rhizoma* only in being subterranean.

Aerial, or *aboveground stems*, are also of various kinds. The term *stem* is usually applied to the ascending axis of annual and herbaceous plants and shrubs, whilst the stem of trees is termed the *trunk*; the *runner* is a slender prostrate stem, forming leaves and emitting roots from its extremity, as in the strawberry; it may be rightly regarded as a prostrate viviparous scape, that is, a flower-stem, in which the "germ of extension" becomes developed as leaves instead of blossoms; the *sucker* is a branch proceeding from the neck of a plant, beneath the surface of the soil, becoming such as soon as it emerges from the soil, and producing leaves, branches, and roots; the *offset* is a short lateral branch produced in some herbaceous plants, as in *Sempervivum*, and but little differing from the runner; the *rootstock*, or *rhizoma*, is a thickened rooting stem, which annually produces young branches and leaves; the *vine* is a stem trailing on the ground without rooting or entangling itself with other plants, as in the cucumber; the *pseudo-bulb* is an enlarged aerial stem, resembling a tuber, but differing in being formed above ground, in having a cuticle often extremely hard, and in retaining the scars of leaves which it once bore. Besides these there are several other modifications of stems to which terms of distinction are applied, but which I have not space to notice more fully. Some plants are apparently destitute of a stem, and such are technically termed "stemless." This, as has been previously remarked, is not strictly correct, as plants cannot exist without a stem: in these cases, however, it is extremely short.

Branches are caused by the development of buds, or *gemmæ*, from the stem; and they may therefore be regarded as lateral extensions of the axis. The buds from which branches are developed are formed for the most part at the node, that is, the part of the stem from which the leaves arise, and branches should, consequently, have a disposition around their axis, similar to the leaves themselves. This is not, however, practically found to be the case, owing to the non-development of many of the axillary buds, and also to the occasional development of buds from the internodes. Although buds are formed at every node in the angles formed between the base of the leaves and the stem, yet they are not developed until they are influenced by the force of the vital action of the plant; and it is from this cause that the irregularity frequently to be observed in the distribution of branches proceeds; an instance of this

occurs when young branches sprout from the old stems of trees. Branches are themselves capable of developing buds from their axis in a similar manner to the stem; and hence the lateral extension of plants is entirely indeterminate. *Leaf-buds*, or *gemmae*, consist of scales imbricated over each other, surrounding a minute cellular axis, or *growing point*, which originates in the pith, and is in direct communication with the woody and cellular tissue of the stem. They have a special power of extending in length, and are generally clothed with leaves as they advance, and thus become branches; but in some cases they harden as they extend, and sharp conical projections are formed, which are called *spines*; these manifest their origin by frequently bearing leaves and even buds, as in the genus *Cratægus*, and they must not, therefore, be confounded with *prickles*, which have been previously noticed, and are mere external concretions of hardened cellular matter. Spines are in direct communication with the interior of the stem, and have a considerable quantity of woody tissue in their structure. The manner in which the young leaves of plants are folded up in these leaf-buds is called their *vernation*, or *foliation*; and it is a point of considerable importance in systematic botany.

As regards their internal structure, vascular stems may be separated into two principal kinds, which are termed **EXOGENOUS** and **ENDOGENOUS**. The stems of exogenous plants are characterised by a central cellular substance, called the *pith*; a series of vessels surrounding this, called the *medullary sheath*; external cellular and fibrous rings, called the *bark*; an intermediate mass, termed *wood*, consisting of woody fibre; and certain thin plates, radiating from the pith to the bark, through the wood, called *medullary rays*. The stems of endogenous plants are known by having neither bark, nor wood, nor pith, nor medullary rays, distinguishable, but are composed of vasi-form and vascular tissue, embedded in cellular and woody tissue. The stem of cellular plants is composed by the union of the bases of the leaves, and is increased by additions to the point of its axis, or by simple elongation or dilatation; this kind of stem is called **ACROGENOUS**.

In the stems of exogenous plants the *pith* is almost exclusively composed of cellular tissue, though, in some few instances, De Candolle and Mirbel have discovered woody fibres; and also in *Nepenthes* a considerable quantity of spiral vessels have been

found in it. The *medullary sheath* consists of spiral vessels, immediately surrounding the pith, from which it diverges whenever a leaf is formed; and thus it is in direct communication with the leaf-buds and the veins of the leaves, and establishes a connexion with the axis, and its appendages, which in all cases are prolongations of it. The *wood* lies on the medullary sheath, and consists of annually deposited concentric layers, formed by the successive adhesion of the descending fibres of the buds, and by the interposition of the medullary rays, connecting the pith and the bark: these layers consist of woody and vasiform tissue, either in distinct strata, the woody tissue being outermost, or intermingled together, and nearly obliterating the appearance of zones: when the tissue of these layers becomes filled with secretions it ceases to perform vital functions, and in this fully-formed state is called *heart-wood*; if in a living state, and imperfectly formed, it is called *alburnum*. The *bark*, or external coating of the stem, when but one year old, consists of a cellular integument, called the cuticle or *epidermis*, already noticed, and an internal lining of woody tissue, called the *liber* or inner bark: similar layers of cellular integuments and woody tissue are annually formed, internally with respect to the existing bark, and therefore in contact with the wood. The *medullary rays* consist of thin plates of cellular matter connecting together the tissue of the trunk: the cellular matter in this form is termed muriform. Between the bark and the wood, in the spring, there is interposed a viscid matter, called *cambium*, which, when magnified, is observed to consist of transparent granules of cellular organisation, and which is supposed to be destined to afford a proper pabulum to the descending fibres of a bud; in all probability it is the organising matter in which the cellular tissue of the medullary sheath is engendered.

The functions of the *stem* are to bear the leaves and other appendages of the axis, and to expose them to the action of light and of the atmosphere; to convey fluids both from the root upwards, and from above downwards; and to store up the peculiar secretions of the plant. The *pith* has had various functions assigned to it, analagous to those of the brain, the lungs, the stomach, the nerves, and the spinal marrow, in animals: its real use is probably to serve as a receptacle for the sap during the infant stages of growth, by means of which the tender vessels surrounding it gain their nourishment. The

medullary sheath seems to be very important, as, by its being cut through, the vitality of the plant above the incision is destroyed, although the bark, the pith, and the wood may be removed, and yet vitality may be maintained: it may be supposed that its office is to convey oxygen to parts inaccessible to the external air, and parting with it to the carbon of such parts, to produce carbonic acid; without the power of composing and decomposing which no part of a plant exposed to light could long exist. The *wood* is at once the support of all the deciduous organs of respiration, digestion, and fertilisation; the deposit of secretions peculiar to individual species; and the reservoir whence the newly-formed parts derive their sustenance until they can establish communication with the soil. The *bark* acts as a protection to the young wood, and is also a medium in which the proper juices are finally elaborated in their descent, and by it they are horizontally communicated to the medullary rays, and by the latter deposited in the tissue of the wood: when young it is green like leaves; and the late Mr. Knight concluded that it exercised an influence on the fluids deposited in it, wholly analogous to that exercised by leaves: hence it has been named the "universal leaf of vegetables." The *medullary rays* no doubt maintain a communication between the bark, in which the secretions receive their final elaboration, and the centre of the stem, where they are at last deposited.

The vascular system in exogens is confined to the space between the pith and the bark; it exists in immediate contact with the former, consisting, as already observed, of spiral vessels, forming a layer, called the medullary sheath. In the stems of endogenous plants the vascular and cellular systems are as distinct as in exogens; but, instead of being distinguishable into several parts, the cellular system is a uniform mass, in which the vascular system is embedded in the form of thick fibres, having no tendency to collect in zones or wedges resembling wood. It is supposed to increase in diameter by the additions of fresh bundles of fibres, or vascular tissue, in the centre; whilst in exogens the increase takes place between the bark and the wood, and, consequently, at the circumference.

This part of the subject (which is an important one) might be extended to a much greater length, by entering into the

theoretical and speculative arguments of botanists respecting the structure of the stem ; but in a mere general outline, such as this, neither space nor time will admit.

THE ROOT.

At the time of germination, when the stem is developed, and seeks the light, the descending axis, or the root, is developed in an opposite direction. This organ in its internal structure differs but little from the stem, excepting that its cellular substance is frequently subject to an extraordinary development. Independently of its origin, the root is to be distinguished from the stem by its ramifications occurring irregularly, and not proceeding from fixed points, as the buds of branches do, but from any indeterminate point: the root does not produce leaf-buds, except it be, in some cases, what are termed *adventitious buds* ; and the irregular manner in which these are produced afford sufficient evidence of their origin: neither has it any scales, leaves, or other appendages, all underground bodies on which such have been found being in reality stems, by whatever name they may have been called. The only appendages roots have are little hollow floating bladders, such as occur in *Utricularia*: they have no stomates on their cuticle; and in exogens they have no pith, thus being clearly distinguished from the stems in this division of plants.

The body of the root is termed a *candex*, whilst the minute ramifications are called *fibrils*: these latter are little bundles of annular ducts, or spiral vessels in connexion with the vascular system of the root; and their apices, technically called *spongioles*, consist of extremely lax cellular tissue and mucus: these spongioles have the property of absorbing fluids; and hence they are sometimes regarded as the mouths of plants, though they may more properly be regarded as being analogous to the lacteals of the stomach. Some roots are fleshy, and divided into lobes, as in *Orchis* and *Dahlia*: these have been called *tubers*; but that term is erroneously applied to them, tubers being underground stems, and not roots. Such fleshy roots appear to be intended as reservoirs of nutriment, and may be not improperly termed *tubercles*.

The office of the root is well known to be that of absorbing nutriment, and transmitting it to the stems and leaves; for, although moisture is, without doubt, absorbed also by the leaves

and the bark of all plants, yet the greater part of their food is as certainly taken up by the roots. They do not, however, absorb nutriment by their whole surface, but it is to the spongioles almost exclusively that this office is confided; and hence arises the importance of preserving them in the process of transplantation. Roots serve also as an anchor, to fix plants in their respective situations.

It is generally believed that roots increase only by their extremities, and that, once formed, they do not undergo any subsequent elongation. Many experiments have been made on this point by Duhamel, Knight, and others, which tend to prove this; and we hence gain a beautiful view of the manner in which they are enabled to penetrate the crevices of rocks, by the continual formation of new matter at the advancing point: when once this is insinuated the force of horizontal expansion speedily enlarges the cavity, and, if any obstacle arrest their progress, they simply stop, cease to elongate in that particular direction, and follow the surface of the opposing matter until they reach a suitable medium.

Besides taking up food and transmitting it to the leaves, it is commonly believed that the roots also perform the office of returning a certain portion from the system, which are termed the excrementitious rejections of vegetables. It appears to consist of certain peculiar secretions of the plants, and varies greatly in different plants, and in accordance also with the quality and nature of the food with which they have been supplied. Although a disputed doctrine, yet the experiments which have been instituted to prove the existence of these secretions appear to be somewhat satisfactory. I may mention that of Macaire, who introduced part of the roots of *Mercurialis annua* into a bottle containing pure water, and the remainder into another containing a solution of acetate of lead: in a short time the bottle in which the pure water was placed was found to have received a notable proportion of the acetate, which could have been received from no other source than as being given out by the roots placed in that bottle, whilst it was taken into the vegetable system by the root in the other bottle.

The necessity and advantages of rotation of crops is probably explained by this doctrine, without the admission of which both this and many other important matters would be found to be difficult to solve.

REMARKS ON TIGRIDIA CONCHIFLORA ; ITS CULTIVATION AND PRESERVATION.

By Mr. E. A. HAMP, Gardener to T. THORNE, Esq.

IT must be a source of regret to all admirers of this beautiful flower that it should have been in this country twenty years, and now so rarely met with; and never do we hear its name mentioned but with a remark on its aptitude to rot in winter. A slight examination into the cause of this must soon convince us that our ordinary treatment is inappropriate; the great cause I have found to be the injury the roots sustain at the time of their removal from the bed at the approach of winter: our short and often cold summers being insufficient for a full development of the foliage and flowers, the bulbs are consequently immature, or perhaps the plant is arrested in the midst of its most active growth. By the general practice the bulbs are put into the beds or borders in March or April, and they are scarcely above ground by the middle of June, and do not show flowers until September; consequently the early frosts frequently overtake them in a vigorous growing state, when they are taken up and stowed away for the winter in an unprepared state. What else can be expected from such treatment but decay and consequent disappointment? What would be the effect of such treatment on any other bulb but the same result? The practice I have found most successful is the following:—In the month of March get some 48-sized pots and nearly fill them with peat, put three bulbs into each pot at equal distances, and fill up with the same material; then place them in any pit-frame or vinery at work, where there may be room for them, giving them just as much water as will prevent the earth from becoming dry and dusty, until they show themselves above the surface, when water may be given rather more freely. When about two inches above the soil, remove them to the greenhouse, cold frame, or under a hand-glass, to harden. In the first week in May place several pots of the plants in one large pot or tub, in peat alone, first putting a quantity of drainage at the bottom, and then set it in the clump or border appointed for them, covering with sufficient earth to conceal the pot, and giving a liberal supply of water in hot dry weather. By these means I

secure an early vigorous bloom; and at the first approach of winter I remove the pot or tub to a place of security from frost, limiting the supply of water until the foliage exhibits a natural decay, when I withhold it altogether. The roots are then placed (tub and all) in some shed or cellar until wanted again the ensuing spring. *Tigridia conchiflora* is a native of Mexico, and was introduced into Britain in 1823: it is set down in the *Hortus Britannicus* as a species, but my experience leads me to infer that it is no more than a variety, of its handsome relative, *Tigridia pavonia*, as the majority of the seedlings I have raised from it have a marked tendency to produce dingy red flowers; however they were growing not far from *pavonia*, and probably might be impregnated by it: but whether it is a species or only a variety the cultivator need care but little. I have been thus prolix in detail in the hope of being useful. It will be seen at once that by the system here recommended the roots are preserved from injury by breaking, and the foliage from frost, the advantage of which to the bulbs must be evident to every one. If these remarks are worthy a place in your valuable Journal, their insertion will greatly oblige

South Lambeth.

E. A. H.

ON CACTEÆ.

THIS anomalous order or division of vegetation consists of succulent plants, singular and various in structure, generally without leaves, and having their stems or branches jointed in some species.

The greater part of them are armed with spines in bundles, and in some bristles are intermixed: these bundles of spines are always placed at the top of the tubercles, as in *Echino* and *Melocacti*, which are of a roundish form, and tubercled all over, producing their flowers from between the tubercles, or *mammillæ*, round the middle of the plant.

There are some species which are clothed with long white hairs, as *C. senilis*, while others have spines arranged in a single row on the ridge of the ribs: these are mostly oval, or of a globular form; in others the deep ribs are set all over with strong sharp thorns or spines. The use of these spines has long been a matter of controversy, and we are now, perhaps, as

far from the correct assignment as at the outset. It cannot be that they are required solely for a defence from the attacks of animals, as from the nature of their habitats, chiefly inaccessible spots, they are not necessary in this light; but it may be, that in a climate so subject to powerful electrical effects, a most important effect on the vitality of the plant is wrought by these means, the several and numerous points acting as so many conductors. In the erect species of *Cereus* which support themselves, some are slender, and rising up high, jointed, and branched; some are nearly cylindrical, while others are square and three-cornered; and there are some of the latter which are named from the number of angles they produce. They are mostly compressed and far asunder, armed with sharp spines in clusters at certain distances, spreading from a centre every way; opposite to these are the creeping *Cereuses*, whose stems are weak and not able to support themselves; these seek support from the trees by sending forth roots from the stems like ivy, and clasping the trunks or branches which come in their way in so fast a manner as to keep themselves from being blown away. This strange and curious family of plants are mostly found on the sides of steep rocks in the hottest parts of Africa, the West Indies, and South America. Some species are very common in Guatemala and Cheapo in Mexico, where they seem to be thrust out of the apertures of the rocks, and having little or no soil to support them they send their long roots down into the fissures of these rocks for an amazing distance; from such situations they seldom live long when brought over here and planted in richer soil.

But few collectors pay the proper attention to the state of the plant when gathered, or to the necessary drying and packing of them for importation to this country. They ought to be cut or pulled off at least a week or ten days before they are packed, that they may dry a little: the packing should be done with thoroughly dry soft hay, to keep them from wounding each other with their spines. If stowed into strong cases in this manner, every thing being perfectly dry, and care being taken that wet does not get at them afterwards, they will bear a voyage of three, four, or even five months very well.

As soon as the plants arrive in England, those that have any soil about them should have it shaken away, and they should be allowed to lie in a dry part of the stove for a few weeks, and

afterwards be potted in equal parts of loam and sand, with a quantity of small stones placed in the bottom of the pot, so that moisture may have a free passage from their roots, an efficient drainage being most essential in the culture of all succulents; for if water be retained in the pots it rots the roots, and ultimately destroys the plant. As soon as they are potted let them be plunged into a frame where a gentle bottom heat can be had, and kept close for a week or two, observing to shade if the sun comes too powerful upon them, which will greatly facilitate their making new roots: now and then they should be refreshed with a little water, being careful at the same time to give it only in small quantities, and not too often, before they are rooted. By the time they have attained a good hold with their new roots they should be inured by degrees to the air, and afterwards be removed to the stove, where they may remain, observing to place them near to the glass, that they may enjoy fresh air and the bright sunshine. During the winter months the plants should be watered about twice a week, but not in large quantities. In the summer they demand a greater share of both water and air, but still to remain constantly in the stove. They will bear exposure to the open air through the summer, but the great rains, as well as the unsettled temperature of the air in our climate, greatly diminishes them by retarding their growth; and sometimes in wet summers they will get so saturated with moisture that they rot the following winter.

Most of them may be easily increased by seed. In spring, when the fruit becomes shriveled and dry, the seeds will then be ripened, so that they may be rubbed out and sown in a pan filled with sharp white sand, or they may be sown in the pot in which the parent plant is growing; in this case the surface of the soil must not be disturbed after sowing. There will usually be plenty of young plants spring up without any further trouble; and when they have got to a proper size to remove, six or seven should be put into one pot, and allowed to stand one year; after that time they will be ready to remove singly into small pots, when they may be plunged into a gentle hot-bed during the summer.

J. HENSHALL.

LIST OF NEW PLANTS.

ORCHIDACEÆ.—*Gynandria Monandria*.

Cattleya marginata. This is one of the many treasures in the collection of Messrs. Loddiges of Hackney, and was imported by these gentlemen from Brazil. It blossomed in their orchidaceous-house during the month of October last.

It is of dwarf habit; the flowers are very large compared with the size of the plant, and are borne singly on the top of the new pseudo-bulbs; they assume a drooping character, which greatly improves their effect when the plant is suspended. The sepals and petals are of that delicate rosy-crimson which is found in several species; and the handsome lip is much like that of *C. labiata*, but has a beautiful white border, which is the peculiar characteristic of the plant, and hence its special name.

To grow it nicely it should be fastened to an old log of wood, and kept in a cool house during winter; the cooler part of the orchidaceous-house, where it will not get too much moisture, will likewise suit it best in summer.—*Pax. Mag. Bot.*

COMPOSITÆ.—*Syngenesia æqualis*.

Triptilion spinosum. A lovely herbaceous perennial plant with pinnately-lobed leaves and small brilliant blue flowers, gathered into compact heads which appear to be copiously produced. It was raised from Chilian seeds by Mr. Frost, gardener to the Countess of Grenville at Dropmore. Mr. Glendinning of the Turnham Green Nursery, who flowered it well last autumn, writes respecting it thus: "Its scarcity in collections is attributable to three causes; viz. the sparing way in which it has hitherto been increased, the want of the true desideratum of culture, and the great difficulty attending its preservation during winter. I perpetuate it by division of the roots; this means of increasing it, however, is a very sparing one. It should be divided early in the autumn, that the plants may be established before the damp days arrive. It must not from this be inferred that the plant is tender; on the contrary, it will resist considerable intensity of frost without injury. It will produce seeds, although not freely; these should be sown immediately after gathering in light sandy soil, and placed in a warm house." The mature plants require tough fibrous heath-mould, a little turfy loam and leaf-mould, with a small quantity of broken sandstone mixed in the compost: a dry situation in the greenhouse suits them.—*Pax. Mag. Bot.*

LEGUMINOSÆ.—*Diadelphia Decandria*.

Phaseolus Caracalla. In the description accompanying an excellent plate, Mr. Paxton mentions this as the plant which having recently acquired the name of *Glycine* or *Wistaria Harrisonii* is being put forth as a novelty, it being in reality a very old but scarce stove twiner. It bears long racemes of large flowers of a purple and yellowish hue, which are both curious and ornamental, having a not very distant resemblance to the anatomy of the snail.—*Pax. Mag. Bot.*

RANUNCULACEÆ.—*Polyandria Polygynia*.

Clematis montana var. *grandiflora*. This handsome variety of the very fragrant *Clematis montana* flowered in the open ground in the garden of Mr. Veitch of Exeter. The flowers are white and large: their profusion, the delicacy of their colour, and their fragrance, are strong recommendations. The species is a native of Northern India.—*Bot. Mag.*

AMARANTHACEÆ.—*Pentandria Monogynia*.

Gomphrena pulchella. This new species of Amaranth was imported by Mr. Veitch of Exeter from Monte Video, where it was first found by Sellow.

It cannot fail to remind of our own well-known *Gomphrena globosa*; but the heads of flowers are much larger, and of a brighter though paler hue; and whereas the colour of the common Globe Everlasting is due to the floral bracteas, which are longer than the pale green flowers, here the coloured flowers are much longer than the bracteas, and give to the heads altogether a different character. It is an annual, and will probably be found to succeed in the open flower borders. — *Bot. Mag.*

CONVOLVULACEÆ. — *Pentandria Monogynia.*

Convolvulus ocellatus. A very neat *Evolvulus*-like species of Bindweed, discovered by Mr. Burke at Macaliberg in the interior of Southern Africa, and raised from seeds in the greenhouse of the Right Hon. the Earl of Derby at Knowsley, where it produced its pretty white flowers with a purple eye in the month of August. The plant is shrubby, the lower part especially; procumbent at the base, there bearing many nearly erect silky branches rather thickly beset with leaves, the largest of which are scarcely an inch long; the flowers too are small, being scarcely an inch in diameter, but are abundantly produced. — *Bot. Mag.*

LEGUMINOSÆ. — *Diadelphia Decandria.*

Lupinus arvensis. A gay little plant, forming one more addition to the large genus *Lupinus*. The flowers are large, bright lilac, enlivened by a yellow spot on the white centre of the vexillum. In number the leaflets vary from 5 to 9. The seeds, by which Lupines may be distinguished more accurately than by the ordinary marks employed by botanists, are oblong, smooth, and mottled with grey of different tints. It is a half-hardy biennial, growing from one to two feet high, and flowering a great part of summer and autumn. Like other Lupines it requires a strong rich soil, and although a half shrubby biennial is best treated as an annual. It was found growing in corn fields near Loxa in Peru by Mr. Hartweg, and flowered in the garden of the Horticultural Society in the course of last autumn. — *Bot. Reg.*

CALENDAR FOR FEBRUARY.

PLANT STOVE. Towards the end of the month many plants will be likely to betray symptoms of excitability, if the weather is at all favourable. The success of culture depends much on taking advantage of these appearances, and then, nor till then, applying the natural stimulants, of an increased degree of heat and moisture, and a proper renovation of the soil. This is, perhaps, specially important to plants having bulbous or tuberous roots containing a supply of food; for when chemical action, combining with vitality, has once set this in motion, it cannot be checked in its action without material injury. Before new growth commences every exertion should be made towards eradicating both diseases and insects from that which already exists. Orchidaceous plants especially should be encouraged to make a rapid growth as the days lengthen and the sun gains power. No better time can be taken for the sowing of seeds

imported from foreign countries, or those saved from stove and greenhouse plants grown in this country ; a light soil, exclusion from light, a moist calm atmosphere, unfavourable to evaporation, and a moderate but steady degree of heat, are the principal conditions required to assist in the germination of seeds. Average temperature, 70°.

GREENHOUSE. In this department air should be admitted as freely as possible, so that no dampness may accumulate. The growth of the plants, *generally*, should not be excited by encouraging a close warm artificial atmosphere ; it will be better to await the natural return of these favourable conditions. When growth commences in any plant, encourage it freely by all possible justifiable means ; but avoid a high temperature, for it is the source of many injurious results. Temperature, 45°.

FLOWER-GARDEN. This should receive attention in the frequent *forking up* of the beds and borders, whereby the soil will become sweetened by exposure to the air : avoid treading or trampling on them for an opposite reason. Herbaceous plants may be removed and transplanted ; such as have grown to a large size should be reduced, retaining a portion of the outside of the patches only to replant. A few annuals may be sown in dry and warm situations ; they may survive, and in that case will perhaps produce a few early flowers. Plant Ranunculuses by the middle of the month. Beds of Hyacinths, Tulips, Narciss, &c., which have been protected with litter, should have part of it removed ; and when the leaves begin to appear, they should be protected by mats or awning during night. Coverings of all kinds, as they become unnecessary, should not be suddenly removed, but this should be effected in a very gradual and cautious manner ; very much depends on this. Roses, flowering shrubs, and trees of all kinds, should be pruned before their growth recommences ; all these, too, may now be transplanted with success. Box-edgings may be planted ; turf may be laid down ; walks both of grass and gravel may be formed. Gravel walks and grass lawns should frequently be well rolled, and the edgings properly and neatly cut : nothing is worse than a deep-cut edge in the margins of walks. Continual cleanliness, at all times requisite, is perhaps more than ordinarily so now, when Nature begins to renew her smiles.



VERBENAS

1, HENDERSONII. 2, BLUE QUEEN. 3, ZEUXES

THE
FLORIST'S JOURNAL.

MARCH, 1844.

THE VERBENA.

WITH AN ENGRAVING.

THE genus *Verbena* displays to those who delight in witnessing and recording the improvements effected by earnest zeal and well-directed attention, another instance of the immense advances made in the cause of horticulture within a very late period.

The advance to perfection of this family has been so quickly, and, we had almost said, thoroughly brought about, that the merit appears to be due solely to the present race of horticulturists, men who are still pursuing the course which has been attended with such pleasing results in the case before us. *Verbenas* are flowers that were almost unknown to our grandfathers, and even so late as 1836 the late respected Mr. Loudon, after describing about a dozen species that are now utterly discarded, terms it a "weedy genus," of which only *Aubletia* and *Lambertii* were worth attention.

The additions that were made through the succeeding four or five years was astonishing, as we find, in 1840, upwards of forty species enumerated; but even this increase of the genus falls into comparative nothingness when we think of what has since been done by British cultivators; for we have now before us a list, containing the names of above two hundred species and varieties: in fact, the whole family has become so ductile by frequent hybridizing and crossing, that the usual treatment has almost merged into that of half-hardy annuals. We remember well the introduction of *V. Melindres* or *chamædrifolia*, and the stir it made among flower gardeners; its variety, *M. latifolia*,

soon after made its appearance, and was followed by *Tweediana*, which, in its turn, was succeeded by *Arraniana*, and immediately after *Teucroides*, from Monte Video, was announced; and from this may be dated the gradual increase and rise of the "weedy genus" to its present importance.

It would be an act of supererogation to force upon our readers a detailed account of the method of cultivating a tribe of plants so thoroughly understood; we therefore content ourselves with two observations — first, we would tell the amateur that Verbenas are seldom preserved in health through the winter, unless they have just sufficient warmth allowed to keep them gently growing; and, secondly, we beg to remind the professional gardener, that young plants derived from cuttings struck at this season, form finer subjects for turning out in May than the old naked-stemmed plants that have stood the winter either in frames or houses. Verbenas are so generally grown for the purpose of decorating the flower garden through the summer months, or "turning out," as it is technically termed; and the proper arrangement of their colours is of so much consequence that we feel almost tempted to enlarge on the subject; but having spoken so frequently on grouping and complementary colours, we are fearful of a charge of plagiarism, and so only just hint it to the cultivator, that he may be prepared when the season arrives.

No. 1., *Hendersonii*, is a variety well known and appreciated for its distinct colouring.

Nos. 2. and 3., *Blue Queen* and *Zeuxes*, of our present illustration are seedlings of last season, raised by Mr. W. Miller, nurseryman, of Ramsgate, the fortunate originator of the lovely *Petunia punctata* we had the satisfaction of figuring last month; they are kinds that will be necessary in all collections.

In botanical arrangement, this genus is placed in the class *Didynamia* and order *Angiospermia* of the Linnean system, and it is the type of the most strangely mixed order to be found in the Jussieuean or natural system.

EDITOR.

LIST OF ORCHIDÆ.

(Continued from page 5.)

148. *Epidendrum virescens*. (Derived from pale green.) Plant destitute of bulbs; leaves alternate up the stem, placed in the same form as the Iris, and of a pale green colour; flowers proceeding from the summit of the shoot, of a green and yellow colour. This species will either do on a clump of wood or in a pot, provided there is a free drainage. It does not require much water when growing, and a temperature of 65° to 70°. — *Native of Brazil*.
149. *Epidendrum equitans*. (Derived from the leaves being folded upon one another.) This plant is much similar in growth to the above, only rather more robust; the leaves are more compressed and acuminate; the scape is naked, and the raceme is spiked, proceeding from the summit of the stem; flowers are pale yellowish green, but of no beauty. It requires the same treatment and temperature as the above. — *Native of Mexico and the Society Islands*.
150. *Epidendrum nutans*. (Derived from nodding.) Plant destitute of bulbs; stems simple, nearly three feet long; leaves ovate, lanceolate, alternate up the stem; spike terminating the summit, nodding; flowers greenish white; the labellum 3-lobed; the middle lobe 3-toothed. This species requires pot culture in a mixture of turfy peat and sphagnum, and to be liberally supplied with water while growing; temperature, 70°. — *Native of Jamaica*.
151. *Epidendrum ciliare*. (Derived from the labellum being fringed.) Plant destitute of bulbs; stems one foot long; leaves in pairs, oblong, and veinless; flower spike produced from the summit, and supporting eight or ten flowers; the sepals and petals are pale green; labellum white, 3-lobed, the middle one linear, with the two outside lobes ciliate or fringed. This species also requires pot culture, with the same kind of soil, and plenty of water while growing; temperature, 65° to 70°. — *Native of Martinico*.
152. *Epidendrum aurantiacum*. (Derived from its flowers being orange-coloured.) Plant with bulbous stems ten inches long; leaves in pairs; flowers rather small, produced from a short spike; the sepals and petals orange, with the labellum a little darker. It is also known as *Cattleya aurantiaca*, but I find it differs a little from that genus in the generic character of the flower; but the plant is so similar in growth that it might be easily taken for one. It requires the same treatment and temperature, but rather a longer resting season. — *Native of Honduras*.
153. *Epidendrum Barringtonia*. Plant pseudo-bulbous; bulbs greenish white, ovate, slightly compressed, and a slight furrowed surface; flower-stalk, five inches long, erect; sepals and petals greenish, the apex of an olive brown, the two innermost the smallest, and the two lower lengthened out at the base and united into a short black pouch, the lip of the nectary arising from the back part of the inside of this pouch; it is somewhat shorter than the petals, covered on the upper side with an oblong, yellowish, deeply furrowed callosity, heart-shaped in front; its margin is 3-lobed, the lateral lobes small, acute, entire, erect, and transparent, terminating in a rusty brown, and beautifully fringed all round the margin; column white, elongated at the base, connected by its back to the pouch of the corolla and by its fore part at the bottom to the lip of the nectary, incurved and blunt at the top, behind obtusely keeled, flat, and with two slight furrows before; stamina red, close together; antheræ red, two on each filamentum, ovate, yellow; stigma large, very much excavated; germen somewhat longer than the pouch of the flower, green, nearly cylindrical, with six furrows. This is a valuable species,

not only on account of its size but its singularity, and of which I have given rather a lengthened description, on account of its being so similar in its growth to *E. verrucosum*, and for which it is often mistaken. — *Native of Jamaica.*

154. *Epidendrum Stamfordianum*. Plant with bulbous stems, one foot long, a little swollen in the middle; leaves in threes, seven inches long, and four inches broad; flowers produced on a half pendant raceme, branched, and rising from the base of the stem; the sepals and petals are one inch long, green, stained with longitudinal reddish spots; the apex of the column is purple; labellum pale green, with a darkish red mark in the centre, and fringed; its wings are large and white. This species is exceedingly handsome, particularly for its large racemes of flowers: it requires pot cultivation in a mixture of sphagnum, turfy peat, and rotten wood, with a liberal supply of water while growing, and rather a long resting season; temperature, 65°. — *Native of Guatemala.*

155. *Epidendrum alatum*. (Derived from *ala*, a wing, the column being winged.) Plant, pseudo-bulbous; bulbs about five inches long, and three inches thick; leaves in threes, two feet long, and a little better than two inches broad; flower spike three to four feet long, and branched; the flowers are large and handsome; the sepals and petals are yellowish green; column winged; labellum brown and yellow, more so at the apex. This species is worthy of cultivation, and requires the usual pot culture: it cannot be too often watered during its growth; temperature, 65° to 70°. — *Native of Guatemala.*

156. *Epidendrum leopardiinum*. (Derived from being spotted.) Plant pseudo-bulbous; bulbs six inches long, two inches broad, and nearly flat; leaves mostly in pairs; flower spike from six to eight inches long; sepals and petals greenish, spotted with brownish yellow; the labellum is greenish white, with a few longitudinal stripes. This species is not very handsome; it will succeed either on a lump of wood or in a pot, with the same treatment and temperature as the above. — *Native of Brazil, I believe.*

157. *Epidendrum verrucosum*. (Derived from being warted.) Plant pseudo-bulbous; bulbs about the size of a hen's egg, of a pale green colour; leaves in threes, eight inches long, and rather better than two inches broad, a little crisp, and rather of a lanceolate shape; flower spike, eighteen inches long; flowers striped. This should be in every collection, as it is a very desirable species, requiring pot culture in a mixture of turfy peat, rotten wood, and a little sphagnum, also an abundance of water while growing; to cause it to flower it should have rather a long resting season; the temperature while growing, 65° to 70°. This is a very extensive genus, comprising upwards of two hundred species, both singular and beautiful in point of colouring; some are not handsome, yet they are perfumed with fragrance, which renders them worthy a place among the better sorts; some have caulescent stems, while others produce pseudo-bulbs of various sizes and forms; most of the former require pot culture on account of their upright position; the pseudo-bulbous will do either on blocks of wood, with a little sphagnum fastened round, or in baskets, which may be made of various ornamental forms; water should be given them freely during their growth, with a slight syringing in the evening of the hot summer months; they should also be placed in an airy situation, which will cause them to strengthen as they grow, for they seldom flower well when drawn up in too high a temperature, which should never exceed 70°, nor be below 60°, except during the resting season, when it may be lowered to 50°; at this period they seldom require water, except just sufficient to keep them from shrivelling; nothing is more injurious to them than an excess at this time, for they are then arrived at their full growth, and consequently require to be kept as sound as possible, to cause them to produce their flowers with sufficient strength.

JOHN HENSHALL, K—P—Y.

(To be continued.)

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

ON THE CULTIVATION OF PHLOX DRUMMONDII.

By Mr. G. WYNESS.

THE genus *Phlox* belongs to Pentandria Monogynia of *Lin.*, and the Nat. Ord. Polemoniaceæ. It consists of elegant border flowers, chiefly valuable for producing their lovely blossoms late in the season.

Amongst the many interesting and beautiful plants that have been introduced of late years to this country, there is none, in my estimation, which is more worthy of care and attention than *Phlox Drummondii*. Although it is now common in most parts of this country, it is rarely to be seen cultivated to perfection. When it is planted out in clumps in good soil, it is certainly beautiful for a short time; but to do it justice, it ought to be kept in the greenhouse, where it will amply repay for the trouble bestowed on it, by producing its lovely blossoms in abundance from May till December. If we take into consideration the length of time which it continues in bloom, or the pleasing effect produced by its great diversity of colours, which vary from the most brilliant scarlet to red, rose, pink, and purple, with all their intermediate shades, or, above all, its fragrance, I do not know of any annual plant which is more deserving of a little care; and, therefore, I would beg to recommend it to more general cultivation, by every lover of flowers who is possessed of a greenhouse, where, by proper treatment, it will prove a splendid ornament during the summer months, while the more permanent inmates are enjoying the open air.

I have had the *Phlox Drummondii*, this season, in flower from May till December: the plants were from four to five feet high, and covered with flower from the pot to the top of the plant, and were admired by every one who saw them.

I was induced to sow seeds in January, in the hope of getting strong plants early in the season; but at that period I could not give a sufficiency of air, and, consequently, the plants got long and straggling, with naked stems, before they came into flower.

The mode of treatment I have pursued with the greatest degree of success is the following: — About the first week in March I sow the seeds in mould from well decomposed tree leaves, to which I add about one third of silver sand; and having the pots well drained with a good handful of potsherds, I fill them with the soil, and sow the seeds thinly over the surface, cover them slightly, and then give them a gentle sprinkling with water from a fine-rose watering-pot, and place them in a hotbed frame, where the heat ranges from 65° to 70° .

I have always found it to be of great advantage to place a piece of glass over the seed pot, as I think it assists the germination of the seeds, and obviates the necessity of watering again before the plants are above ground. I believe there are more seeds lost in consequence of giving too much water at this stage than through any other cause. When the young plants have developed about two pair of leaves, I pot them singly, into 60-sized pots, in the same sort of soil as the seeds were sown in, and I then return them again to the frame, until they are well established in the small pots; when this is the case, I shift them finally into 32, and some into 24-sized pots, using a compost of one part turfy loam, one part rotten dung from an old hotbed, and two parts of mould from decomposed tree-leaves, to which I add a little sand. In this final shifting, after the pots are thoroughly drained with potsherds, I fill them up nearly one third with partly decayed tree leaves: this is of great advantage in the circulation of moisture, and the decaying matter affords nourishment to the absorbing fibres. When the plants are shifted, I put them again into the frame, and place them as near to the glass as circumstances will admit, giving them air freely during the day, on all favourable opportunities. I generally sprinkle the plants over head with water, of the same temperature as the atmosphere in the frame, and shut up early in the afternoon: as the plants advance in growth, I pinch off all their tops, in order to cause them to grow compact and bushy.

If seeds are not a principal object in view, it will be of the utmost importance, and administer largely to the ultimate vigour of the plants, to remove all the decaying flowers and seed vessels; for, although the fruit or seed vessel is able to assist in the production of organic matter, yet it returns no part of the substances thus formed to the plant on which it grows, but

rather by absorbing the matter formed by the leaves, and converting it to its own appointed use, it checks the growth of the plant that bears it, and ultimately hastens its decay.

Buckingham Palace Gardens, December 27. 1843.

PRIZE ESSAY,

ON THE CULTIVATION OF THE STRAWBERRY.

BY MR. W. TURNER.

THE strawberry belongs to the Natural Order *Rosaceæ*, and to the Class *Icosandria* and Order *Polygynia* of Linnæus; its generic name, *Fragaria*, is derived from *fragrans*, odorous, on account of its fragrant smell. There are three indigenous species, viz. *Fragaria elatior*, *F. vesca*, and *F. calycina*; they are to be found mostly in woods and shady places, except *elatior*, which is not so common as the others.

I will now remark on some of those that were brought early into this country: the Virginian, or Old Scarlet, was introduced from Virginia, in or about the year 1800; it is still considered a good fruit, and is cultivated in most gardens. It ripens early in the season, and possesses a fine flavour. The Alpine strawberry much resembles the Scarlet, but its fruit is more pointed; it is of a good flavour, and continues to bear till late in the season. It is a native of America. The Hautboy is also a native of America; it has long been in cultivation in this country, and is easily distinguished from all other strawberries by its foliage and fruit, which are quite distinct; the fruit is of a very peculiar flavour. The Chili strawberry was brought to Europe by M. Frazier, and planted in the Royal Garden, at Paris; from thence it was distributed to several persons in Holland, and about the year 1727 it was brought from Holland to this country, and grown in the garden of Mr. G. Clifford, of Hartecamp. This sort is known by its thick, oval, and hairy leaves. Its fruit is large, and of a white colour, and but little in esteem; in fact, in a few years, it will only be known by name, for we rarely find it in cultivation.

Having enumerated a few of the original kinds of straw-

berries, I will now proceed to notice the cultivation of this general favourite. In the first place, the spot on which to form the beds is to be chosen; and it should consist, if possible, of a loamy soil. If the natural soil is not of this nature, the cultivator will be well repaid by procuring a few loads of turfy maiden loam from an old pasture, for it is that which strawberries most delight in. Having chosen the ground for the beds, let it be cleared of all weeds, and then trenched to the depth of two feet and a half; after being levelled, put on a good dressing of loam or manure, but give the preference to the former; if manure is applied, the condition of the soil must be taken into consideration, for if it is already rich, too great an addition of manure will make the plants grow luxuriantly, and they will produce fewer fruit: let this dressing be then forked in just under the surface, so that the young plants may find benefit from it the first season; for the roots of strawberries are generally abundant near the surface of the soil, and many people lose the benefit of the manure they apply by burying it too deeply, which in all cases should be avoided. The ground may then be divided into beds of about four feet in breadth, leaving two feet for a path between them: when this is done, stretch a line and draw three drills in each bed, at one foot and a half apart: this will not be too much room for strong plants to grow in. The plants to be selected for planting in these beds should be from the youngest stock, and those runners that are nearest to the parent plant are to be preferred, as they are generally the strongest. Be careful to avoid taking plants from old and exhausted beds, for they will prove but little worth, and cause much disappointment. The plants may be planted at the same distance in the drills as from row to row, for I have always found that when plants have plenty of room, and are kept apart, they flourish better, and produce better crops and finer fruit than when they are suffered to grow in a thick mass. When suffered to grow in that state, the fruit soon becomes small and comparatively worthless. When the planting is completed they must be supplied with water; and in order that they may obtain the benefit of the autumnal rains, and get well settled in the soil before the winter, the operation of planting should be performed about October; for it frequently occurs that when the planting is left till later in the autumn, the plants, not having time to make fresh roots, get thrown out of

the soil in the spring when the thaw commences. When the planting is left till the spring, they must be well watered in dry weather to insure success. After the plants have taken root, the next thing is to guard them against severe weather; and in order to prevent the frost from injuring them, lay some old tanner's bark between the plants: if this cannot be procured, saw-dust, the decayed leaves of trees, or the branches of trees with the leaves on them, may be laid over the beds, to prevent the frost from penetrating deep in the ground.

In the following summer the beds should be kept free from weeds, and all the runners taken off as soon as they are produced; if this is attended to, the plants will become very strong by the following autumn, whereas when this is neglected, as is often the case, and all the runners are allowed to grow till the autumn, and then pulled off, the plants are much weakened thereby; it is very necessary to attend to this point, for young plants, when allowed to produce runners the first season, never produce fruit so fine as those that have had no runners to support.

The next thing to be observed, is in autumn to clear the beds of all the decayed leaves and weeds that may have accumulated on them, and dig up the paths, burying the rubbish taken from the beds; then lay some soil over the surface of the beds, between the plants, as this will strengthen them for the following spring; if loam can be got, put it between the plants in preference to any thing else. In spring, when the danger of hard frost is over, the ground between the plants may be carefully forked up with a small fork, breaking all the clods of earth that may come to the surface; and in doing this, the loam that was put on in the autumn will be buried, and form a good dressing to the plants: then about the beginning of April, if it is possible to cover the beds with a coating of moss, it will be of much service in keeping the beds moist, and preventing the fruit from being splashed by heavy rains, which is very injurious—for when fruit has to be washed before it can go to table, it loses much of its flavour. I am convinced that where this method is practised, plenty of good fruit may be obtained; but it is requisite to have a succession of beds, for about three or four years will be found quite as long as the plants will produce fine fruit, and by keeping the ground longer under one crop, it will become quite exhausted.

CULTURE AGAINST HOT WALLS.—There are some places where hot walls are used for producing early fruit, and where such is the case, a row of strawberries may be planted near the wall, and the heat that serves for the wall trees, will assist to bring forward an early crop of strawberries: wherever this is practised, fresh plants should be provided every season; the old soil of the border should be carefully taken out, about a spade and a half wide, and fresh soil filled in. The plants may be put in about the beginning of October, at about nine inches apart, for the object is to obtain as much fruit as possible from a limited space; the plants should not remain there after fruiting, but they may be removed to a cool part of the garden, and will produce a second crop in the autumn, by taking off all runners, and carefully watering them when requisite. If the fires are lighted about Christmas, the strawberries, will be ripe by about the end of March; or if the season is very cold, it may be the middle of April before they are fit for the table. In growing strawberries near hot walls they must be well supplied with water when requisite, for neglect of this at the time they are coming into bloom, will cause the blossoms to drop without setting their fruit: care must be taken not to wet the bloom.

Before we enter on the subject of forcing this fruit, it will be necessary to say something respecting the manner of preparing the plants, which should be done as follows: as soon as the runners become strong enough, fill a sufficient number of forty-eight sized pots, with good loamy soil, and plunge them about the beds; then lay the best of the runners into the pots, and either peg them down, or lay a stone on them,—I prefer pegging them down; attend to the watering of them in dry weather, and they will soon send out fresh roots: when they are well established in the pots, cut them from the parent plant, and let them be removed and plunged in beds close together, where they may remain till the roots fill the pots; care must be taken that they have water in dry weather. In August they may be repotted into thirty-two sized pots, using a compost of one part well-rotten manure, and three parts loam, chopped fine, but not sifted: by pursuing this method, plants may be obtained either for forcing in the house, or for the hot walls; when required for planting out they have this advantage, that they may be removed without greatly disturbing the roots.

FORCING IN HOUSES, &c.—When about to commence

forcing it will be advisable to remove the plants to a frame, pit, or greenhouse, to prepare them for going into the fruiting house, as it would not be desirable to take them at once from a cold situation to a hot one : they may be kept out as long as it is wished, and only a few brought in at a time, according to the demand ; some may be kept out, so as just to precede those growing in the open ground. If the strawberries are intended to be forced in a stove amongst pines, where they cannot be plunged in the tan-bed, it will be requisite to shift the plants into larger pots in the autumn, that they may be well rooted before they are removed to the stove ; if they are placed in a frame, as above noticed, in the beginning of November, where they will be sheltered from the frost, it will prepare them for the stove, into which they may be removed about December, earlier or later, depending on the time they are wanted. Those who wish to have them very early may make a slight hot bed under frames, and place the plants in, about the latter end of October ; they will thus be brought early into flower, and may then be removed into the stove. When the plants are put into the stove, they must be placed as near the glass as is convenient, so that they may have the benefit of the sun and air ; for when they are placed far from the glass, they get drawn up weak, and the flowers will fall without setting the fruit : it will be requisite to give them as much air as can be afforded, consistently with the keeping up the heat of the house. The plants, when placed on the shelves of the stove, must be duly supplied with water, as they will dry up rapidly ; but they must not have too much, and care must be taken that the bloom or fruit is not wetted, for if the water comes in contact with the fruit after the saccharine or maturing assimilation commences, it will spoil the quality and flavour of the fruit, by filling it with aqueous matter. If the plants are properly managed they will produce fruit in February, which is as soon as they are generally wanted.

FORCING ON HOTBEDS.—It may be perhaps as well to mention the manner of forcing the strawberry in a common hot bed, as many individuals may not have the advantage of a stove ; but if they have got frames, the object may be gained by the following plan : the plants are to be prepared as already directed, and placed in a warm situation in the beginning of October ; then about the beginning of January, or sooner, if

requisite, make a hot-bed the same as for cucumbers, but not quite so powerful, and as soon as the rank steam of the dung is off, lay some old rotten dung over the bed, to keep down the heat; when this becomes steady at about 75 degrees, put the plants into the frame as closely as possible, filling up between the pots with earth; they must have air given to them every day, according to the weather, and the bed must be kept at a steady heat. If it should become too hot, the pots must immediately be lifted, to prevent the roots being burned; and if the heat subsides too much, a fresh lining must be given. This bed will bring the plants into flower by the beginning of March, by which time the heat will be declining; therefore a fresh bed must be prepared on which to place the plants, so that they receive no check for want of heat; this second bed need not be so strong as the first, but on the hot dung a layer of cow-dung should be placed, about an inch and a half thick, which will help to keep down the strong heat, and prevent the roots of the plants from being scorched: having levelled the dung, place on it a layer of about two inches in thickness of loamy soil, which may remain a day or two to warm, and the plants may then be taken out of the first bed, and carefully turned out of the pots into the second, performing the operation carefully, so as not to disturb the roots. The plants may be placed at about a foot apart, and the spaces between them filled with the same kind of soil similarly warmed.

By moving the plants out of the pots into the soil, it causes them to flower stronger. They must have air and water, the same as for the plants in the stove, and if this is well attended to, there will be a good crop of fruit about April, which is about two months before they are ripe out of doors.

RETARDING.— In order to retard the fruit, so as to supply the table late in the season, the plants may be planted in a shady place in the garden, and when the first flowers appear they should be plucked: if the weather is dry, water them well, and they will send out fresh trusses of flowers, and produce a late crop of fruit; but the quality of the fruit will, however, be far inferior to that which ripens in its proper season. When the Alpine strawberry is in cultivation, this need not be attended to, as they will continue to produce fruit till late in the season.

In rearing strawberries from seed, the following process can be adopted, by those who aim at the production of new

varieties:—select the finest fruit, and allow this to remain on the plant till it is dead ripe; then mash it, and carefully wash out the seed from amongst the pulp, rub it well apart, and spread it out, in any suitable place, to dry: when dry, it may be sown in pans or boxes, or in a frame, being covered with the glass; when the plants are up, they will require water occasionally, and must be kept free from weeds, until they are fit to plant into beds, at six inches distance in the rows, and a foot from row to row; if every fourth row is missed it will serve as a path to get to water and weed them. If there is not time for them to get established before the winter, the planting will be better deferred till the following spring; when they produce fruit, it will readily be seen which are worth cultivating, and the remainder can be destroyed.

I will now enumerate some of the principal varieties in cultivation:—

Keen's Seedling (syn. <i>Keen's Black Pine</i>).	Elton Pine (syn. <i>Elton Seedling</i>).
Old Scarlet (syn. <i>Scarlet Virginia</i>).	Prolific Hautboy.
Roseberry (syn. <i>Scotch Scarlet, Aberdeen Seedling, prolific Pine</i>).	Coul, late Scarlet.
Black Roseberry.	Garnstone, Scarlet.
Black Pitmaston.	Swainstone Seedling.
Old Pine (syn. <i>Carolina</i>).	Grove End Scarlet.
Myatt's British Queen.	Downton (syn. <i>Knight's Seedling</i>).
Myatt's Pine.	Black Hautbois.
American Scarlet.	Green Pine (syn. <i>Pine Apple, Green Alpine</i>).
Sweet Cone.	Large Flat Hautboy.
	Wilmot's Superb.

Many of the above are of little worth, but the following are all worth growing:—Keen's Seedling, Old Scarlet, Myatt's British Queen, Myatt's Pine, Elton Pine, and Swainstone Seedling. These I should choose for my own cultivation; if, however, I were pressed for space, so as to be able to grow only one or two sorts, I should give the preference to Keen's Seedling, British Queen, and Old Scarlet; the others might be added to them, if space admitted, together with the Late Scarlet, Prolific Hautboy, and the Downton. I would just observe that many growers complain that they cannot fruit Myatt's Pine well; but if they grow it in a fresh loamy soil, and renew the plants every two years, they will have no cause to complain, for it is in the age of the plants that the fault is to be found. I never found it to fruit well after the second season; but by growing it in a loamy soil, and keeping the beds young, and watering the ground in dry weather, a good crop of fine and excellent fruit has always been the result.

ON NARCISSI.

WE are led to offer some remarks on this very popular tribe of plants by the inquiries of a correspondent in the present Number. Our observations, however, must be confined to their management for the flower-garden alone, as we find space becoming more valuable each month. The term popular is unquestionably due to this family, for we do not believe there is an individual connected with the management of a garden but will admit their beauty, or, to use a gardener's term, their "usefulness," in the early spring months: every one is then naturally desirous of having flowers in the parterre; and from the very limited number of plants sufficiently robust to withstand the piercing cold usual in March, and produce flowers at the same period, it is equally desirous that the very few that will do so should receive the necessary encouragement to the full development of their beauties.

The great objection to the more extended culture of Narcissi is their untidy appearance in the beds or borders through the summer, a time when everything should be in perfection or approaching it, and when, certainly, the seasonal decay they naturally exhibit would mar the efforts of the most skilful to make the adjoining spots look pleasing. This objection would be fatal, was it necessary they should remain so to disfigure the otherwise gay scene: but it is not; they may be removed, but not in the manner too frequently employed, by taking them up with the spade as soon as the blooming is over, and carrying them off to some out-of-the-way part of the garden, there to become a prey to the slug and the wireworm. This mode is attended with the worst results, for the growth of the plants is thus arrested at the time they are making their most vigorous exertions; and it must be apparent to every one at all conversant with the subject that the production of flowers in the ensuing season depends solely on the growth of the present: if the proper strength of the bulb is maintained or increased, and the necessary time is allowed to mature the accumulations, an abundant bloom may be expected, but the contrary must result from an arrested growth.

All this may be avoided, the necessary strength insured, and the bulbs removed with greater facility, whenever the space

they occupy may be required, by adopting a different mode of planting. Instead of placing the roots into the bed they are intended to ornament, let them be planted in boxes, and in this manner plunged into the places set apart for them, then they may be removed at pleasure without injury. The shape and dimensions of these boxes may be varied to suit particular circumstances, but they should all be at least one foot deep, and in planting the bulbs should be kept near the surface, that there may be a sufficient depth of earth for the roots to derive their required nourishment. Square boxes would, perhaps, be preferable, as they may be more easily made, and are convenient to pack away when not in use; and if they are of several sizes, almost any figure in the flower-beds may be filled sufficiently close with them.

By adopting this mode we may very much increase our present scanty supply of early flowering plants, by introducing for a time such as have been found too delicate to bear the rough treatment we have described, and yet be enabled to remove them without prejudice when their beauty has left them. In the class of plants under consideration, in addition to the common *N. poeticus* or *N. incomparabilis*, and even *N. Pseudo-Narcissus*, now nearly the only kinds to be met with in the open air (which are grown simply because they cannot be killed), we may have any or all of the finer sorts. Nor is it with Narcissi alone that the advantages of this method of removal rests; there are many other plants, known to every gardener, which are extremely beautiful while in flower, but not at all desirable when it is over, at the same time will not bear the check consequent on hasty or premature removal; and we feel satisfied the trifling expense or additional trouble is more than met by the increased means afforded.

ED.

LIST OF NEW PLANTS.

ORCHIDACEÆ. — *Gynandria Monandria*.

Angræcum pellucidum. The flowers of this beautiful vanda-like plant are as delicate and transparent as if they were flakes of snow fixed by frost in the very act of melting. Each part of the lip is studded and bordered with little crystalline elevations, and the whole fabric of the blossom is as fragile as thin plates of glass. It was imported by Messrs. Loddiges from Sierra Leone, with whom it flowered in November, 1842 — *Bot. Reg.*

MELIACEÆ. — *Monadelphina Decandria*.

Turraea lobata. This very rare stove plant flowered at Chiswick House last July. His Grace the Duke of Devonshire received it from Mr. Whitfield, who collected it in Sierra Leone. The flowers have much the appearance of those of the orange, but have no scent. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Cattleya pumila. This pretty little species is stated in the Botanical Magazine to be a native of the Essequibo; but we cannot confirm that statement, which has probably originated in some mistake. It is most assuredly Brazilian, being No. 657. of Mr. Gardner's Herbarium, and having been imported by a French dealer from that country under the name of *C. marginata*, — a very good name, expressing the appearance of a beautiful pale border to the blood-red blotch of the lip. It should be potted in turfy heath mould, mixed with a few pieces of potsherds to keep it as porous as possible; the pot should also be well drained, and the soil considerably elevated above its rim. In cultivation the genus *Cattleya* differs from many orchidaceous plants; the species require very little water; even in spring when the plants are growing, water once or twice a week will be sufficient; and if syringed, it must be so slightly that no water may lodge in the axils of the leaves; but where steam can be admitted once a day it will be found much better. During summer the house should be slightly shaded in sunny weather, and the temperature allowed to rise to 80° or 85° by day, but never above 70° at night. In winter, when little or no water is required, except to keep the pseudo-bulbs from shrivelling, 65° by day and 58° at night will be sufficient. — *Bot. Reg.*

MALFIGHIACEÆ. — *Decandria Trigynia*.

Stigmaphyllon jatrophaefolium. A very pretty twining plant, with clear light green leaves, beautifully cut for the most part, though sometimes heart-shaped, and bright yellow flowers. A native of rocky places, near the fort of Salto, on the banks of the Uruguay. It is probable that it will prove suited to a greenhouse; but as it is found trailing among stones, it will require full exposure to all the sun-light that can be obtained in this climate. It will also succeed in a moist stove. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Ania bicornis. This is by no means a showy plant, resembling at first sight a starved specimen of *Eulophia mucrostachya*. It was flowered in March, 1842, by the Rev. J. Clowes of Broughton Hall, who received it from Ceylon. It is a terrestrial plant. — *Bot. Reg.*

AMARYLLIDACEÆ. — *Hexandria Monogynia*.

Crinum variabile var. *roseum*. This beautiful bulb flowered in April last with J. H. Slater, Esq. of Newick Park, near Uckfield. Its leaves are very long, and its gay rosy flowers most agreeably scented. — *Bot. Reg.*

ROSACEÆ. — *Icosandria Polygynia*.

Spiræa Reevesiana. A handsome, hardy, sub-evergreen shrub, growing in any good garden soil from three to four feet high. The leaves on its young shoots are so deeply lobed as to be almost pinnatifid; but as it becomes old they lose their lobed character altogether. It forms a spreading bush, producing a copious display of white flowers in May and June. A native of China. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Lissochilus roseus. Although the terrestrial Orchidaceæ of hot countries are too often very inferior to the epiphytes, yet there are many exceptions to that rule, among which few are more striking than the present, which will

not suffer by comparison with the *Vandas*, *Saccolabiums*, and *Dendrobiums* of India. It is a native of Sierra Leone, whence it was received by Mr. Rucker, with whom it flowered in February, 1843. The leaves are broad, stiff, and plaited, like a reed; the flower-stem is between three and four feet high; the petals are of the brightest rose-colour, set off with velvety-brown sepals, and a yellowish stain on the lip. — *Bot. Reg.*

CACTEÆ. — *Icosandria Monogynia*.

Cereus extensus. This appears to be a very shy flowering species, but repaying all previous trouble when in bloom by its exceedingly large and specious flowers, the petals of which are rose-coloured, heightened by the greenish yellow and red sepals. It is a repent and probably climbing species, from Trinidad, whence it was received by J. Gray, Esq. of Greenock, who flowered it in August, 1843. — *Bot. Mag.*

CONVOLVULACEÆ. — *Pentandria Monogynia*.

Ipomœa crassipes. A fine climbing plant, collected by Mr. Burke in his extended journey into the interior of Southern Africa. It was raised from seed by Mr. Jenkins, gardener to the Earl of Derby, at Knowsley, and flowered there in August, 1843. The flowers are copiously produced, and are about two inches in diameter, of a rich rosy purple. — *Bot. Mag.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Lycaste Skinneri. This plant is generally known as *Maxillaria Skinneri*, but has been lately classed by Dr. Lindley in the new genus *Lycaste*. "The flowers are upwards of six inches across from the tips of the lateral sepals, while the latter are nearly an inch and a half wide in the broadest part. The colours of the flowers are peculiarly delicate, the sepals being pure white, faintly tinged with crimson at the base; the petals of a more rosy hue, while the tip is almost covered with spots and streaks of the most brilliant carmine. The column again is pure white at the apex, and mottled with crimson spots at the base, while a number of woolly hairs are scattered on its under side. The habit of the plant is stately, and its growth free and vigorous, more nearly resembling *L. Deppii* than any other species." There are two or three varieties of the plant known, differing slightly in the size and colouring of the flowers. It has been brought to this country in great numbers by G. U. Skinner, Esq., after whom it is named. Its native place is Guatemala, where it is found growing on rocky and mossy banks in very moist places. — *Pax. Mag. Bot.*

TO CORRESPONDENTS.

OUR Subscribers will have observed an alteration on our Titlepage of last month. We have added to the original title in order to render it more comprehensive, and suited to our now extended range of subjects, which, as they embrace every branch of the science, required an alteration of the kind.

We trust the addition will meet the approval of our friends, and that the *FLORIST'S JOURNAL* will be found a useful *GARDENER'S RECORD*.

W. S. — There are some districts to which the Mistletoe appears to have a sort of antipathy, never being found within their limits, and in others it increases to a troublesome extent. We have seen it flourishing on the

apple, the oak, the hawthorn, but particularly on the lime tree. Your best mode of proceeding would be to procure berries as soon as possible, and rub the seeds contained in them on to the *under* side of a large branch of any of the trees mentioned; they will adhere without trouble, by means of the viscid juice of the berries. You can do no more, nor can we insure you success.

We did not receive your communication until too late for insertion last month.

A READER. — Plant your *Gladiolus* at once, in a light rich soil. You will find full directions for their culture at Vol. III. p. 177.

A GARDENER. — Root-pruning will probably remedy the evil.

K. T. — We cannot undertake to give a monthly calendar of kitchen-gardening, but will answer any question proposed. The papers of the Regent's Park Gardeners' Society will supply first-rate information on the subject, in the form of separate treatises.

F. C. — For the southern side of the wall you describe, we recommend the following *Roses*: — *Noisettes*: *Aimée Vibert*, pure white; *Jaune Desprez*, buff; *Smith's double yellow*; *Euprosine*, fawn colour; *Luxembourg*, bright purplish rose colour. *Bourbon*: *Great Western*, large red. — On the north side: — *Boursault*: *Amadis*, deep purplish crimson. *Bourbon*: *Phoenix*, reddish purple; *Splendens*, crimson. *Multiflora*: *Grevillii* or *Seven Sisters*, deep red, very free flowerer. *Ayrshire*: *Queen of the Belgians*, pure white. *Evergreen*: *Félicité Perpétuelle* or *Belle Euphrasia*, cream colour. All the above are fragrant, more or less; some of them extremely sweet.

A SUBSCRIBER FROM THE FIRST NUMBER. — *Brachycome iberidifolia*, although usually treated as a half-hardy annual, will succeed, and frequently better, when sown in the open border; only observe to defer the sowing until the end of March or the first week in April, that the plants may be secured from late frosts.

T. FRAZER. — There are several causes for the falling of *Camellia* buds, the most active of which are, too much heat, and a superabundance or deficiency of moisture. From the time the flower-buds are fairly set, *Canellias* require a steady uniform treatment, and any change then is injurious.

For the purpose of obtaining a succession of flowers, the plants should be gently forced immediately *after* blooming, the object being an early growth, and the consequent early development of the buds.

A SUBSCRIBER, DURHAM. — *Gesneraceous* plants delight in a soil composed of half leaf-mould, and the remainder loam, peat, and silver sand, in equal quantities; these should be well mixed, and used rather rough. Shallow wide-mouthed pots are preferable for this tribe; some of them, the genus *Achimenes*, for instance, grow and flower infinitely better when planted in pans about three inches deep; in all cases they require a very efficient drainage. No time should be lost in potting and starting the whole of them. A shelf in the stove, or the back of a hotbed, will be the best place for them.

R. S. — The following *Fuchsias* will be found pretty and distinct: — *Miller's Constellation*, *Formosa elegans*, *Venus Victrix*, *Ivery's Gem*, *Smith's Gigantea*, *Stanwelliana*, *Chandlerii*, *Tricolor*, *Fulgens multiflora*, *Smith's Queen Victoria*, *Defiance*, and *Lancii*.

CALENDAR FOR MARCH.

STOVE. As the distinguishing feature which should be observable in plant culture, during the winter months, is that of repose, so in the spring and early part of the summer, should activity and assiduity stand out, as it were, in full relief, in the picture we may draw of a successful cultivator. This remark will prepare the way for stating, that the operations which require to be performed are multifarious; but, it must be added, that none of them must be brought about, or performed, either by rote or chance. In gardening we cannot divest one operation of its attendant satellites, and speak of it unconditionally: thus of potting (for most plants will require repotting about this time) it would be highly improper to recommend the shifting of a collection of plants, either at the beginning or towards the end of the month; it would be improper, too, to advise in any way the repotting of a whole collection at any particular time. Shift such as manifest that the operation will prove beneficial to them; but take every precaution in applying water after repotting, not to saturate the soil. It may, perhaps, be well here to describe what should be the course adopted in repotting a good and valuable plant: first, determine if it requires shifting, with a view to increase the growth, as in the case of a healthy plant, or if it stands more particularly in need of the regimen adapted for an invalid. Assuming the former, the next step is to determine the capacity of the shift, that is, whether an extensive or a limited increase of space is desirable; then ascertain what is the proper soil for each particular plant; take the pot in which it is intended to place the plant (let it be perfectly clean and dry); we will suppose it to be one of those of which sixteen in number are sold to what is technically termed a cast; over the hole in the bottom of this pot invert a thumb pot, and around this fill up with charcoal, potsherds, or bricks, broken to about an inch in size; add a layer of the rough turfy portions of the soil; then, and not till then, carefully remove the plant, by inverting the pot, supporting the ball of earth and roots by the left hand, and gently tapping the rim of the pot on the edge of

the potting bench; carefully remove the crocks from the old ball, gently pat the sides with the hand, so as to loosen the points of the fibres, if they are at all matted, and then place the plant in the new pot, so that the top of the old ball of earth may be about level with the rim of the pot; fill in with the soil in a rough state, and gently, but firmly, press it down, finishing off quite level about half an inch below the rim; set the plants in a shady place, and the pots quite level; give a moderate watering, and the operation is finished. In warm weather the moisture of the atmosphere may be increased; but limit artificial heat, at night, to about 60°.

GREENHOUSE. Potting will be the most engrossing point in this structure likewise; it must be performed in the same manner as just described, considering also individual habits and requirements. Propagation, in all its branches, should go on briskly.

FLOWER-GARDEN. The seeds of all hardy and half hardy annual plants should now be sown in their respective stations; some in the open ground, some in pots, some in cold frames, and some in a slight heat. All kinds of summer bedding plants may be propagated, ready for use in May or June; but should be brought forward quickly. Finish the pruning of all kinds of deciduous trees and shrubs, which are not yet done. Attend particularly to spring flowers, which are perhaps the most cheering things which a garden can afford, on account of the pleasing associations generally connected with them. Shade, protect, tie up, prune, hoe, sweep, mow, roll, whenever and wherever these operations may be found to be necessary.

The amateur will find it interesting to note annually the time when his favourite plants come into flower, or when particular trees and shrubs are leafing; and a series of well-authenticated facts on points such as these would not be without their use to professional gardeners.

T. M.



INCA HARRISI

THE
FLORIST'S JOURNAL.

APRIL, 1844.

INGA HARRISII.

WITH AN ILLUSTRATION.

THE extensive, varied, and very important group of plants, collected into the natural order *Leguminosæ*, does not contain, in our opinion, a more delicately beautiful object than the one we have now the pleasure of noticing, our inducement to which is to be attributed to its individual loveliness, and the accommodating character of the genus. This particular species, however, is one which certainly deserves far more attention from all who delight in floral beauties than it appears to have met. It is a plant of the most easy culture, apparently capable of being made all that can be desired of a winter flowering plant; the habit is free and vigorous, the foliage neat and pleasing, and the flowers most abundantly produced and beautiful. Our figure, which is but a small sprig taken from a plant in the collection of J. H. Schröder, Esq., of Brixton, can convey but a faint idea of the appearance of a well-grown plant, from four to five feet in height, and nearly as much in diameter, when covered, as it may be had, with its very specious inflorescence.

Its history appears to be involved in obscurity: no authentic information of its introduction, or from whence obtained, being preserved, the special name was adopted in compliment to — Harris, Esq., of Kingsbury; and we are indebted to Mr.

Beaton, of Shrubland Park, Ipswich, who had the plant under his charge at Kingsbury, for the subjoined account of it.

“ The *Inga Harrisii* is, indeed, a fine plant, which only requires the stove when in a growing state, and as it flowers on the last year's wood, requires to be well cut in after blooming. The history of its introduction is lost. Mr. Harris bought it of Messrs. Lee, of Hammersmith, and unfortunately passed it as a new introduction to Dr. Lindley, when it flowered; it is figured in the *Bot. Reg.* as such; but I believe it to have been in the country for the last twenty years.

Doubtless it is from the more temperate parts of tropical America. It strikes with great freedom, and, like many of the same order of plants, if subjected to a high temperature after its growth is finished, is immediately attacked by the red spider. It is one of those accommodating plants that may be treated so as to have in flower for a long time in succession: say to be partially dried and set to rest by the middle or end of July, and after three months to be brought into a forcing house in succession, when it may be had in flower from Christmas to April; but treated in the ordinary way, it always flowers from the middle of January to the middle of February.

D. BEATON.

It seems to delight in an open moist soil, such as a mixture of peat and leaf mould in about equal quantities, and attention to pruning, as recommended by Mr. B., is particularly necessary, or it will soon become unsightly.

The entire genus consists of about thirty species, the geographical distribution of which is very wide; but all of them partaking, more or less, of the character of tropical plants. They are mostly pretty; but none that we are acquainted with equal our present subject.

Inga is included in class Polygamia, and order Monœcia, of Linnæus, and in the grand order Leguminosæ of the natural system.

EDITOR.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

A FEW OBSERVATIONS ON THE GARDEN PEA.

By Mr. G. WYNESS.

THE garden pea (*Pisum sativum*) is one of our most valuable culinary legumes, and has been cultivated in this country from time immemorial: its native country is unknown, but is generally referred to the south of Europe; it is a hardy climbing annual, with the legumes or pods commonly produced in pairs, the seeds contained within which are the part of the plant which is used.

The first object to be attended to, in the cultivation of the pea, is the proper preparation of the soil; stiff clay or very sandy soil ought to be avoided if possible, but in either of these cases, if the means are at hand, the soil ought to be tempered by admixing a portion of sand with the clay, or *vice versâ*.

The soils which are most suitable for all culinary crops are those which contain a due mixture of sand, finely pulverised clay, and carbonate of lime, with some animal or vegetable matter. With respect to carbonate of lime, and animal or vegetable matter, they are of great use in the composition of soils, as they give absorbent power to the soil without giving it tenacity; pulverisation is of the greatest importance in all soils, to give ample scope to the production of fibrous roots; for without abundance of these no plant will become vigorous, whatever may be the richness of the soil in which it is placed: the fibrous roots of plants extract the soluble matter of the soil, and the quantity taken up, therefore, will not depend alone on the quality of the soil, but in a great measure also on the number of the absorbing fibres. In proportion as the soil is pulverised these fibres are increased, and the greater quantity of matter is absorbed; consequently, the plants become more vigorous.

Water is not only necessary to plants as such, but it is essential to them, by producing an extract from the vegetable matter which the soil contains; and unless the soil, by pulverisation or otherwise, is so constituted as to retain the

quantity of water requisite to take up this matter in solution, the addition of manure will be in vain: manure is useless to vegetation till it becomes dissolved in water; and it would remain useless in a state of solution, if it so abounded as to exclude air; for the fibres, or mouths, being then unable to perform their functions, would soon decay and rot off.

As the garden pea is in request every day during the season, there is generally a large portion of the kitchen garden set apart for its cultivation. It is commonly sown in rows from three to five feet apart, according to the height of the several varieties which are grown; but, unless for the early crops (for which certain situations alone are suitable, on account of warmth and shelter), I am convinced, from experience, that it is a bad practice to sow such large quantities together, as I have always observed that the outside rows are invariably more healthy, and much more productive, than the rows in the interior of the quarter; there is no doubt but that this results from their being too thickly sown, and the rows being too close together, by which they are excluded from the full action of sun and air, and the stems and lower leaves assume a sickly yellow hue, by reason of the obstruction of perspiration, and the prevention of the chemical changes effected by light on the epidermis of the leaf.

The change and elaboration of sap into pulp cannot take place in the dark, for the light of the sun is indispensable in order to the exercise of their functions; and plants that are crowded together, or are growing under the shade of trees, cannot well effect the important change of sap into the proper juices, except in small quantities; and this causes them to become sickly for want of due nourishment. We always see plants that are placed in a dark shaded situation, incline their heads towards the light: this does not arise from any sensibility or instinct in the plant, but from the natural cause of the part most exposed to light, being placed in more favourable circumstances for the conversion of the sap into pulp, which renders it heavier, firmer, and shorter than the part less exposed, whose laxness causes it to elongate and give way, through weakness.

If these general observations are correct, the importance of giving more space between the rows of peas must be at once obvious. Suppose they were to be sown in rows from twenty to thirty feet apart, I am convinced the consequence would be an

improvement both in the quantity and quality of the produce; and a more free and perfect circulation of air being secured, this would in a great measure prevent the mildew, a disease to which the garden pea is very subject in confined situations: the intermediate spaces between the rows of peas could be cropped with the other common culinary vegetables, and these would be benefited, rather than otherwise, by the partial shade derived from the peas.

It is a well-known fact that the excrementitious slime from peas acts as a poison to crops of peas which may follow, but is food for plants of different habits and properties; and so it is with all other vegetable productions: hence the utility of rotation cropping. If the mode of culture were to be pursued which I have recommended, the object sought by rotation cropping would in a great measure be obtained; and by leaving the spaces intended for rows of peas, the other parts of the ground could be all under crop, which would not be such an eyesore as to see a large piece of ground lying idle until the last sowing of peas. I need not say lying idle, for I have often observed a very thriving crop of weeds, seeding in all their glory, and preparing the germs of a progeny for years to come, and thereby increasing the labour of the gardener, who has generally more to do than he can well accomplish.

The varieties of the garden pea are numerous, and differ materially in their mode of growth, quality, productiveness, and time of coming into use. I have made a selection of a few of the varieties in most common cultivation, which I will give with their synonymes:—

1. EARLY FRAME. Syn. *True early Frame; Early dwarf Frame; Early May; Very early Frame; Perkins' early Frame; Early nimble; Mason's double-blossomed; Double dwarf Frame; Early Nicholas; Young's very early; Superfine double early; Russell's fine early; Dwarf Abong; Master's Hotspur; Early Hotspur; Golden Hotspur.*—This variety is generally sown for the first crop, as it is more hardy than some of the finer varieties, and comes sooner into use; it grows between four and five feet high, is a moderate bearer, and of good quality.

2. EARLY MAY SUGAR. This variety grows between eighteen inches and two feet high; the pods are large, broad, and well filled; it is an abundant bearer, of excellent quality, and comes into use about the same time as the Early Frame.

3. BISHOP'S DWARF PROLIFIC. This variety grows about one foot high, with the pods short, but well filled; it is an abundant bearer, of good quality, and comes into use about a week later than the Early Frame: this is one of the best sorts for early forcing, as it takes up but little room.

4. EARLY CHARLTON. Syn. *Early sugar Frame*; *Earliest double-blossomed*; *Golden Charlton*; *Early Nicholas Hotspur*; *Wrenche's early Hotspur*; *Nimble Tailor*; *Brussels early blossomed*; *Essex reading*; *Twesly dwarf*; *Golden Hotspur*. — This grows between five and six feet high, is very strong, and has the joints very distant; it is an abundant bearer, of excellent quality; if sown at the same time as the Early Frame, it will come into use fully a fortnight later than that variety.

5. BLUE PRUSSIAN. Syn. *Nain royal*; *Nain vert petit*; *Fine long-podded dwarf*; *Green Prussian*; *Blue Union*; *Early Dutch green*; *Dwarf blue Prussian*; *Early green*. — This grows between three and four feet high, is a most prolific bearer, and of excellent quality.

6. BLUE IMPERIAL. Syn. *Tall green Imperial*; *Dwarf Sabre*; *Dwarf green Imperial*; *Dwarf blue Imperial*; *Dwarf blue prolific*; *Dwarf blue Marrow*; *New Sabre*; *Blue Sabre*; *Scimetar*; *New improved dwarf Imperial*. — This variety grows between three and four feet high, is very strong, with short joints; the pods are large, dark green, and well filled; it is an abundant bearer, and of excellent quality, and comes into use the same time as the Blue Prussian, with which variety it is often confounded, but it is of a more robust habit, and continues a shorter time in bearing.

7. BRANCHING MARROW. Syn. *New dwarf Pea*; *Prolific Isle de France*. — This grows between eighteen inches and two feet high, very strong, with short joints; the pods are much larger than any other of the dwarf peas, and fill well; it is an abundant bearer, of excellent quality, and is the earliest of the Marrow Peas.

8. DWARF GREEN MARROW. Syn. *Early green Marrow*; *New extra green Marrow*; *Royal dwarf Marrow*; *Waterloo*; *New Wellington*; *New early green Marrow*; *Large American green Marrowfat*; *Master's Imperial Marrowfat*. — This grows between four and five feet high; the pods are large and well filled; it is an abundant bearer, and is of excellent quality.

9. KNIGHT'S DWARF MARROW. Syn. *Knight's new Dwarf*. — This grows between three and four feet high, strong and branching, with short joints: it is an abundant bearer, and of excellent quality; the seeds are very much wrinkled.

10. KNIGHT'S TALL MARROW. Syn. *Knight's late*; *Pois vide*. — This grows between six and seven feet high; the pods are large, broad, and well filled; it is very prolific, and of excellent quality; the seeds are large, and very much wrinkled.

11. TALL BLUE IMPERIAL. Syn. *New tall Imperial*; *Blue Union*; *Green Nonpareil*; *Tall Prussian*; *Spanish Patriot*. — This is a very late variety, growing between six and seven feet high, very strong, with short joints, and branches much; the pods are very large, and fill well: it is a good bearer, and of excellent quality.

12. DWARF SUGAR. Syn. *Ledman's Dwarf*. — This variety is of very strong growth, between three and four feet high, with short joints; the pods are of a middling size, roundish, and well filled: it is a good bearer, and of good quality, but very late:

13. NEW TAMARIND. — This variety grows between two and three feet high, strong and branching, with very short joints; the pods are very large, remarkably long, roundish, and fill well: it is an abundant bearer, and of excellent quality. This is a fine pea, and ought to be cultivated in every garden: it is very late; the seeds are white and large.

There is a new variety of pea sent out this spring by the Messrs. Cormack and Co., Nurserymen, New Cross. If it prove true to its reputed character, it certainly ought to be placed first; but as I have not had an opportunity of proving its merits, I will give their description of it. They call it the Prince Albert Pea, and say it is one of the earliest and best sorts extant; in proof thereof, a quantity put into the open ground on the 14th March (1842) was ready for use the 25th of April following, being only forty-two days from the time of sowing to the date of gathering for the table (?): it is moreover a good bearer, of excellent flavour, and highly advantageous for early forcing. They also recommend another new variety, called the British Queen, a wrinkled marrow, larger and more productive than any of Knight's varieties.

I might enumerate a score more varieties; but with a selection

from the above, and convenience to grow them, with due attention to successive sowings, a supply may be kept up from May till October.

Buckingham Palace Gardens.

ON THE PROTECTION OF SUMMER BEDDING PLANTS THROUGH THE WINTER ;

WITH A SELECT LIST OF PLANTS ADAPTED FOR THE FLOWER GARDEN.

By Mr. W. ANSELL.

THE month of September, or as early as possible in October, is the best time for placing half-hardy plants under protection ; for not only the coldness, but also the dampness of the weather, as it usually occurs after this period of the year, is very hurtful to delicate plants in pots, when they are fully exposed. The influence which the state of the weather has on these kinds of plants is very great : if they are exposed, the pots become saturated with water ; the consequence of this is, that the roots perish, and the plants are, therefore, rendered sickly, and frequently perish on the arrival of winter.

In providing a pit for their protection through the inclement season of winter, a place should be selected for it, which may be rendered as dry as possible, and where at the same time it would be sheltered from the north winds ; it should be so constructed, that the plants would be elevated above the surface of the exterior ground, and not sunk beneath it, as is frequently the case, and this will provide for the more ready emission of dampness and free circulation of air. The bottom should be concreted to the thickness of six inches, and the surface should form an inclined plane towards the back, for the damp will more readily escape there ; a channel should be made to extend the whole length of the pit, connected with a small aperture through the wall at the lowest extremity ; above the concrete put on a layer of coarse gravel or stones, regulating its thickness by the height of the plants ; and on the top of this place a thin layer of coal-ashes. In making these arrangements, always bear in mind that plants require to be placed near the glass, not only to secure a due share of light, but also to secure an additional advantage

of no small importance, — viz. the drying up the damp, from the effects of which far more plants perish during the winter, than from any other cause.

In order to exclude the frost, make up a thick casing quite to the top, and all round the pit : this may be formed of dry leaves and fern, or any other dry litter ; it will be necessary to provide some portable covering to prevent the wet from getting into the casing ; and the bottom should be rendered available for the egress of moisture from the wall of the pit. The best covering for the glass is dry rubbish, hay, and a mat on the top of that to keep it dry, and prevent its being scattered by the wind : these materials should always be placed under cover, when it is likely to be wet. Particular attention should be paid to having the pits uncovered whenever the weather will admit ; and also to give air copiously on every favourable opportunity.

The whole of the plants in the accompanying list may be preserved in the pits or frames, with the exception of those marked with an (*) ; the latter require to be placed on a dry airy shelf in a greenhouse. The Tigridias and Gladiolus, which seldom ripen their bulbs in this climate, should be carefully taken up after the first frost, and be either potted or laid by in sand, under the stage of the greenhouse, or in any sufficiently dry position secure from frost.

SELECT LIST OF PLANTS ADAPTED FOR BEDDING OUT.

Name.	Colour.	Height in feet.	Native country.	Time of flowering.
<i>Alonsoa acutifolia</i> - -	scarlet	2½	Peru	May to Oct.
<i>incisifolia</i> - - -	—	2	Chili	—
<i>linearis</i> - - -	—	2	Peru	—
<i>Agathæa cœlestis</i> - -	blue	2	C. G. H.	—
<i>Anagallis indica</i> - -	—	1	Nepal	May to Sept.
<i>Monelli</i> - - -	—	1	Italy	—
<i>cærulea grandiflora</i> -	—	1½	Gard. hyb.	—
<i>Marryattæ</i> - - -	flesh	1	—	—
<i>speciosa</i> - - -	scarlet	1½	—	—
<i>Philipsii</i> - - -	blue	1	—	—
<i>Bouvardia triphylla</i> -	scarlet	2	Mexico	May to Oct.
<i>Calceolaria rugosa</i> - -	yellow	2	Chili	April to Nov.
<i>angustifolia</i> - - -	—	2	—	—
<i>thyrsiflora</i> - - -	—	1½	—	—
<i>viscosissima</i> - - -	—	2	Gard. hyb.	—
<i>salvifolia</i> - - -	—	2	—	—
<i>Stewartii</i> - - -	spotted	1½	—	—
<i>Standishii</i> - - -	—	2	—	—

Name.	Colour.	Height in feet.	Native country.	Time of flowering.
<i>Cælestina ageratoides</i>	light blue	3	New Spain	June to Oct.
<i>Coreopsis diversifolia</i>	yellow	2	N. America	May to Oct.
<i>Fuchsia globosa</i>	crimson	2	Gard. hyb.	—
<i>pumila</i>	—	$\frac{1}{2}$	—	—
<i>Brewsterii</i>	—	2	—	—
<i>Dropmoreana</i>	—	$1\frac{1}{2}$	—	—
<i>Gladiolus psittacinus</i>	orange	3	Natal river	July to Sept.
<i>cardinalis</i>	crimson	$2\frac{1}{2}$	C. G. H.	—
<i>byzantinus</i>	purple	2	Turkey	—
<i>Gaillardia picta</i>	dark red	2	Louisiana	May to Oct.
<i>Gazania rigens</i>	orange	1	C. G. H.	—
<i>pavonia</i>	yellow	1	—	—
<i>uniflora</i>	—	1	—	—
<i>Heliotropium peruvianum</i>	lilac	2	Peru	—
<i>Isotoma axillaris</i>	blue	$\frac{1}{2}$	N. Holland	—
<i>Lobelia unidentata</i>	violet	$1\frac{1}{2}$	C. G. H.	—
<i>speciosa</i>	purple	3	Gard. hyb.	—
<i>fulgens</i>	scarlet	2	Mexico	—
<i>splendens</i>	—	2	—	—
<i>propinqua</i>	—	4	Gard. hyb.	—
<i>igneae</i>	—	3	—	—
<i>syphilitica</i>	blue	2	Virginia	—
<i>bicolor</i>	—	1	C. G. H.	—
<i>Erinus</i>	—	$\frac{1}{2}$	—	—
<i>gracilis</i>	—	$\frac{1}{2}$	N. Holland	—
<i>ramosa</i>	—	1	—	—
<i>decumbens</i>	—	$\frac{1}{2}$	C. G. H.	—
<i>Lantana Sellowii</i>	purple	1	Montevideo	June to Oct.
<i>Mimulus roseus</i>	rose	$1\frac{1}{2}$	California	—
<i>roseo-cardinalis</i>	deep rose	3	Gard. hyb.	—
<i>Harrisonianus</i>	—	2	—	—
<i>Mesembryanthemum</i> , several varieties.				
<i>Mahernia incisa</i>	scarlet	$\frac{1}{2}$	C. G. H.	—
<i>Nierembergia calycina</i>	white	$\frac{1}{2}$	Uruguay	—
<i>gracilis</i>	—	$\frac{1}{2}$	—	—
<i>filicaulis</i>	lilac	1	B. Ayres	—
<i>Oxalis floribunda</i>	rose	$\frac{1}{2}$	Brazil	May to Oct.
<i>Bowiei</i>	—	1	C. G. H.	—
<i>Pelargonium</i> , Frogmore } <i>Scarlet</i> - - - - - }		1 to 2	Gard. hyb.	
<i>Cooper's nova pumila</i>		1 to 2	—	
<i>Frost's compactum</i>		2 to 3	—	
<i>superba</i>		2 to 3	—	
<i>Oldaker's Lady Sefton</i>		2 to 3	—	
<i>Earl Grey</i>		2 to 3	—	
<i>pink nosegay</i>		2 to 3	—	
<i>scarlet nosegay</i>		2 to 3	—	
<i>Daveyanum</i>		2 to 3	—	
<i>Yeatmanianum gran-</i> } <i>diflorum</i> - - - - - }		1	—	
<i>Prince of Orange</i>		1	—	
<i>Petunia nyctaginiflora</i>	white	2	S. America	—
<i>violacea</i>	rose purple	2	B. Ayres	—
<i>prænitens</i>	red	2	Gard. hyb.	—
<i>rosea</i>	—	2	—	—

Name.	Colour.	Height in feet.	Native country.	Time of flowering.
<i>Petunia violacea superba</i> -	red	4	Gard. hyb.	May to Oct.
<i>grandis</i> -	—	4	—	—
<i>Pentstemon gentianoides</i> -	deep rose	2	Mexico	June to Oct.
<i>coccinea</i> -	scarlet	2	—	—
<i>Ruellia formosa</i> -	—	1	Brazil	June to Sept.
<i>Salvia fulgens</i> -	—	4	Mexico	May to Oct.
<i>splendens</i> -	—	4	—	—
<i>pseudo-coccinea</i> -	—	3	S. America	—
<i>Grahamii</i> -	purple	3	Mexico	—
<i>dulcis</i> -	pink	3	—	—
<i>chamædryoides</i> -	blue	1	—	—
<i>patens</i> -	—	4	—	—
<i>Selago Gillii</i> -	red	1	S. Africa	—
<i>fasciculata</i> -	light blue	2	C. G. H.	—
<i>Senecio elegans plenus ruber</i>	red	1	—	—
<i>albus</i>	white	1	—	—
<i>Tournefortia heliotropioides</i>	lilac	1	B. Ayres	—
<i>Tigridia pavonia</i> -	orange	1	Mexico	May to Sept.
<i>conchiflora</i> -	yellow	1	—	—
<i>Tropæolum minus flore</i> }	scarlet	1½	Peru	June to Sept.
<i>pleno</i> -	—	—	—	—
<i>majus flore pleno</i> }	orange	2	—	—
<i>Verbena Melindres</i> -	scarlet	½	B. Ayres	May to Oct.
<i>superba</i> -	—	1	Gard. hyb.	—
<i>major</i> -	—	1	—	—
<i>Twædicana</i> -	crimson	1	Brazil	—
<i>incisa</i> -	pink	2	Panama	—
<i>Drummondii</i> -	lilac	2	Texas	—
<i>teucroides</i> -	blush	2	S. America	—
<i>rosea</i> -	rose	2	Gard. hyb.	—
<i>carnea</i> -	flesh	2	—	—
<i>venosa</i> -	purple	2	B. Ayres	—

GARDEN HYBRIDS.

Name.	Colour.	Name.	Colour.
<i>Verbena maxima</i> -	scarlet.	<i>Verbena purpurea</i> -	purple.
<i>formosa</i> -	—	<i>picta</i> -	—
<i>Hislopeana</i> -	—	<i>Charlwoodii</i> -	—
<i>splendens</i> -	—	<i>unique</i> -	—
<i>Grenvillii</i> -	rose.	<i>Burleyana</i> -	white and pink.
<i>Buistii</i> -	—	<i>Antwerpensis</i> -	—
<i>lateritia</i> -	brick red.	<i>British Queen</i>	white.

Royal Botanic Gardens, Regent's Park, Nov. 2. 1843.

LIST OF ORCHIDÆ.

(Continued from page 44.)

158. *Eria pubescens*. (Derived from the flowers being woolly.) Plant trailing, with swollen bulbous stems, leaves placed near the apex, mostly in sevens; one foot long, and better than one inch broad; flowers in a short upright raceme, of a pale yellowish white. This species is better adapted for wood-work than for pot cultivation, on account of its trailing habit; it requires a liberal supply of water while growing, with a temperature of 65° to 70°. — *A Native of India*.
159. *Eria stellata*. (Derived from a star.) Plant with pseudo-bulbs; leaves eighteen inches long; flower spike upwards of two feet long, covered with dirty white flowers bearing a resemblance to stars: it is a plant of no beauty, but rather fragrant, and will grow in any soil, providing moisture is given to it freely; the same temperature will do for this as for the above. — *A Native of India*.
160. *Eria rosea*. (Derived from being rose-coloured.) Plant pseudo-bulbous, bulbs about one inch long; leaves single, one foot long and one inch broad, rather crisp and upright; its flowers are produced on a short spike, of a whitish colour slightly tinged with rose, with a mark of yellow in the labellum. This species does best with pot cultivation, in a mixture of sphagnum and rotten leaves, with the same temperature as the others. — *A Native of China*.
161. *Eria bipunctata*. (Derived from being two-spotted.) This plant is more worthy of cultivation than the others, and its flowers are rather larger and spotted; it requires pot cultivation, with the same treatment and temperature as the others. — *A Native of India*.
162. *Eria convallarioides*. (Solomon's seal-like.) This plant is destitute of bulbs; its stems are from one foot to eighteen inches long; leaves alternately towards the summit of the stem; the flowers are produced on the under-side, from which it takes its specific name; it is of no beauty, but rather singular in appearance when in flower: the same treatment and temperature will do as for the others. — *A Native of India*. This genus comprises upwards of thirty species: they are not very beautiful, but are still valuable for their fragrance; as they are of so free a growth, any house will do for them, providing it gets no lower than 60°, but should be liberally supplied with water, and an occasional syringing over-head, which will greatly increase their growth, and in their resting season they do not require to be kept so dry as other genera do.
163. *Fernandezia elegans*. Plant destitute of bulbs; stems from six to ten inches long; leaves alternate, placed close together, of a light green colour: it is very similar in form to a plait of straw; flowers are produced in clusters from the joints of the stem near the summit, and are of a pale yellow, slightly spotted with brown in the centre of the flower. It will do either in a pot, or hung up, but should in either case be placed in a cool and airy part of the house. It does not require much water, with a temperature of 65° to 70°. — *A Native of Trinidad*.
164. *Fernandezia acuta*. (Pointed.) This plant is very similar to the above, both as regards the growth and flowering, except that it is not so free a flowerer. The same treatment and temperature will also do for it. — *A Native of Trinidad*.
165. *Fernandezia lunata*. (Moon-shaped.) This species bears a great resemblance to the others, particularly in the growth; the flowers are a

little different both in point of form and marking. The same treatment and temperature will do for this as for the others. — *A Native of Brazil.*

166. *Fernandezia robusta.* (Derived from its strong growing.) This plant is a deal stronger in growth than the others; the stems generally exceed one foot; the leaves are larger, and not so compact; the flowers have very little difference, only a little larger. It will succeed better with pot culture than the others, in a mixture of sphagnum, turfy peat, and a little charcoal; it does not require much water. This genus, I believe, comprises no more than four species, all partaking of the same character both in growth and flowering. From the want of air while growing, they are often found in a sickly condition, and when once brought to that point, can seldom be recovered: a good drainage is of much service to this genus, as their roots are rather tender, and apt to rot if water remains in a stagnant state about them.

167. *Galeandra Bauerii.* Plant pseudo-bulbous, bulbs about three inches long and rather better than one inch broad, tapering a little towards the summit; leaves in pairs, eight inches long, of a pale green colour; flowers produced singly on a stem four inches long, intermixed with various colours. This species is rather of a delicate nature, and should for that reason be grown in a basket in a mixture of sphagnum, turfy peat, and rotten wood, with but a moderate supply of water while growing. A temperature of 70° to 75° is required to grow it to perfection. — *A Native of French Guiana.*

168. *Galeandra Devonianum.* This plant is very different to the other in habit, as it produces bulbous stems from one foot to eighteen inches long; its leaves are alternate up them, of a lanceolate shape. It is a valuable species, but rather a difficult one to grow; it requires pot culture, with a good drainage, and a mixture of sphagnum, turfy peat, with a little half-rotten leaves, and occasionally syringing it during its growth; its temperature should be the same as for the other; this genus contains only two species at present; both of them should be in every collection. — *A Native of Guiana.*

169. *Govenia superba.* Plant pseudo-bulbous, bulbs round, and sending the leaves up from the centre of each, nearly two feet long, of a purplish colour; flower spike better than one foot long. This species, as well as the rest of the genus, which is composed of six species, requires pot culture, in a mixture of sphagnum, turfy loam, and rotten leaves in equal parts, and a liberal supply of water while growing; when in a dormant state, they require but little.

JOHN HENSHALL, K—P—Y.

(*To be continued.*)

THE GARDENING INTERESTS.

NOTHING short of infatuation can lead the professor of any science to believe that his individual interests are separable or distinct from the interests of the science he pursues. It is true there are some so blinded by self-love, who, if they happen to stumble upon a useful discovery, assume an air of mystery, and endeavour to preserve the knowledge of it exclusively to themselves, thinking thus to secure all the advantages — a confined

and utterly erroneous idea, for knowledge, like riches, is only profitable when in circulation, and the wider its influence is extended, the greater are its returns. So also a man may (and there are many who do) trust entirely to his own resources, and after persevering with all the energy and zeal he possesses for a lengthened period, find, on comparing notes, that much he before deemed rapid progression, was at the best but stationary, if not retrograde.

To no science do these axioms apply with greater force than to Horticulture, an art so dependent on an accumulation of evidence from so many and such opposite sources, and whose professors or followers derive their best information one from another, according to the result of practices, beneficial or injurious. Hence it appears, the true interest of Horticulture depend very much on an extensive dissemination of the means and results occurring in its practice.

We had a thought, on commencing this paper, of noticing the interests of the gardener, distinct from those of the science ; but they are so amalgamated, so essentially the same, as to preclude the possibility of distinguishing or separating : individual interests will depend mainly on the amount of skill the cultivator can bring to bear on the subjects of his charge, and this it must be understood is entirely acquired skill. There is no spontaneous effusion of the mind or fancy in gardening affairs : all knowledge of them is derived from assiduous observation and attention to the sayings and doings of others ; and the means by which this knowledge is to be obtained by an individual, are precisely the same as those for the whole body, proving the interests of one gardener to be identified with the interests of the whole, or, as it is usually denominated, the science.

If then the prospects of a young man embracing the profession, depend so entirely on this accumulation of results, on which he has to build his future skill, how important it is that he should well consider and ascertain the best means of arriving at the required information ; and this it is we are desirous of showing.

The importance of the inquiry is not, however, confined to the mere tyro : it is equally necessary that those who have pursued it for years to their advantage should still continue the onward pressure ; in a cause so rapidly advancing as is this, no one of its professors, at all alive to their own or its interests, must

remain stationary : there is still and ever will be much to be learned.

Books, indeed, are to Horticulture, as to every other matter connected with civilised life—the vital principle ; but what we would cordially recommend to the notice of all concerned, is the highly beneficial effects resulting from the formation of societies among gardeners for mutual instruction : here by contributing, each according to their several capacities, all are informed, enlightened, and benefited ; and here too, those feelings of cordiality and brotherly love, so honourable to human nature, are engendered and preserved, esteem and emulation going hand in hand. But we need not enlarge on the benefits : the question is gaining the attention it deserves, and was it necessary, we could point for confirmation to the Regent's Park Gardeners' Society, where in the short space of two years so much has been effected by the vigilance and perseverance of the officers and members, that a library has been commenced, and the foundation of an extensive herbarium formed : the value of the information received by each member may be estimated by the articles which appear in our pages—sterling practical knowledge.

But it is not here we would stop : we desire to see the benefits increased to an incalculable extent. By uniting these societies, that is, wherever a society is established, let it immediately begin a correspondence with all others previously established, and thus arrangements may be made that will bring the essays or other productions of the aggregate body before each individual of the respective societies : there is nothing difficult in the working of this, and we trust to see it speedily carried into effect. The society already named entertain the same view of the matter, and, we believe, are prepared to open a correspondence with any and all other societies professing the same beneficial end ; and we can readily imagine in it, from its metropolitan position, the embryo of a great and important movement for the elevation of gardening and gardeners. It may be asked, what will be the especial advantages accruing from an union. We need only mention one, beside the very apparent increase of information each society would derive from being put in possession of the papers of all the corresponding members—we advert to the library, the expense of which, utterly precluding anything more than a mere selection in the hands of a single association, would by an union admit of being formed on an extensive scale,

to the advantage of all subscribing. The necessity and expense of books are evils severely felt by gardeners; but here is a method relieving him from much of the evil, and retaining all the good; indeed, we feel so well assured of the successful working of this mode of increasing the spread of knowledge among gardeners, that we again earnestly recommend it to the attention of all engaged in the delightful pursuit.

ED.

LIST OF NEW PLANTS.

ORCHIDACEÆ. — *Gynandria Monandria*.

Bolbophyllum macranthum. This singular plant was imported by Messrs. Loddiges from Singapore, and is closely allied to both *B. leopardinum* and *affine*. From each it differs in its much more fleshy and larger flowers, whose stalk is considerably longer than the petiole.

The flowers appear in March, and expand so flat, that they seem as if they had been pressed between paper. In the centre they are a pale lemon colour, but towards the tips they are much mottled with dark chocolate-coloured spots. — *Bot. Reg.*

NELUMBIACEÆ. — *Polyadelphia Polygynia*.

Nelumbium caspicum. A very splendid stove aquatic from the mouth of the Volga, near Astrachan, producing very large flowers, the petals of which are obovate, white, slightly tipped with deep rose at the extremities, while the carpels (nine in number) and filaments are bright yellow. It was flowered by Messrs. Rollison, of Tooting, in August, 1843.

The plant requires to be kept dry during winter. Before putting it into the water, which ought to be done about the beginning of February, it should be re-potted in sandy loam, mixed with pieces of sandstone to act on the same principle as drainage, for the water in which it is grown requires to be renewed once or twice a week, and should never be allowed (especially in summer) to be below 80°. About the end of October, when the leaves begin to decay, the pot should be lifted out of the water and dried off gradually: as the soil becomes dry it will crack, or leave the sides of the pot, which should be filled up with sand, in order to cover many roots that would otherwise be exposed. — *Bot. Reg.*

COMBRETACEÆ. — *Decandria Monogynia*.

Quisqualis sinensis. This plant was exhibited before the Horticultural Society in July, 1841, by Messrs. Lucombe, Pince, and Co. of Exeter, who stated that it is a more compact grower than the old *Q. indica*, and therefore more desirable for cultivation in pots. It manifestly differs in its smoother leaves and branches, and in the larger size of its flowers, which are morcover of a much deeper rose colour. — *Bot. Reg.*

BERBERACEÆ. — *Hexandria Monogynia*.

Berberis pallida. This plant, in its native country, forms an evergreen shrub from five to six feet high, and is found but sparingly on mountains near Cardonal and Zimapan in Mexico. Mr. Hartweg, who introduced it, also met with it near the hot springs of Atotonilco el Grande, but nowhere in any quantity.

That gentleman informs us, that it is easily distinguished by its dry hard leaves and pale yellow flowers. In our gardens its appearance is vastly improved, and it will probably prove as handsome as others. It grows freely when potted in a mixture of sandy loam and leaf mould, to which is added a small portion of rough bone dust. Being at present extremely rare, it has not been tried on the open border; but the appearance of the plant leads us to suppose that it may be at least as hardy as *B. fascicularis*. Up to the present time it has been kept in a cold pit in the garden of the Horticultural Society. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria.*

Bromheadia palustris. — In appearance this plant has the aspect of *Epidendrum elongatum*, and, like it, has the whole of the upper part of the stem provided with closely pressed distant sheaths instead of leaves, on which the spike of flowers is arranged. The latter is very rigid, between two and three inches long, regularly zig-zag, with a short hard tooth-like bract at each bend. The flowers are about an inch long, white, and rather drooping; spreading quite open. The labellum, in which alone any colour resides, is straw-coloured on the middle lobe, and violet at the tips of the lateral lobes; along the middle, as far as the separation of the lobes, it is convex, and covered with purple down, while the disk of the middle lobe is broken up into yellow granulations. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria.*

Houlletia Brocklehurstiana. According to Dr. Lindley, in the Sertum Orchidaceum, Mr. Wanklyn, of Crumpsall House, Manchester, had the credit of originally introducing this noble plant from the Brazils. It was first flowered by Mr. Brocklehurst, of the Fence, Macclesfield, after whom it is called. The generic name was given to a nearly allied, if not the same, species, by M. A. Brongniart, in honour of M. Houillet, a French gardener, who introduced the original species to the Jardin des Plantes at Paris, from the Corcovado of Brazil.

The pseudo-bulbs are rather small for the size of the plant, ovate, deeply furrowed, and more or less clothed with large lacerated scales; upon the top of this bulb is, as it were, articulated, a large plaited broadly lanceolate membranous leaf, borne on a long cylindrical footstalk. The flower stem proceeding from the base of the bulb rises above two feet high, including the inflorescence, which forms a spike or raceme of six to eight large handsome blossoms. Petals and sepals nearly uniform, elliptic-ovate, of a rich fulvous colour, spotted all over, within and without, paler on the outside; lip of a singular form, having a narrow and rather saccate base, with two long subulate horns, directed upwards towards the column, and which may be considered two lateral lobes, while the intermediate or terminal lobe is triangular. The colour of the lip is variable, yellow spotted with deep purple; sometimes the terminal lobe is almost wholly purple. — *Bot. Mag.*

ORCHIDACEÆ. — *Gynandria Monandria.*

Disa grandiflora. A very beautiful terrestrial orchidaceous plant, from the Cape of Good Hope, with large scarlet and yellow flowers, resembling somewhat those of *Tigridia*. It may be grown in a light greenhouse, but is extremely difficult to keep in a blooming state. — *Bot. Mag.*

LEGUMINOSÆ. — *Diadelphia Decandria.*

Phaseolus lobatus. This plant was raised from seeds sent by Mr. Tweedie, from Buenos Ayres to the Glasnevin Botanic Gardens, where it flowered in September, 1843. It is a twining plant, bearing deeply-lobed foliage, and short yet dense racemes of yellow pea-shaped flowers, the keel of which is curiously twisted in a spiral manner, like the shell of the *Helix* or snail. — *Bot. Mag.*

TRIDACEÆ. — *Triandria Monogynia*.

Gladiolus gandiensis. Has probably received its name from having come from Ghent to this country. It is evidently of hybrid extraction, and *G. communis* is most likely one of its parents. To that species, indeed, it bears much resemblance, but has more of the open flowers of *G. pudibundus* with a slight indication of its tints. Whatever may have been its origin, it is certainly a noble plant, and flowers in great abundance. — *Pax. Mag. Bot.*

[The habit of the plant and colour of the flowers remind us more of an improved *G. psittacinus* than either of the species mentioned.—Ed. F. J.]

ONAGRACEÆ. — *Octandria Monogynia*.

Fuchsia (hybrid vars.), *Attraction*, *President*, and *Colossus*. Mr. John Standish, nurseryman, of Bagshot, obtained the above kinds in the following manner. In 1841, he raised a number of seedlings from Thomson's *Formosa elegans*, crossed by *Corymbiflora*; they were very pretty and free growers, but not particularly different from the hybrids of *F. fulgens*, except that they seeded abundantly, which those hybrids rarely do. Having saved some of those seeds without any fertilising, Mr. Standish was astonished to find, in 1843, that the produce had acquired so much larger leaves and flowers as to be nearly twice the size. They are more soft-wooded than the hybrids of *fulgens*, and exhibit the interesting fact, that instead of degenerating when propagated by seed without being fertilised, they improve to a very great degree. *Attraction* has the pleasing aspect of the old *F. globosa*, with longer and more acute as well as reflexed sepals, and immensely larger corollas, which are of the richest purple. *President* is a longer and bolder flower, more in the way of *F. Standishii*, with a much better corolla. *Colossus* has a shorter tube, less reflexed sepals, and a fine purple (crimson) corolla. — *Pax. Mag. Bot.*

TO CORRESPONDENTS.

SIR,—The very different periods through which seeds preserve their vitality has long been a matter of interest to me; can you give me an idea as to what it may be attributed, that one kind of seed may be preserved good for almost an indefinite time, while another kind becomes useless in two years.—AN ADMIRER.

One of the causes for this difference exists in the formation of the seed itself: those kinds having a thick woody epidermis resist the influence of atmospheric changes, than which nothing destroys the vitality of seeds sooner, while those having only a thin soft skin are affected by these fluctuations which act by exciting the vital energy of the seed, and then from want of aliment it necessarily perishes. For the preservation of seeds it is necessary that they should be placed in a situation as remote from these changes as possible; glass bottles securely sealed, or tin boxes wrapped in some material impervious to air, are perhaps the best means. Last season we raised plants from seeds gathered in China fifteen years before; these had been kept in small porcelain vases filled tightly with a substance resembling fine bone-dust or pounce, the necks of the vessels being covered with oiled paper.

S. X. — You will find hand-glasses most convenient for protecting Auriculas while in bloom; they require plenty of air and light, and to be carefully preserved from rain, wind, and sun.

CANTAB. — It is too late to do any thing with Ranunculuses this season; remind us of the list next autumn, and you shall have a good one. You may fill the bed with German Asters, they will be useful for the September exhibitions.

F. THOMPSON. — We have repeatedly expressed our opinion that Guano is not suited to pot cultivation : it is too strong, and even when reduced is a dangerous plaything ; use good fresh earths, and you will not need it, or if you must have artificial manures try bone-dust or charcoal.

LITERARY NOTICE.

Theory and Practice applied to the Cultivation of the Cucumber in the Winter Season. A treatise by MR. T. MOORE, of the Royal Botanic Gardens, Regent's Park, pp. 60. London, Groombridge.

THIS subject has engaged the attention of many writers, and has been given to the public in various forms, but never yet in a manner we could so cordially approve as the present.

The prevailing fault, in works of this description, is an empirical ordering of the detail, making success to depend entirely on mere manual operations ; or a sort of attempt to arrive at effects without considering the causes. Now, for a man to understand a subject thoroughly, so as to have a reason for all he does, it is requisite that he should be able to trace all results, whether of good culture or failure, to the causes from which they arise ; and to impart this knowledge is the groundwork of the treatise before us, in which Mr. Moore has very clearly shown the necessity of studying the theory, to insure the desired results in practice. The work contains much information under the several headings ; viz. Structures, Propagation, General Principles of Culture, Soil, Application of Water, Temperature, Admission of Air, &c., and a chapter on Persian Melons. A very neat engraving of a cucumber house is given in illustration of the chapter on Structures, which possesses much original merit.

The matter is very ably and modestly written, and is especially addressed to young gardeners ; but we do not hesitate to say it should be read by all.

CALENDAR FOR APRIL.

STOVE. It is probable that the remarks made last month will, in many cases, be still applicable ; for the re-potting of

plants should be attended to whenever it may become necessary. It is usual, as the season advances, to indulge freely in the application of stimulants, such as increased heat and moisture; care should be taken not to fall into an extreme in respect to the degree applied. The growth of climbing plants of all kinds should be particularly attended to, tying up and pruning them as they may require; they should, in all cases, be furnished with supports appropriate to the position they are to occupy. Temperature 65° at night, 70° to 85° by day.

GREENHOUSE. Both here, and in the stove, propagation should be going on briskly, both by means of seeds and cuttings. In endeavouring to secure a free admission of air, avoid submitting the plants to the chilling influence of piercing winds, which are particularly injurious to them when forming their young and tender shoots. It is important, as the plants extend their growth, to fix it in its proper position with reference to the general figure of the plant; and the best means of effecting this are those which are the least conspicuous. The plants may be re-potted whenever the roots become numerous.

FLOWER-GARDEN. Besides the planting of all hardy plants, and the "dressing" of all flower beds and borders and shrubberies, there will be abundant work to be done in the propagation of half hardy plants in frames, on slight hotbeds, ready for "bedding out" in the flower garden. The cuttings should be struck off quickly, potted, and gradually inured, so as to bear exposure well, as soon as it is safe to expose them fully. Half hardy annuals should be sown in quantities, for a similar purpose, and they should be treated in a similar manner. Both these, and the former, should be reared as hardy in their constitution as possible, so that they may grow away freely when planted out. Hardy annuals may be sown in the open ground, in the places where they are required to bloom; they must be thinned out, as soon as it can be done, so as not to crowd each other, and some protection should be afforded from snails and slugs; the best remedy is hand picking at night. Florists' flowers should be protected from heavy rains, especially those which are advancing to bloom. The mowing of grass lawns, destroying of weeds, and sweeping of walks, should never be neglected; on such routine operations depends much of the effect of all other arrangements.


T. M.



LOXINIA ROSEA ALBA

THE
FLORIST'S JOURNAL.

MAY, 1844.



THE GLOXINIA.

WITH AN ENGRAVING OF G. ROSEA ALBA.

PERHAPS, never were the expectations of cultivators raised to a higher degree, than when their anticipations of hybrids of this lovely genus was first given life to, by the appearance of *G. rubra*. Thousands of seedlings were grown the following season, and many have continued to produce them annually ever since,—ourselves among the number: but how few have succeeded in producing a variety worth preserving! It is true, some consolation may be gleaned from the failure, but it is a selfish one—that the value of the few produced has been thus enhanced,—for it is not unlikely that, had cross-breeds been originated as readily as was at first imagined, they would have become so multitudinous by this time, as to have materially affected the general estimation in which they are held. Yet, however true this may be, and without regarding how particularly the “fortunate few” may hug themselves with this reflection, we must endeavour to elicit some other and more useful information from the disappointment: We have heard of no more than three varieties being raised at all worth keeping, and all of these we have had opportunities of seeing. They are each one pale rose-coloured, varying a trifle in the shade,—all evidently the offsprings of a cross between *rubra* and *candida*. But of the many hundreds we have seen flowered from seed of

rubra and *speciosa*, or any of its varieties, not one but has degenerated into something worse than the coarsest blue of *speciosa*, without a tinge of the bright colour of its other parent. It may be imagined that in many instances, the proper cross-impregnation was not effected, and that therefore the plants raised were no more than seedlings of one parent; such, indeed, may have been the case with several, but we are aware of instances in which proof was given to the contrary, by the seed-vessel swelling to an unusual size—nearly twice that of others which were not artificially fertilised; still the results were the same. However, all astonishment at this perverse stubbornness must cease, when we find that *rubra* is itself but a variety of *speciosa*, which is positively proved by its own seed producing blue varieties; not that this is a definite cause of the non-production of hybrids—for there are many instances in which varieties of the same species hybridise freely—but by some peculiar characteristic these two will not mix, and therefore, in continuing the attempt to obtain cross-bred Gloxinias, it will be necessary to select some other well-defined species to supply the parent place hitherto occupied by *speciosa*. Perhaps something desirable may occur by substituting *caulescens* or *hirsuta*: this last, indeed, appears a very desirable species, as a combination of its singular hairy foliage and pale purple flowers with the widely different aspect of *rubra*, must produce something at once novel and interesting; indeed, we think this intermixture more promising than any other, and it shall have our best attention in the ensuing season.

We have on several occasions promised to give an idea of the mode of effecting artificial impregnation, and as the season for such operations is at hand, we cannot have a better time to redeem our promise: to the practised cultivator it will of course be unnecessary, but we trust he will excuse the repetition on remembering his own first attempt. It is with the sexual organs alone of the plant that the hybridiser has to deal; these, on examination, will be found to consist of two kinds—the stamens or male organs, and the style or female organ; on the points of the stamens will be found the anthers, containing the pollen or fructifying dust; this, by being conveyed from one flower and applied to the stigma (situate on the top of the style) of another, produces cross-bred seed. To perform the operation in a sure manner, the flower intended to bear the seed should

have its anthers cut out as soon as possible after the opening of the flower, and after standing until the stigma is ripe, (to determine which is the only difficult part of the operation,) the pollen of the flower it is desired to cross with is then applied by means of a fine camel-hair brush, observing to lay it evenly over the whole surface of the stigma. To prevent accidental impregnation, which is very likely to occur, from wind, insects, &c., it is always necessary to protect the flower that is to bear the seed with a covering of thin gauze, or some such material, unless it is standing under glass, and in a situation not subject to roving visits from bees, butterflies, &c.

Our present illustration, *G. rosea alba*, is an hybrid obtained by Mr. Rendle, Nurseryman, of Plymouth, from seed of *candida* impregnated with the pollen of *rubra*; its beautiful intermediate colour at once proclaims its origin, and we have no doubt it will speedily become a favourite. This is one of the very few instances of any other than *speciosa* being thought of as a parent for the future progeny; and the success attending its adoption must have great weight in determining future attempts of the same kind.

[For a detailed account of the culture of this handsome and interesting genus we must refer our readers to page 245 of Vol. III.—ED.]

LIST OF ORCHIDÆ.

(Continued from page 73.)

170. *Grammatophyllum floribundum*. Plant pseudo-bulbous, bulbs seven inches long, and better than three inches broad, rather flat, and of a shining green colour; leaves mostly in fives, about eighteen inches long and two inches broad, a little waved; the raceme half-pendent, two feet long, and produced from the base of the bulb; flowers verticillate along the raceme, the colour greenish yellow, veined, and blotched with brown. This species is worth cultivation: it requires a strong heat and plenty of water during its growth; it may be grown in a pot, in a mixture of sphagnum, turfy peat, rotten wood, and a little charcoal, with a temperature of 70°. — *A Native of Pulo Dinding.*

171. *Grammatophyllum speciosum*. This plant is much similar in growth to the above, but its flowers are more showy, from which circumstance its specific name is derived: it may be treated in the same manner. These are the only two species that this genus is composed of; but a variety has lately come out, called *G. multiflorum tigrinum*, the colour of which is nearly as rich as that of *Oncidium papilio*: it requires the same treatment as the others. This genus should have a particularly good drainage, as the roots are liable

to rot if kept too damp; still a shady place is of great service in the growing season.

172. *Grobya Amherstii*. Plant pseudo-bulbous, bulbs two inches long and round, leaves in threes and fours, one foot long, and half an inch broad: this species requires pot cultivation, in a mixture of sphagnum, turfy peat, and a little charcoal: it requires a liberal supply of water when growing, with frequent syringing, but should be kept rather dry during the resting season: temperature while growing 65°. — *A Native of Brazil*.

173. *Grobya galeata*. This species is pseudo-bulbous, and requires the same management, both as regards treatment and temperature, as the above. — *I believe, a Native of Brazil*.

174. *Gongora maculata*. Plant pseudo-bulbous, bulbs five inches long, and deeply furrowed, leaves in pairs, eighteen inches long and five inches broad, rather of an ovate shape: flowers produced from the base of the bulb on a long drooping raceme, verticillated along the raceme, of a buffish yellow, spotted with brown. This species will do either in a basket or pot, with a mixture of sphagnum, rotten wood, and turfy peat, and a liberal supply of water while growing, with a temperature of 65° to 70°. — *A Native of Demerara*.

175. *Gongora maculata var. alba*. Plant pseudo-bulbous, bulbs four inches long, a little furrowed; leaves in threes, one inch long, and rather better than four inches broad, of an ovate form; the raceme about three feet long, producing a large quantity of flowers, white, spotted with brown. This species requires the same treatment and temperature as the others. — *A Native of Guiana*.

176. *Gongora maculata var. lutea*. This plant is very similar in growth to the last, except that its leaves are rather longer, the raceme is not so long, and the flowers are a buffish yellow: it requires the same treatment and temperature. — *A Native of Guiana*.

177. *Gongora maculata var. sanguinea*. This is another species, very similar in growth, but differing in the colour of the flowers, which are, instead of brown, a dark red: it also requires the same treatment and temperature. — *A Native of Demerara*.

178. *Gongora atropurpurea*. Plant pseudo-bulbous, bulbs rather shorter than the others; the leaves are also shorter, and of an ovate form; the raceme produced in the same way, flowers of a dark purple, requiring the same treatment and temperature. — *A Native of Demerara*.

179. *Gongora Buffonia*. Plant rather smaller in growth than the others; its flowers are different in colour as well as form. This species seems to thrive well on a lump of turf, provided it is kept moist; it will also succeed with the same treatment and temperature as the others. — *A Native of Brazil*.

180. *Gongora nigrita*. Plant much like the others in habit, particularly *G. atropurpurea*; its flowers are darker, being almost black: it requires the same treatment and temperature. — *A Native of Demerara*.

181. *Gongora fulva*. This is a beautiful species; its growth is stronger, and the raceme is longer; its flowers are similar to *G. maculatum alba*; it requires the same treatment and temperature as the others. — *A Native of Oaxaca*.

This genus is composed of nearly twenty species, which are perhaps more singular in form than any other plants of the whole tribe; they are also easy of cultivation, only requiring plenty of pot room, and a liberal supply of water, with a good heat during the time they are growing.

JOHN HENSHALL, K—P—Y.

(*To be continued.*)

ON THE CULTIVATION OF FUCHSIAS.

As I am constantly deriving both pleasure and profitable information from the pages of your excellent work, I feel bound to offer in return the following remarks on the culture of that beautiful genus the Fuchsia, which, from their great popularity, I am induced to think may not be without some interest. There are some cultivators who, notwithstanding the immense advance that has lately been made in the culture of these charming objects, still manage to keep a-head of their competitors, continuing to produce specimens which, for luxuriance of growth and the brilliancy of their flowers, surprise every one: this I have found to depend on two conditions; first, the soil they are grown in, and secondly, the state of the atmosphere at the two periods of growing and blooming. I may as well here premise that, to grow Fuchsias to the perfection they are capable of attaining, it is essential to have a house devoted to them alone,—and I may ask, to what more deserving class of plants can an Amateur devote his greenhouse?—there is not a family that will yield the same continuance of splendour and delicate beauty with the same amount of trouble; it is well known they do not require more than half the attention of Pelargoniums, yet they continue to produce their lovely blossoms for three or four times as long. The house to be recommended for them is a small, low, span-roofed one, capable of holding, say fifty specimens, having a front shelf near the glass for the small plants, and a centre stage for the larger ones; it should be heated with an iron tank having a moveable cover, to allow the admission of steam at required times: these things are perhaps not absolutely necessary, but contribute most materially to the production of perfect specimens. The soil most conducive to the dark luxuriant foliage so much to be desired, and which is the great secret among the growers of this tribe, I have found to be—heath-mould, or what is commonly called peat: pure, unadulterated heath-mould, I can confidently affirm, is all that is necessary for the production of the finest specimens; this, chopped up roughly, and the plant allowed plenty of it, that is, a large shift each time, will insure a fine vigorous growth. Keeping these plants in heavy soil and small pots causes the

young wood to be small, and consequently soon hardened when they set about forming flower-buds — a thing to be avoided as much as possible in the early stages of the growth, which should be quick and succulent, so as to retain all the lower foliage: this rapid production of wood is greatly assisted by admitting every night sufficient steam from the tank mentioned to fill the house, which, condensing on the plants, covers them with a genial dew-like moisture, the benefits of which will be visible in a week. This treatment should be continued throughout the growth of the plants, until they have attained the required size, when it becomes necessary to diminish the supply of moisture, that the blooms may have proper brilliancy. They will now require constant shading from the sun, and, indeed, the shade may be applied occasionally even earlier than this with much advantage, for, although they are natives of the sunny hill-sides of Southern America, I have found that exposure to the sun retards the development of wood and induces a state of flowering—no matter what the size or age of the plant be—so that protection from its rays is necessary in the first instance, to allow the plant to make the rapid growth so essential to its beauty, and afterwards to preserve the colour of the flowers. The only period at which the full influence of the sun is desirable is just at the completion of the season's growth, for about a week or ten days, to throw them into flowering: of course, plenty of water must be given all the time the plants are growing and flowering, and, if steam cannot be admitted, the syringe should be used freely until the blooming time arrives: in short, their culture may be summed up thus, — a free open soil, and plenty of it, and a continually moist atmosphere. For the winter treatment I would recommend that they be cut down to within at most six inches of the base of the stem. This keeps them dwarf and bushy, besides inducing a stronger growth; and, after being thoroughly dried, they may be stowed away in a shed, or any other dry place impervious to frost, and their places may then be occupied with other plants required, either for turning out into the flower-garden during the summer months, or as a help to other houses that are crowded.

I subjoin a list of a few that may be termed indispensable,

And am, &c.,

F. T. C.

List of Fuchsias.

Formosa elegans.	Smith's Queen Victoria.
Stanwelliana.	Eppsii.
Ivery's Gem.	Magnifica.
Smith's Gigantea.	Chandlerii.
Girling's Candidate.	Bell's Prince of Wales.
Venus Victrix.	Rosea alba.
Harrison's Enchantress.	Smith's Paragon.
Brockmannii.	Tricolor.
Loudonii.	Laneii.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

ON THE CULTIVATION AND FORCING OF THE
VINE.

By Mr. D. DOIG.

HORTICULTURE has of late years advanced with such rapid strides, that at the present day, the cultivation and forcing of the vine is so generally understood among practical gardeners, that it is probable the following remarks may contain nothing new. I have been induced to take up this subject at the express desire of a brother member; and in the hope, that it may be the means of drawing some practical observations from the members present: should the few remarks I am about to make, in any way be the means of affording information on the subject of forcing the vine, to any of my fellow members, the end I had in view will be realised, and I shall rest satisfied that my time has not been spent in vain.

It may be supposed, that in treating of this subject a short historical sketch of the vine should be introduced, but I decline doing so, on the ground that I should have to copy this information from books already published, which is entirely foreign to my intention. I shall, therefore, simply refer to "Rhind's Vegetable Kingdom," where the requisite historical information will be found, under the article *Grape Vine*.

I propose to treat on the various heads by rotation, as follows: — *Propagation; Preparation of the border; Planting; and Pruning;* and conclude with a few *general remarks*.

PROPAGATION. — Various are the methods which have been adopted by different propagators of the vine ; namely, by seeds, layers, cuttings, buds, inarching, and grafting.

Propagation by seed is resorted to, to obtain new varieties ; the seeds ought to be sown early in February, in bottom heat, in order to accelerate their germination, and when they have made two or three leaves, they may be potted, singly, into small pots, and be again plunged in a little bottom heat, until they have made fresh growth ; they may then be removed to a shelf in a vinery, prior to their being inarched on some side shoot, or spur of an established vine : if allowed to remain in pots, it will be four or five years before they show any disposition to fruit ; but by having them in a forward and healthy condition, fit for inarching, the season they are sown, they will in all probability show fruit the following summer, and should the variety prove unworthy of cultivation, the spur can be removed at the pruning season, and a fresh one will supply its place.

Propagation by layers is sometimes practised both by nurserymen and practical gardeners : it is performed thus ;— in winter, or in the spring, take a shoot of the previous year's growth, cut it down to one eye, and then give it a twist, or cut a ring round the bark a few inches under the place where it started the foregoing season— that is, on the second year's wood ; then peg it down to the soil ; and when once it has got rooted, which will be about the beginning of August, it may then be detached from the parent stock, which will give it check sufficient to stop its growth, and thereby enable the wood to become properly ripened before winter. When this process is performed in a vinery, it is generally done in pots ; the branch intended to be layered is introduced through the hole in the bottom of the pot, which is then filled with soil ; when rooted, it should be cut gradually away, until it is finally detached. I have seen as many as twelve bunches upon a layer thus managed, which certainly formed a very pleasing object when set upon a dining-room table. I would, however, by no means recommend the use of such plants for furnishing a vinery, for I have had an opportunity of witnessing the trial of a few such as these, some years ago, and the result was but little short of a failure ; the wood they made the season after planting was scarcely more than two feet long, and small in proportion.

Propagation by cuttings is now very much out of practice, as

it involved not only the loss of the previous year's shoot, but it required also at least two inches of the two-year old wood ; the beginning of February is the time generally adopted for putting in the cuttings, which should have two inches of the old wood with one eye of the new, and should be planted separately in small pots, leaving the eye above the soil ; they should be plunged in bottom heat, and be shifted when it is required.

Propagation by buds is by far the best, simplest, and most economical method that can be adopted ; they generally become better rooted, and consequently produce wood of a superior texture to that produced under any of the above systems : it is now generally adopted either for pot culture, or for furnishing a viney with permanent plants. Select the earliest and best ripened wood, where the eyes or buds are well swelled, and the shoots are moderately strong and short jointed, with very little pith ; these may be chosen at the pruning season, and preserved till the spring, by placing their lower ends in soil. The season for propagating is the same as when cuttings are employed : an inch and a half of wood attached to each bud will be sufficient, that is, an inch below and half an inch above the bud : plant them singly in small pots, using a rich sandy soil, laying them in a horizontal position, and covering the eye with half an inch of soil ; plunge them in bottom heat, and when they are rooted and have begun to grow, they will require plenty of pot room, and a very rich soil, with frequent waterings of liquid manure ; if thus treated, and kept growing in a moderate heat, they will make excellent rods by the autumn, for the next year's forcing.

Inarching requires to be done when the wood is in a green state, to make them unite soon ; but this system is only available where the plants are growing together : the method of performing it being so generally understood, I will not take up time by describing it.

Grafting is a mode of propagation which I consider preferable to inarching ; for as vines can only be inarched successfully on the young wood, it sometimes happens that young wood cannot conveniently be had where it is wanted. Grafting, on the other hand, can be performed on one, two, or three years' old wood, which gives it a decided preference. The time for putting on the grafts or scions is when the stock has made about six inches of young growth ; then take the scions, which may have been put past for the purpose, and which are consequently in a dor-

mant state, and insert them on the vines in the wedge or cuneiform method; make the scion of one or two buds long, cut the lower end in the form of a wedge, set carefully in the stock, and tie it round with matting in the usual way, cover it all over with clay, excepting one of the buds; then put a little moss round the whole, leaving an opening for the eye; it is necessary to have a growing shoot left above the graft, in order to draw up the sap before the scion begins to grow; when this is observed, it may be cut away in order to assist the union; the moss should be kept always moist. Grafts put on in this method seldom fail, and I have seen them produce the same season, two bunches of excellent fruit.

PREPARATION OF THE BORDER. — There is a great variety of opinions among gardeners concerning the soil of which a vine border should be composed; but all agree that it should be well drained, and be made perfectly dry at the bottom: to secure this, proceed as follows: — dig out the soil to the depth of four feet, and not less than thirty feet wide, with a fall towards the front, of three inches in every foot; put about three inches of stone or brick rubbish in the bottom, and over this a coating of cement or pavement, either of which will answer the purpose very well: on this drain tiles must be laid, in lines three feet apart, leading to a main drain in front; between and over these, stone or brick rubbish may then be laid, covering the tiles about three inches; cover the whole with turf, laying the grassy side downwards, to prevent the soil from mixing with and stopping the drainage. The soil may be composed of the following materials; — one half strong loam taken from an old pasture, one fourth rotten dung, and one fourth street or road sweepings; mix and chop them well together, and having done so, proceed at once, while the turf is fresh, to make the border: at the same time introduce some blocks of freestone, which will serve a two-fold purpose, viz. assisting the surface water to pass off freely, and supplying the roots with moisture in a dry season: fill it a few inches above the intended height, leaving the surface parallel with the bottom. Autumn, or early winter, is the best time for doing so, in order that it may have time to subside to the proper level before the planting.

PLANTING. — There are various opinions concerning the time for planting; one says March, another May; but either of those times will answer, provided it is properly done. I would prefer

doing it about the end of May, in the following manner :— the plants which were raised from eyes the foregoing season should be cut down to one eye in the autumn, and be shifted into a larger pot, and started early in March, in a slight bottom heat; this will assist their rooting freely into the fresh soil, and thereby strengthening the young wood; keep them growing till the end of May, when they may be carefully planted in the border with the buds entire; give a gentle watering with tepid water, to settle the soil about their roots, and then cover with a few inches of short dung to prevent evaporation; and should the season afterwards prove dry, a soaking of diluted liquid manure will prove very beneficial: by that time, the shoots will reach a good way up the rafters, and if they show any signs of flagging, they will require to be shaded for a few days from intense sun; if kept growing in a healthy condition by frequent syringings, the roots will soon extend in the border, and the shoots will also soon reach the top of the house; but rather than top them, at that time, train them down the back a little way: stop all the laterals as they appear; keep a steady heat, till the wood is thoroughly ripened, which may be known by the wood and leaves assuming a brown colour.

PRUNING.—Gardeners differ so much on this point, that almost every one has his own system; but I shall only glance at one or two of them, which are most generally practised. I am of opinion, that a good crop of grapes does not so much depend on the pruning, as it does on the soil in which they are planted, and the climate in which they are grown; we will take the rod which is produced the season of planting, in order to exemplify by it the different systems.

Long Rod. Those who practise this mode would cut it half way down the rafter the first year; the following season they would allow the leading shoot to reach the top of the house, and at the same time would endeavour to induce one to arise from the bottom, which would be trained two-thirds up the rafters before stopping it: when the pruning season again arrives, the leading shoot is cut within eighteen inches of the top of the house, and the lower one half way down, at which period the whole height of the roof of the house will be entirely filled with bearing wood. At the end of the third summer, if another shoot is brought from the bottom, there will be three of different ages; but by cutting away the oldest, the house will then be in the

same condition as it was at the end of the second year. Thus, by cutting away the oldest shoot, and encouraging a young one every successive year, a constant supply of young wood will be maintained.

Long Spurs. It is the practice with those who adopt this method of pruning, to cut the vines half way down the first year, under the idea that by leaving them all the length of the rafters, it would be too much for the roots to support at that early stage of their growth; but to such I would say, if their vines are in a good condition, the roots will support them all the length of the rafters even thus early. I had the pleasure of seeing a viney where the young wood was left all the length of the rafters, (which were not less than sixteen feet) each producing from twenty to twenty-six bunches of grapes, varying from one to three pounds in weight; and judging by the appearance of the wood they had made, something better might have been anticipated the following summer. After the fruit is cut, and the wood well ripened, the shoots which have borne fruit the foregoing summer are cut back to three or four eyes; and when those have thrown their fruit, the following spring only two shoots (the bottom ones) on each spur are allowed to remain, except it be that any of the others show the largest bunches: when the next pruning season has arrived, the old spurs are cut down to the bottom shoots, which are also shortened to three or four eyes. Some are now practising what they consider to be an improvement on this system; in the place of leaving all the buds on the spurs to break, they leave only the top and bottom ones, the intermediate ones being cut off at the pruning season; the top one only is allowed to bear fruit, whilst the other is encouraged for bearing wood: the great objection against the old way, is, that the vines having to push more eyes than is necessary, they must consequently be weakened more than if all the energy of the vine was directed to the support of one: the improved method is also liable to the same objection, in a less degree; they have also the effect of darkening and crowding the house with superfluous wood and leaves; these evils are entirely obviated by *short spurring*, in doing which it is the practice, in place of leaving the shoots with three or four eyes, to cut them in to the one nearest the stem; this gives the vines a neat and tidy appearance at all times, and I consider it best adapted for early forcing, as the buds break sooner, which is a point of no small importance.

Having now offered some remarks on propagation, the preparation of the border, planting, and pruning, I will make a few concluding REMARKS, which will be devoted to the general management when forcing. In some places where forcing is carried on extensively, they begin as early as October or November; but at that early period pot-vines are generally employed, because a regular succession by propagation can be maintained, and those which have been forced can be thrown away. By commencing the excitement thus early in established vineries, the whole course of forcing is entirely against nature, and the consequence is, frequently, that in a few years the vines become languid and weak, and little or no fruit is the result. I consider December quite soon enough to start; the house ought to be shut close a fortnight previous to the application of heat, and when this is furnished with a pit, the latter may be filled with fermenting materials; but where no such accommodation is to be had, make up a ridge of fermenting material all the length and inside of the house, which will serve the purpose nearly as well, although it may not be so pleasing to the eye; turn a portion of this every day: the steam arising therefrom will greatly assist the breaking of the vines.

But while thus careful of the interior, we must not forget the border outside; this ought to be carefully forked over, and covered with dung or leaves to the depth of eighteen inches or two feet, according as the supply will allow; turn it at least every fortnight, and when the heat begins to decline, add some fresh materials, and on no account let the heat decline till the season is well advanced; having got everything thus far ready, turn the tops of the vines towards the bottom, which will cause them to break more regularly; the heat arising from the dung will be found quite sufficient, unless the weather is very severe; the temperature may be from 45° to 50° , rising 3° every week, by fire heat, till it reaches 60° , which will be high enough till the vines begin to flower; admit but little or no air, till that time, as I consider the free admission of cold air chills the young wood at that early period of the year, and hence the cause of so many poor shanked bunches, which are but too frequently seen: syringe twice a day, with tepid water, till they are in leaf, when they will require to be tied up to the rafters; afterwards syringe once or twice a day, according as the weather will permit, leaving it off entirely when the vines are in flower, and having then

recourse to steaming by pouring water on the flues or pipes ; besides this a quantity of evaporating pans should be continually filled with water : stop the shoots at the first joint above the bunch ; and when the flowers begin to open, the heat may be increased to 65° or 68° at night, allowing a rise of 10° by the sun ; admit as much air by day as circumstances will allow. It is of great service in assisting them to set, to shake the trellis every day, thereby causing the pollen to be freely distributed through the house ; some sorts will not set well unless this precaution be attended to : when they are set, and swelled to the size of peas, the operation of thinning may be performed ; but as no rule can be set down for that, I will leave it to the judgment of the operator, merely observing, that such as form large shoulders should have them suspended, by small strips of matting, to the wires or trellis, to prevent their damping, and to give more room for the berries to swell to their proper size. From this period till the fruit begins to colour, little more is wanted but syringing and stopping the laterals as they appear, breaking off close all those which push under the fruit : when the fruit begins to colour, the house should be kept as dry as possible, and plenty of air admitted till they are all cut. A good washing from the engine will be of great service in refreshing and cleansing the leaves, after the fruit is cut : keep the house closed till the wood is ripe, when it may be pruned ; afterwards expose it night and day, except in severe weather, till the season of forcing has again arrived. These remarks may be applied to late as well as early forcing, with the exception of covering the border, as the sun will in the former case have attained considerable influence, rendering the use of fermenting materials unnecessary ; a coating of short dung will, however, be of great service, as the rain during the summer months will wash down to the roots the nutriment it contains ; at the same time it will encourage the roots towards the surface, and prevent the sun from exerting too powerful an influence upon them.

I am no advocate for washing the vine with any composition, unless necessity requires it for the destruction of insects ; in such cases it is unavoidable. The following method I have seen practised with great success, in eradicating the brown scales :—take off the loose bark, then wash with soft soap dissolved in hot water, using a hard brush, and taking care not to hurt the buds ; afterwards apply hot lime made to the consistency of thick

paint; it is necessary to wash the wires and rafters at the same time, as the scale will be often found clinging to them.

Among all the receipts given for killing the red spider, I have found none so simple or efficacious, or which does less injury to the vine, than the following, which I saw practised in a vinery where the insect had made great progress during the time the vines were in flower:—as soon as the fruit had set, the garden engine was taken into the house, and clean water thrown on the leaves with considerable force, taking care not to miss a leaf; this was continued for three alternate nights, and the process either killed the insects on the leaves, or washed them off, and left them in such a state that they were unable to recover; the consequence was, that not a single spider made its appearance during the rest of the summer.

The kind of house best calculated for early forcing is one placed at an angle of about 45° , as the rays of the sun will act with more force on it, during the winter months; and in all cases where practicable, the vine should be planted inside of the house.

COLOURING.—There are a great many opinions as to the cause of grapes not colouring well: some attribute it to the want of sun and air, others to the plants producing too heavy a crop; but I am of opinion, that the cause is to be attributed to the state of the border, as I have invariably found, when the vines were planted in a good border and properly managed, the grapes were all that could be wished.

The sorts best calculated for early forcing are the following:—

Black.

Black Hamburgh.
Black Muscadine.
Black Frontignan.

White.

White Frontignan.
White Muscadine.
White Sweet Water.

*Cambridge House Garden, Twickenham,
Feb. 7. 1844.*

VISITS TO REMARKABLE PLACES.

WE lately had the pleasure of visiting that seat of provincial horticulture, the neighbourhood of Manchester; but it happening just when our last Number was going through the press, the attention it required rendered time valuable, and consequently

abridged the limit of our stay. The cultivation of orchidaceous plants is the prevailing taste in this part, and it is well known that very many of the most beautiful which are now disseminated throughout the kingdom were first located here. It may, indeed, be termed the centre from whence both the taste for orchidæ, and the means of gratifying it, have been extended. Knypersly Hall, the seat of J. Bateman, Esq., was the first point of attraction to us, and here we found a rich treat. The gardens, surrounded by the abrupt hills characteristic of this part of the country, are situated on the southern slope of a gentle eminence, having delightfully romantic and varied views among the surrounding hills and woods. The first place proceeded to was a large greenhouse. Here were some fine *Epiphyllums*, grown in baskets hung from the roof of the house; also several noble *Azaleas* in bloom. In this house was a plant of *Dendrobium Wallichii* in a fine healthy state, which was stated to have been grown here during the winter; there was also *Cyrtopodium speciosissimum* and *Calanthe discolor*. The temperature of this house was about 45°.

The next house is ainery: this was nearly filled with orchidaceous plants, such as *Lælia superbiens*, very strongly grown, fine plants of *Dendrobium pulchellum* and *Barkeria Lindleyi*, *Stanhopea aurea*, *Oncidium bicallosum*, *Odontoglossum pulchellum*, and a remarkably strong and healthy mass of *O. grande*, which is constantly kept here and blooms annually. There were many other smaller plants equally healthy, beside two very large plants of *Musa Cavendishii*, about fruiting. The temperature of this house was 60°.

The adjoining house is one devoted to South American orchidæ; it is long and rather low, the path or floor of the house being sunk some two or three feet below the ground level. Here we noticed fine plants of *Lælia cinnabarina*, *Epidendrum Stamfordianum*, *E. elatum*, *E. patens*, *Cattleya Skinneri*, *C. crispa*, *Oncidium Cavendishii*, and *O. excavatum*: these were fine specimens, of good growth, and of a large size. The house is well stocked with many other rich and rare species, besides a great number of unproved importations. Here the temperature was about 65° abounding with moisture.

Leaving this, we entered a large span-roofed house with double glazing, having as it were ordinary lights, and at an interval of about four inches towards the outside another cover-

ing of lights. The advantage of this system lies in the intermediate space between the light lessening the action of the outer air on the temperature of the house, but it is not found of sufficient importance to warrant the additional expense, and is besides unnecessary where a good heating apparatus is at command. This erection is filled chiefly with Indian orchidæ; several specimens of *Stanhopeas* attract attention; but those most deserving remark are the *Aerides* and *Vandas*, being fine plants, and several of them very rare. The temperature of this house ranged from 75° to 80°. The remaining portion of glass appeared to be in excellent condition.

Contiguous to this part of the grounds is the flower-garden, on entering which our attention was immediately arrested by an excellent piece of rockwork, composed of stones quarried in the neighbourhood, of several tons weight each, the bases and recesses among which are studded over with rhododendrons, and other American plants. Connected with this by a narrow path edged with ferns, and leading by the margin of a pretty piece of water, is another well-managed piece, representing a sort of sarcophagus or cave, containing stone coffins from Pompeii and other Roman antiquities. This place is constructed, like the other, of ponderous masses of rough stone; and when each is viewed in connection with the other has a very imposing appearance. The surrounding neat and well-dressed flower-garden affords a contrast perhaps rather too abrupt, but the intervening piece of water, by harmonising with both, tends to render the transition more reconcilable. Passing hence, our course lay by the rosery, containing some valuable kinds, but our space will not allow the enumeration: on to the pinetum; here we found very nice young plants of *Araucaria*, *Cedrus*, &c., growing luxuriantly in a delightful spot. From this place we directed our steps, by a walk of about a mile in length, along the edge of an artificial lake—a sheet of water covering, we understood, above an hundred acres—towards the tower, a building apparently intended for a look-out, but unfortunately placed in a comparative hollow: returning by a neat architectural bridge over the lake, we finished a very pleasant day.

The following is a list of the orchidaceous plants blooming at the time of our visit:—

Leptotes bicolor.
Oncidium pubes.

Oncidium hians.
Cebolleti.

Oncidium junceum.
luridum.
guttatum.
Wentworthianum.
Cavendishianum.
flexuosum.
ampliatum major
leucochilum.
Henchmannii.
carthaginense.
pulvinatum.
altissimum.
Sarcanthus paniculatus.
Phaius maculatus.
grandiflorus.
Gongora fulva.
maculata.
var.
Epidendrum patens.
macrochilum.
roseum.
selligerum.
verrucosum.
Stamfordianum.
cinnabarinum.
aurantiaca.
Clowesii.
species nova.
Maxillaria Parkerii.
Harrisonii.
Masdevallia infraeta.
Pleurothallis teres.
Cyrtochilum maculatum.
var.

Cyrtochilum filipes.
Ornithocephalus ciliatus.
Dendrobium elongatum.
pulchellum.
Heyneanum.
Ruckerii.
amoenum.
nobile.
cærulescens.
sulcatum.
Peirardii.
latifolium.
aggregatum.
moschatum.
Calceolaria.
fimbriatum.
macranthum.
Wallichii.
densiflorum.
Acanthophippium bicolor
striatum.
sylhetense.
Fernandesia elegans.
robusta.
lunata.
Vanda Roxburghii.
Batemannia Colleyi.
Brasavola glauca.
Lælia cinnabarina.
Cattleya Skinnerii.
Aerides crispum.
Ponera striata.
Cymbidium aloifolium.
Trigonidium ringens.

LIST OF NEW PLANTS.

VERBENACEÆ. — *Didynamia Angiospermia*.

Clerodendron infortunatum. This is a truly splendid species nearly allied to *C. squamatum*, having like it bright red flowers. The singular name *infortunatum* (unlucky) originated with Linnæus, who called another species *fortunatum*, and another *calamitosum*. According to De Théis this was in consequence of *C. fortunatum* being useful in medicine, while *C. infortunatum* and *calamitosum* are dangerous.

The plant before us was sent from Ceylon to His Grace the Duke of Northumberland, by Mr. Nightingale, and was flowered at Syon, in August, 1843. It is a stove shrub, which will succeed best from a cutting struck in autumn and kept in an intermediate house until the beginning of February, when it should be repotted and induced to grow. The soil should consist of peat and loam, and if a mixture of well-decomposed cow-dung is added, so much the better. In the summer season an ample supply of water should be given, and the atmosphere kept as moist as possible. This plant differs from many others in not requiring to be topped, nor does it require a high temperature. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Eria floribunda. Although the flowers of this plant cannot boast of large size and rich colours, they are by no means destitute of beauty. Arranged as they are in long drooping racemes of a pure white, glossy in texture, and delicately touched with crimson, they are among the prettiest of the smaller kinds. It is a native of Singapore, whence it has been received by Messrs. Loddiges. — *Bot. Reg.*

BYTTNERIACEÆ. — *Monadelphia Polyandria*.

Trochetia grandiflora. This noble plant was introduced by His Grace the Duke of Northumberland from the Mauritius, and flowered at Syon in December last. The original plant is a seedling, about six feet high; when struck from cuttings, it will probably become bushy, in which case it will be very beautiful, as it appears to be a fine flowerer. The blossoms are snow-white, with a yellow blotch at the base of each petal, and are nearly three inches in diameter; their pendulous position, which occurs in all the known species of the genus, gives them a peculiarly graceful appearance. — *Bot. Reg.*

LABIATÆ § STACHYDEÆ. — *Didynamia Gymnospermia*.

Phlomis cashmeriana. To those who possess no greenhouse this good-looking plant from the valley of Cashmere will be welcome, for its large pale lilac flowers remain for a considerable time in beauty. It is a hardy perennial plant, growing about two feet high, with somewhat of the appearance of a *Salvia*, and flowering in July and August; it requires a rich light soil, and a situation which is rather dry in winter. It was raised in the garden of the Horticultural Society from seeds received from Dr. Royle. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Schomburgkia crispa. This fine genus is remarkable for the large size of its pseudo-bulbs, which are occasionally as much as two feet long. It differs from *Epidendrum* and its allies in having eight pollen masses, and evidently constitutes an extremely well-marked group. *S. crispa* has yellowish-brown flowers with scarcely a trace of purple, and by that circumstance alone it may be distinguished. Its lip is nearly flat, very little three-lobed, and broadest at the base: other characters peculiar to itself. It was sent from Demerara by Mr. Schomburgk to Mrs. Marryat of Wimbledon. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Phaius bicolor. This plant, it appears, was discovered in Ceylon by Mr. Macrae, but when introduced to this country we are not informed. The plant in habit is rather less robust than its ally *P. Wallichii*. The flowers are large and handsome, sepals and petals large, spreading, nearly two inches long, externally pale yellow-brown, within deep chocolate-brown and striated; lip large, standing forward, it may be called cucullate, the lower half or claw is convolute round the style, so as to conceal it; the limb is large, three-lobed, the lobes rounded and undulate, the side ones rose-colour; the middle is much the largest and is yellowish white. — *Bot. Mag.*

GESNERIACEÆ. — *Didynamia Angiospermia*.

Nematanthus chloronema. This plant differs from *N. longipes*, now pretty well known, in having shorter flower-stalks and somewhat smaller flowers; in all other respects it is very similar. It was sent from the Organ Mountains by Mr. Gardner to the Glasgow Botanic Garden, where it flowered for the first time in July 1843. — *Bot. Mag.*

CALENDAR FOR MAY.

STOVE. This is the season of the year for *growing* plants of a permanent character, as well as those of more limited duration, whose development is become assimilated and adapted to our climate. The sun, supplying at once both light and heat, is the grand agent in forwarding the growth of plants. The principal artificial conditions required are these:—moisture in abundance, but applied in the form of invisible vapour, by evaporation from moistened surfaces; a low night temperature, affording a period of rest after the excitement of the day; atmospheric air equably diffused throughout the structure, admitted in different proportions both by night and day, but in no case admitted suddenly, or in large bulk; exposure to the atmosphere, by not being crowded by other plants, and shade in some few instances, which can be afforded chiefly by climbing plants. Insects are sure to establish themselves if the atmosphere be in an arid state. Attention must be paid to pruning and training all plants which require it. Temperature, night, 60° to 65°; day, 75° to 85°; or above by solar influence.

GREENHOUSE. The same principles should guide the amateur in managing his greenhouse plants as have been recommended in the stove. On account of its lower degree of temperature, more air must be admitted, both by day and night. The moister the atmosphere of these structures are kept in proportion to their temperature, the less degree of “fresh air” will be required to be admitted.

FLOWER-GARDEN. Almost all half-hardy and showy plants intended for decoration may be planted out some time this month, varying according to the state and prognostics of the weather: they should previously be perfectly inured to exposure in cold frames. A few annuals may be sown for succession, to bloom in the latter part of the summer: cuttings of free-growing plants may also be struck for a similar purpose. Florists' flowers in bloom require shade, in order to preserve the colours of their flowers, and extend their duration: those which are past their blooming state should be allowed to mature their foliage before they are removed; or if removal is indispensable, they should be removed as early as possible, and *planted where their growth can be completed.* Routine operations of all kinds should never be neglected until they become *necessary*; their necessary performance should rather be anticipated.

T. M.



THE
FLORIST'S JOURNAL.

JUNE, 1844.

CATTLEYA MOSSIÆ VAR. SPECIOSISSIMA.

WITH AN ENGRAVING.

THROUGHOUT the whole range of floral beauties there is not, perhaps, a division possessing more interest and individual loveliness than is to be found in Orchideæ; delicacy or splendour in colouring, and singularity in the form, are present, either separately or blended, in nearly every instance.

The plant which supplies our illustration for this month has all these desirable qualities, with the additional one of being among the easiest of cultivation in the order. It flowered for the first time in the Tooting Nursery in March last, and, although at present considered only a variety of *C. Mossiæ*, is quite likely, on future examination, to be found sufficiently distinct to constitute another species. The appended note from our respected correspondent, Mr. P. N. Don, points out the distinguishing characters referred to, and contains its history and the mode of cultivation.

“ *Cattleya Mossiæ var. speciosissima* is a very splendid variety of a very beautiful species: the pseudo-bulbs are more elongated than in the species; in fact, their character approaches more to caulescent than pseudo-bulbous, resembling those of *C. guttata* in habit. When the plant attains its full growth, it has two, and occasionally three, leaves at the apex of the stem, also elongated in nearly as great a proportion as the pseudo-bulbs: this is one of the distinguishing points, the parent species (if so it is), *Mossiæ*, having only one leaf to each pseudo-bulb.

“ The flowers are large and handsome, being eight inches in

diameter when fully expanded. The colour of the sepals and petals is light rosy lilac, the apex of the lips richly mottled with crimson-purple, and the column is smaller than in *Mossia*, and has a two-lobed crest, which I have not observed in any other of the species. Should this character with the habit of the plant prove to be constant, I should think it will be a good specific distinction.

“ The plant was introduced to the Tooting Nursery about eight years ago from La Guayra. It is a plant of easy culture, requiring to be potted in very fibrous peat, and to be elevated a little above the rim of the pot, which should be well drained, so as to prevent the lodgement of any superfluous moisture about the base of the stems, and should be freely watered while in a growing state, but with a considerable reduction through the resting season. If it should happen to commence growing in the winter months, which some of these plants are apt to do, it is better to err in giving too little than too much water, it being far preferable to have a small winter shoot than to lose its growth in the summer, which is sure to be more vigorous and flower finer than any of those made in winter.

P. N. DON.

Tooting Nursery, April 18, 1844.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

ON THE NATURAL ORDER LYCOPODIACEÆ,

By Mr. T. MOORE.

THE natural order Lycopodiaceæ contains, besides *Lycopodium*, the genera *Psilotum* and *Tmesipteris*, to which, by DeCandolle and others, is added *Isoetes*. Their general habit is that of moss-like plants, with imbricated leaves and creeping stems. In some instances they assume the character of stemless plants, having erect subulate leaves, and a solid cormus; among those of the

latter description may be noticed *Isoetes lacustris*, one of our own native plants. They are all included among those which are termed flowerless plants—a name which has been applied to these and other cellular plants, in consequence of the non-development of the floral organs, as in the majority of plants. Hence it arises that both the structure and the manner in which the organs of these plants perform their functions is very imperfectly understood; on the latter point, nothing is at all positively known. Their organs of reproduction are described to be, axillary sessile thecæ, or capsules without a ring, and bursting by distinct valves; in some cases they are indehiscent. They contain either a minute powdery substance, which some have supposed to be pollen, or larger bodies, which have been supposed to be the seeds or sporules, and which are marked at their apex by three minute radiating elevated ridges. Their leaves and stems have the same kind of structure with the larger mosses, and in their vernation, that is, the manner in which the undeveloped plants are folded, they are circinate.

The plants included in Lycopodiaceæ are distinctly characterised by their reproductive organs, which, as just noticed, are considered to be of two distinct kinds; both of these are, however, axillary and sessile, and have from one to three regularly dehiscent valves. Those persons who hold the opinion that plants of all kinds have sexes, maintain that those capsules which contain the minute powdery matter are analogous with the anthers of flowering or phœnogamous plants, and that the larger bodies are pistilla. Such an opinion is, however, conjectural, and appears to be founded on no direct evidence: all that is really known respecting them is, that the larger bodies have been seen to germinate; and Willdenow asserts, that he has observed the powdery particles to grow also. The opinion of Dr. Lindley is, that the larger bodies are the true sporules or reproductive atoms, whilst the others are the same in an abortive condition—an opinion which is strongly confirmed by the observations of Willdenow just referred to. We are told by Salisbury, that he has seen *Lycopodium denticulatum*, in the process of germination, evolve two cotyledons, thus exhibiting a dicotyledonous development; but others suppose it to be more probable that the two little scales then evolved are primordial leaves rather than analogous to cotyledons, and that the mode of

germination of the plant is in reality more nearly allied to that of monocotyledons.

The genus *Isoetes* is referred by some botanists to the natural order Marsileaceæ; but it is referred to the present order by DeCandolle, Brongniart, and Dr. Lindley. According to M. Delile, in *Lycopodium* the pulverulent thecæ, or those producing powder, occupy the upper ends of the shoots, whilst the granular thecæ, or those producing sporules, are situate on the lower parts: in *Isoetes*, the former are found in the centre, and the latter near the circumference of its globular mass of reproductive organs. The relative position of these thecæ affords a good evidence of the affinity of the two genera. Dr. Lindley observes: "If this comparison is good, it will afford some evidence of the identity of nature in these thecæ, and that the pulverulent ones are, at least, not anthers, as has been supposed; for in *Isoetes*, these pulverulent inner thecæ have the same organisation as the outer granular ones, even to the presence of what in these latter has been called their stigma." M. Delile states, that in germinating, the sporules of *Isoetes setacea* sprout both upwards and downwards, forming an intermediate solid body, which ultimately becomes the stem or cormus; he does not, however, state whether these axes take their rise from an uniform point, but as no analogy of structure has been discovered between these sporules and seeds (as the latter term is strictly to be understood), it is probable that they do not.

The properties of the order are not numerous. *Lycopodium clavatum* is emetic; the decoction is said to be more serviceable than any known means in removing Plica polonica: the powder contained in the thecæ is frequently used on the stage to imitate lightning, on account of its inflammability; for the same reason, it is used in the manufacture of fireworks; it is also used to prevent excoriation in children. *L. selago* possesses emetic and cathartic properties, acting powerfully, and producing serious giddiness and violent convulsions if taken in too large a dose: it is employed in the Highlands of Scotland, where it is also made into an irritating ointment, and applied with advantage to the neighbourhood of the eyes, as a counter-irritant. This unguent is also used to dress foul ulcers, and might be used for keeping blisters open, instead of *savin*. According to Linnæus, the Swedes find the decoction serviceable as a detergent lotion, and in destroying the vermin infesting swine and other animals.

L. phlegmaria is reputed an aphrodisiac. *L. Selago* is used in the Isle of Skye, in the Highlands, and in other places, to fix colours in dyeing, instead of alum. *L. alpinum* is used to dye woollen cloths of a yellow colour. *L. complanatum*, and *L. clavatum*, are also used as dyes; and, according to M. Vastring, woollen cloths boiled with *Lycopodiums*, especially with *L. clavatum*, acquire the property of becoming blue when passed through a bath of Brazil wood.

It is a rather general opinion, that in the earlier ages of the world plants of this affinity attained a gigantic size, equalled only by that of forest trees. A considerable quantity of remains of organic origin, found in coal mines and similar situations, have been regarded as plants which possess a structural affinity with Coniferæ. This affinity is possessed by *Lycopodiums*, as has been already noticed; and those who have spent much time in the investigation, have so far established the identity, as to render it certain that species, long extinct, belonging to this order, are abundant in such situations, in company with *Ferns* and other allied plants. Those known at the present day do not in any instance exceed two or three feet in height; by far the greater number are prostrate trailing herbs, having the habit and appearance of *Mosses*, although in many instances they are more diffuse. Their distribution over the surface of the globe is very similar to that of *Ferns*, being most abundant in humid situations within the tropics, especially in small islands. They are found in less abundance in more temperate regions, and become rarer as they approach the poles. In the climate of Northern Europe, however, and even in Lapland, whole tracts are covered with *L. alpinum* and *L. selaginoides*.

The cultivation of *Lycopodiums* is by no means difficult: the hardy kinds succeed perfectly in moist peaty soil, and a selection of the turfy parts is also a very suitable medium for the roots of those grown in pots, which latter are best set into pans or feeders of water. They succeed perfectly when suspended in baskets, and also when their roots are merely enveloped with moss; in short, wherever moisture is abundant, and there exists a sufficiently elevated temperature to meet the wants of the several species, there need be no apprehension of their success. Some of the delicate trailing kinds may be very aptly applied to cover the baskets, and other means by which Orchidaceous plants are suspended; and the hardier trailing species

form interesting objects, as edgings to vases, in which ornamental plants are set. A piece of flat rockwork, constructed in a damp situation, and so that the spaces for the plants may be made to resemble a morass, would no doubt be found to be more than any other situation adapted to the hardy kinds. *Isoetes* and *Psilotum* are small plants, which, though interesting to the botanist, are scarcely so to the ordinary cultivator, unless, indeed, they may be prized on account of their rarity. The former is an aquatic, and is found in some of the lakes in this country; the latter is a native of the West Indies.

The derivation of the generic names of the plants which form the subject of this paper, is the following: *Lycopodium*, from *lykos*, a wolf, and *pous*, a foot; in allusion to the resemblance of the roots. *Isoetes*, from *isos*, equal, and *etos*, the year; the plant having the same appearance throughout the year. *Psilotum*, from *psilos*, naked; the triangular stems being destitute of leaves, and possessing a slender twiggy habit.

ON THE CULTURE OF DUTCH BULBS,

By Mr. W ANSELL.

THE HYACINTH.—The garden Hyacinth (*Hyacinthus orientalis*) is a native of the East; it is said to grow abundantly in the Levant, about Aleppo, and also at Bagdad, flowering a month or more earlier there, than it does in our gardens. It is mentioned by Gerarde to have been cultivated by him, in 1596. The Dutch had cultivated this flower for a long series of years before it was known in this country, for which they had become notorious. The most celebrated of these cultivators are the Haarlem florists, at which place whole acres are devoted to their cultivation; and from whence an annual supply is sent to our markets.

Planting the full-grown Bulbs. It is requisite to remind the purchaser that he should make a selection of his bulbs, when purchasing, or even when planting from his own stock; as many will produce inferior flowers. A good hyacinth bulb, such as is most likely to produce a fine truss of bloom, is of medium size, solid, and conical; the flat-shaped larger bulbs are apt to break

into offsets, and seldom, if ever, flower in perfection : such bulbs as are from four to five years old, either from seed or offsets, are considered to bloom stronger in this country, than those of greater age. In Holland, where the climate, soil, and general management is more favourable than in England, the same individual bulb has been known to flower for twelve or more successive years, and indeed they have never been observed to die of age ; and I have no doubt that as much might be accomplished in England, with skilful cultivation.

From about the middle of October to the beginning of November, is the best time for planting the hyacinth : a dry and airy plot of ground should be selected, declining toward the south, and sheltered from the north and easterly winds. A fortnight or three weeks previous to planting, the earth in the bed should be taken out to the depth of two feet ; the bottom ought also to be dug over, and the earth rendered as loose and pervious to moisture as possible, for the purpose of giving a good drainage. Should the soil be retentive of moisture, it would be advisable to remove the earth to a greater depth, and to replace it with a stratum of brick rubbish, or coarse gravel, nothing being more injurious to the hyacinth than a superabundance of moisture.

The space left by the removal of the earth must be filled in with a light rich compost, eight inches or one foot above the ground-level ; and when this is well settled, the surface must be made quite smooth and even ; over this strew some river or drift sand, to the thickness of one inch ; and on this mark the position each bulb is to occupy, by means of a rod or line, about eight inches asunder ; then take the bulbs, one by one, and press them lightly into the compost, and surround each by a small portion of sand, to prevent the soil coming in contact with them : after this is accurately finished, cover in over the bulbs, to the depth of five or six inches, with prepared compost, leaving the bed from eight to ten inches above the ground-level, when completed.

Hyacinth beds should be covered during severe weather, with rotten fern, decayed leaves, or tanner's bark, putting it on when necessary, and removing it when the weather will permit. Too careful covering is injurious, as it is apt to deprive the roots of the influence of the sun and air.

About the beginning of April the beds will require shading, especially those containing the fine and rare sorts; for these being more delicate, will be more liable to become injured by the rays of the sun, particularly the red and deep blue-coloured ones. This may be done by means of mats and hoops, or an awning of canvas, which may be rolled up or let down at pleasure: the latter will also protect them from heavy rains, and will be by far the neatest in appearance.

Taking up the Bulbs. As soon as the bulbs have done flowering, they may be carefully taken up, the roots and leaves being injured as little as possible; and they may be carefully potted in drift sand, or any other sandy soil (the pots commonly used are cylindrical or bulb pots), and when that is completed, take them to the greenhouse, or any convenient place where they may be shaded for a few days, and afterwards have free exposure to light and air: a back shelf of a greenhouse facing the north is the most appropriate for them; for if placed in a sunny situation, they would dry off too hastily and become injured, should they be in a growing state at the time of taking up. It is requisite to give them a good watering as soon as they are potted, removing them directly to their station, and in this state they are to remain until the season of planting again arrives, when they must be taken from their resting-place, and carefully examined and cleaned; they will then be fit for re-planting.

Previous to planting the bed the second year, take out the bottom spit and replace it with some new compost, mixing the old and new together from the bottom; then plant as before recommended, covering the bulbs with the fresh compost. Under this treatment I have seen them growing vigorously, and blooming in great profusion, for seven or eight successive years, in England.

In preparing the compost already alluded to, take the top spit of light sandy loam, ten or twelve inches deep from a pasture field; with about one part of this, add one part of drift, or sea, or any sharp sand, that is not contaminated with iron, and the same quantity of well-rotted cow-dung, which has been fully exposed to the sun and air, for at least two or more years; the lack of cow-dung may be supplied with leaf mould: the whole should be mixed in a heap, in a dry sunny exposure, and be there suffered to lie several months, or even a whole

year, before using; it should, moreover, be frequently turned, in order to pulverise and sweeten it. It is important that the cow-dung should be as pure as possible, without any admixture of horse-dung, or litter of any sort, as these are found to be favourable to the growth of a sort of fungus, which greatly injures and often destroys the bulbs.

THE TULIP.—The tulip is one of the choicest among florists' flowers, and its cultivation has accordingly been long an object of extraordinary attention. M. Trippet observes that the tulip grows naturally on the Savoy mountains, and in the neighbourhood of Nice. As observed respecting the hyacinth, the Dutch have also been long celebrated for their skill in the cultivation of the tulip. This flower is supposed to have reached Europe in 1559, and we are informed that it was cultivated in England as soon after as 1577, but not with that enthusiasm which characterised the cultivators on the Continent.

Planting the full-grown Bulbs. A good tulip bulb ought to be solid, and rather bulging at the lower end and somewhat tapering and pointed at the crown, or other extremity, without any mouldiness or soft points, and covered with a brown skin: a portion of this brown skin, immediately before planting, should be peeled off, so as to leave the crown white and fresh; and great care must be taken not to wound or bruise the bulb, or the crown, for this will infallibly produce canker, and probably occasion the rotting away of the whole bulb.

The aspect most advantageous for flowering is one that is open and airy, so that the plants may have the full benefit of sunshine during the whole day, in the early stages of their growth. At the same time, it ought not to be exposed to the north and east winds, which would tend much to injure the leaves in the spring, and would consequently affect the beauty of the blooms.

The bed should be excavated to the depth of two feet; then place a stratum of well rotted cow-dung about six inches in thickness, and well mix it with the mould below that depth; then fill the bed with compost, prepared in the same manner as recommended for the hyacinth: when quite ready for planting, strew over the bed, about one inch in thickness of sand, mark out the rows about six inches asunder, and then press your bulbs lightly in the soil, and around each bulb place a little clean sand: after the whole of this task is completed, cover

them in to the depth of three or four inches ; never plant with a dibble, as is often practised, for it is quite absurd : if not convenient to plant as recommended, drills might be made, which should be three inches deep, and the bulbs may be placed in them ; cover them lightly with soil, as it will admit of the superfluous water passing off more readily than if rendered hard and close.

Protection. As many of the common kinds of tulip are not worth protecting, it would be needless for the cultivator to go to any expense or trouble with them, while, on the other hand, the fine delicate sorts will amply repay for any trouble of this kind.

After planting, the bed should be hooped over, and mats or canvas kept ready at hand, to protect it from heavy rains or severe frosts. Too long or too frequent covering, however, will prevent and obstruct the influence of the air on the roots, and cause the plants to grow weakly ; moderate rains and slight frost are more beneficial than injurious. It might be alleged that it would be better to put up the awning at once, but with this I do not agree. It would draw the plants up too much ; they require to have the full influence of the sun and air, until the colours of the flowers begin to show ; the hoops should then be removed, and the awning put up, for exposure at this time to either sun or rains would cause the colours to run and mix, and in this way would spoil the beauty of the flowers.

Taking up the-Bulbs. The common kinds of tulips may be removed with care as soon as they have done flowering, if their place be required for a succession of flowers ; they must be carefully taken up with a trowel or fork, but not by a spade, for fear of injuring the bulbs, and the seed-vessel should be removed just at the top of the flower-stalk ; then lay them in by the bulbs, covering them as deep as before, but not deeper ; the place selected for them must be in a north or shady aspect, and they must be allowed to remain until they are quite ripe, which will be about August, when they should be taken up and removed to some convenient place to get perfectly dry, before putting them away : if put away damp, they would doubtless get mouldy and rot. The best sorts should be allowed to remain in the bed, to ripen ; and if it is not wished to save any seed from them, the seed-vessel should be removed as soon as the flowers fall. If this plan be adopted, the bulbs will become firm

and ripe, instead of being gorged with sap, and unfit for storing away.

The compost most suitable for tulips is the top spit of good yellow loam, taken to the depth of one foot from a rich pasture; add two-thirds of this to one-third of well-rotted cow-dung, or decayed leaves, with a small portion of drift or river sand; the whole should be incorporated in a heap in some dry sunny exposure, not in the shade, as by some is ignorantly directed, and it should be frequently turned for at least twelve months before it will be fit for use.

(To be continued.)

THE MANAGEMENT OF GREENHOUSE RHODODENDRONS.

THESE beautiful plants are, beyond question, the most ornamental objects a greenhouse can contain in the early spring months, exceeding even the Azaleas when flowered in perfection, their large and ample foliage heightening to a degree of unsurpassable loveliness the vivid or delicate tints of the very specious flowers, to say nothing of the noble habit of the plant itself: how is it then that we so seldom meet with them, so rarely indeed, that their presence is rather the exception than, as it should be, the rule? I know no other reason to be assigned, than the too frequent complaints of a failure in the flowering. To prevent as far as possible the recurrence of these disappointments is my object in this paper; for I hold it unpardonable in those possessing a knowledge of the proper management of a tribe of plants having so many claims to attention, to suffer them to fall into disrepute from neglecting to make that necessary knowledge known.

The management of Rhododendrons is in itself extremely simple when understood; yet to explain it, I must be allowed to go through it in a concise manner. These, like most other American shrubs, delight in light fibrous heath-mould, and should be allowed plenty of it; for they are not fond of frequent shifting: repotting should be performed immediately after blooming, that is to say, as soon as the flowers begin to fade, all the additional stimuli are then thrown into the production of a rich

luxuriant growth, on which are based all future expectations ; while growing, the plants should be kept in a temperature of about 55° or 60° , and receive a very liberal supply of water : this usually occurs about the latter end of April and beginning of May, sometimes a week or two later, according to the period of flowering, and the formation of the new wood generally occupies from three to four weeks. After which follows the most particular point of their management : if the watering and warm temperature is continued beyond the period necessary for the due completion of this first growth, another production of new wood immediately follows, which is the sole cause of the non-production of flowers : the prevention of this second growth is what consequently requires the cultivator's most particular attention, and is almost the only important point in their culture. It must, however, be observed, that it is necessary to get the first formed wood as large and strong as possible, or puny and few will be the flowers ; but it is also equally necessary to discontinue the watering, and to place the plants in a cool situation out of doors immediately it is completed : to do this exactly at the right time requires some considerable amount of practical skill ; but when once ascertained correctly, every thing is perfectly easy ; the plants then only require just enough water to preserve them from flagging. During the heat of summer, and at the usual time of housing plants, a warm situation in the greenhouse should be secured them. If an early bloom is required, they may be placed in a gentle heat directly after Christmas, though this is better avoided, from the trouble it causes to properly check and ripen the first growth ; because at that early period of the season in which forced wood will be produced, it is not safe to place them out of doors, and a 'green-house is seldom cool enough to prevent the second growth.

It must be understood, all that has been said relates only to mature flowering plants. The propagation and management of young plants being more particularly a nurseryman's business, I have said nothing of it, though there is no material difference, except that, as it will of course be desired to have them as large as possible in the shortest possible time, the second growth may be encouraged rather than prevented.

ANGLICUS.

LIST OF ORCHIDÆ.

(Continued from page 84.)

182. *Huntleya violacea*. This plant is destitute of bulbs: its leaves are nearly two feet long, and two inches broad; the flowers are produced on a short repent stem from eight to ten inches long, they are of a pale violet blue colour. This species requires plenty of pot room in a mixture of turfy peat, sphagnum, and a little charcoal; the peat should be in small lumps; it requires plenty of water when in a growing state, with a temperature of 75°. — *A Native of Demerara*.

183. *Huntleya melagris*. This is also destitute of bulbs, and very similar in growth to the above, only the leaves are rather broader, and the flowers are of a darker blue; the same treatment and temperature will do for this as for the other. — *A Native of Brazil*.

184. *Huntleya sessiliflora*. This, too, has no bulbs; its habit is very different to the others, being much dwarfer; its leaves are not more than ten inches long, and two inches broad, ending with an acute point. This genus only contains three species at present belonging to that tribe of plants which require water all the year round, on account of having no pseudo-bulbs to supply them with nourishment, during the time they are at rest; they thrive best in a high temperature, and a damp atmosphere. These are rare and valuable plants, and should be in every collection.

185. *Hartwegia purpurea*. This is another that is destitute of bulbs; its leaves are produced on a short foot-stalk, and are of a dark green, a little speckled, the flower spike slender, directed upwards, about 8 inches long, supporting a few rosy purplish flowers; it is of no great beauty, but may be grown on a log of wood, or in a pot with the usual mixture, allowing but little water, and a temperature 60° to 65°. — *A native of Mexico*.

186. *Houlletia Brocklehurstiana*. Plant pseudo-bulbous, bulbs three inches long, ovate, deeply furrowed and clothed with large lacerated scales; its leaves are produced singly, of a broad lanceolate form, borne on a long cylindrical foot-stalk; the flower spike usually bears from six to eight flowers, the sepals and petals of which are nearly uniform, of a rich fulvous colour spotted all over, the outside paler; the labellum yellow, spotted with purple, sometimes the terminal lobe is almost wholly purple. It requires pot cultivation, in a mixture of turfy peat, sphagnum, and little lumps of charcoal, and when growing should have a liberal supply of water, in addition to frequent syringing, temperature 65° to 70°. — *A native of Brazil*.

187. *Leptotes bicolor*. Plant destitute of bulbs, leaves borne on a short foot-stalk, and of a rush-like form, four inches long, with a deep furrow along the upper side; the flowers are produced in threes and fours, the sepals and petals pure white, a little curved outwards round the margin; the labellum long and also curved, white, with a large blotch of purple. This species should have pot cultivation, in a mixture of sphagnum, turfy peat, and rotten wood: it may be grown on a clump of wood, but in such cases it will require often watering to keep it moist; the temperature should be 65° to 70°. — *A Native of Brazil*.

188. *Leptotes concolor*. This species is very similar to the above, but hardly so strong growing, the plant itself is of a darker colour: it requires the same treatment and temperature. — *A Native of Brazil*.

189. *Leptotes serrulata*. This is a dwarfer growing plant than either of the others, with larger flowers of the same form and colour. This genus contains but these three species at present; they are all beautiful objects, and pot cultivation seems most suitable for them, although, as before stated, they

may be grown on lumps of wood, yet the enfeebling effect of drought on the roots when thus exposed is much to be feared, and consequently is better avoided by placing them in pots.

190. *Lycaste macrophyllum*. Plant pseudo-bulbous, bulbs three inches long, ovate, angular; leaves in pairs, nearly three feet long and five inches broad; the flowers are borne on a stem six inches long, and are solitary, sepals oblong, lanceolate, of a pale green, petals nearly white, smaller than the sepals, and of a cucullate form; labellum fringed, white spotted a little with purple. This species is of very strong growth, and is worthy of being in every collection: it requires pot cultivation in a mixture of sphagnum, turfy peat, rotten wood, and a little charcoal with a liberal supply of water when growing, temperature 65°. — *A Native of Columbia*.

191. *Lycaste Deppeii*. Plant pseudo-bulbous, bulbs ovate, angles rounded, leaves oblong, lanceolate, usually from eighteen inches to two feet long; flowers erect, single; sepals oblong, lanceolate, green spotted with purplish red; petals white, smaller than the sepals, spotted and striped with crimson; labellum three-lobed, of a bright orange, the two side lobes spotted and striped with crimson. This species requires the same cultivation as the above. — *A Native of Xalapa*.

192. *Lycaste plana*. Plant pseudo-bulbous, bulbs three inches long, ovate, angular; leaves in pairs, nearly three feet long; the flowers are similar in colour to *L. macrophyllum*, but altogether more beautiful than that species, as it possesses more the rich red wine-colour, so conspicuous in the lip; and requires the same treatment. — *A Native of Bolanos*.

JOHN HENSHALL, K—P—Y.

(To be continued.)

LIST OF NEW PLANTS.

ORCHIDACEÆ. — *Gynandria Monandria*.

Cattleya superba. A very splendid species of *Cattleya* and a fragrant one. It was detected in British Guiana by Mr. Schomburgh, and by him living plants were sent to Messrs. Loddiges, who flowered them in 1838. Its discoverer remembers that in beauty, odour, and duration, it is not to be surpassed by any orchideous plant, the odour in the morning and evening becoming too powerful for a confined place, and its splendid flowers last for two or three weeks. The stem or pseudo-bulb is six to eight inches long, terminated by two broadly oblong, dark green leaves, from between which rises the peduncle bearing four or five large handsome fragrant flowers; the sepals spreading, oblong, rather acute, full rose-colour; petals resembling them except that they are broader upwards; the lip is remarkable for its deep purple-red colour, paler at the edges of the side-lobes and on the disk, where it becomes yellowish, and is marked with elevated lines. — *Bot. Mag.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Epidendrum vitellinum. This is one of the pseudo-bulbous section of *Epidendra*, and has finer and broader foliage than is usual among them; from its kindred species it is readily recognised in the peculiar appearance communicated by the glaucous bloom which overspreads the leaves; the flower-spike proceeds from the apex of the bulb, and bears from ten to fifteen large orange-red flowers, the sepals and petals being of that colour,

while the lip is bright yellow. It was received from Oaxaca by Messrs. Loddiges about four years ago. It appears to attain a greater degree of luxuriance when grown in a pot, in a compost of heath-soil of a loose texture, having some potsherds mixed up with it, than when attached to a block of wood. In a wild state it is usually found in elevated situations, and therefore does not seem to require a high temperature. — *Pax. Mag. Bot.*

APOCYNACEÆ. — *Pentandria Monogynia.*

Nerium Oleander var. *Tanglé.* A very beautiful variety of the old *Nerium Oleander*, or rose bay, with striped flowers, resembling a heavy bizarre carnation. Its name implies a Continental origin; it is grown by Messrs. Lane and Son, Nurserymen, of Great Berkhamstead, but they are not acquainted with its history. — *Pax. Mag. Bot.*

ORCHIDACEÆ § VANDEÆ. — *Gynandria Monandria.*

Cymbidium pendulum var. *brevilabre.* Evidently a variety of the well known *C. pendulum*, differing in the lip being shorter and broader, and having a much blunter middle lobe. It was received by Messrs. Loddiges, from Mr. Cuming, who found it at Singapore. — *Bot. Reg.*

VACCINIACEÆ. — *Monadelphina Decandria.*

Macleania longiflora. A very showy plant, having something of the general appearance of *Burchelia*. It was collected by Mr. Hartweg, on the main Cordillera, near Loxa, at an elevation of about 8000 feet above the sea, and will require to be kept in a warm greenhouse. It may be potted in a compost of sandy loam and peat in equal quantities. Owing to its producing very fleshy roots, a large pot or tub will be required, or, when there is convenience, it is probable it would succeed well if planted out in a conservatory; it requires a liberal supply of water in summer, but very little in winter, and to have it well furnished with young wood from the bottom for flowering; it is necessary to cut it well back early in autumn, in order to have the plant clothed with leaves before the winter. — *Bot. Reg.*

BERBERACEÆ. — *Hexandria Monogynia.*

Berberis tenuifolia. This very rare plant was found by Mr. Hartweg on his first arrival in Mexico, at a place called Taquapam, at the foot of Orizaba, and was raised among the first collection that he sent to the Horticultural Society. It is a hard-wooded graceful greenhouse plant, very apt to run up with a single stem without producing lateral buds, and when that is allowed to happen its beauty is much impaired; to prevent it, bending down so as to check the rise of the sap has been tried with success. Its flowers appear in the latter part of the year (October to December), and are agreeably sweet-scented: they are yellow, borne on a long half-pendant raceme. — *Bot. Reg.*

ROSACEÆ § QUILLAJÆ. — *Icosandria Pentagynia.*

Lindleya mespiloides. Another of Mr. Hartweg's plants, found by him by the natural bridge called Puente de Dios, forty-five miles N.E. of Real del Monte. It is an evergreen tree of small size, looking very much like *Mespilus grandiflora*, but with flowers as sweet-scented as the hawthorn bloom; in our gardens, the plant seems likely to prove about as hardy as an *Escallonia*, but not more so. Its fine evergreen foliage and large white flowers render it very desirable that it should be able to bear our climate. It remains in flower for a month or six weeks. — *Bot. Reg.*

MALVACEÆ. — *Monadelphina Polyandria.*

Hibiscus Cameroni-fulgens, *Garden Variety.* A very fine showy hybrid, from Messrs. Rollison's, Tooting, having large pale crimson flowers, and on

each division of the corolla an intensely dark crimson spot. It was raised, as the trivial name implies, from hybrid seed of *Hibiscus Cameroni*, a species bearing buff-coloured flowers, and *H. fulgens*, a variety of *H. Rosa sinensis*. We presume it to be a stove shrub. — *Bot. Reg.*

ORCHIDACEÆ § MALAXEÆ. — *Gynandria Monandria.*

Eria bractescens. Mr. Cuming found this at Sincapore, and Mr. Griffith in Burma, near Moulmain. It has a fleshy oblong stem, which bears at the summit two or three leaves, from one and a half to two inches broad, and gradually tapering to the base. Its flowers are, in the Sincapore plant, greenish white, with a lip crimson except at the end; in the Burma plant, they are more straw-coloured than green. The lip is three-lobed, has an abruptly truncated extremity, and is marked with three elevated ridges, of which the two side ones are very short, while the middle one reaches to the end of the lip. — *Bot. Reg.*

ORCHIDEÆ. — *Gynandria Monandria.*

Cattleya intermedia variegata. We have often had occasion to notice how variable are the species of many genera of orchidaceous plants. It seems to be especially the case with those of *Cattleya*. The present one has the elongated pseudo-bulb, the narrow leaves, and the lamellated labellum of *C. intermedia*, but the sepals and petals are much broader (and of a deeper colour than usual); the middle lobe of the lip is white and the lamellæ red. It was sent from Brazil by Mr. Gardner, and flowered in the stove of the Royal Botanic Gardens of Kew, in May 1843. — *Bot. Mag.*

RUBIACEÆ § HEDYOTIDEÆ. — *Pentandria Monogynia.*

Pentas carnea. Our stoves have lately exhibited a fine-flowering plant under the name of *SIPANEA carnea*, introduced by Mr. Makoy of Liege, but which, on examination, must be referred to the genus *Pentas*, a new one, so named by Mr. Bentham, from the quinary arrangement of the parts of the flower. The plant is about a foot high, scarcely shrubby, branches all herbaceous, rounded, hairy, so also are the leaves; the flowers are produced in large corymbs of a delicate purplish flesh-colour, which when borne upon the several branches of one small plant, exhibit a very lively appearance, and there is almost a continued succession of them for a great part of the year. — *Bot. Mag.*

GESNERIACEÆ. — *Didynamia Angiospermia.*

Drimonia punctata. Introduced by the Horticultural Society through the medium of their collector, Mr. Hartweg. It is cultivated in the Royal Botanic Gardens of Kew to great advantage, in a wire basket, with pieces of wood and turf, and suspended from a beam in a moist stove. In such a situation it thrives admirably, and bears its delicate yellowish or almost primrose-coloured flowers spotted with purple, copiously. As a species it is very different to the *D. serrulata*, MART. (*bicolor*, LIND.) in the shape and marking of the flower, in the short peduncle, and especially in the narrow, not cordate, base of the sepals. — *Bot. Mag.*

ONAGRACEÆ. — *Octandria Monogynia.*

Fuchsia, Queen Victoria, Smith's, Garden hybrid. This lovely variety was raised from seed by Mr. Smith, nurseryman, of Dalston, Middlesex, and elicited considerable attention when it was exhibited at the gardens of the Royal Botanic Society, in the Regent's Park, last July. In a general way, it is after the style of *F. Chandlerii*; but it is a very much

superior plant, the habit is stronger and freer, and the foliage larger, while the flowers are far more attractive and of a greater size; their dimensions, in fact, are nearly twice as great as those of *F. Chandlerii*, and the colours are richer and more decided. The sepals are of a pale whitish blush, tinged with green at the tips, long, pointed, and seldom at all reflexed, though expanding well; the corolla is particularly large, and of a deep purplish crimson hue. The plant bears its flowers in great abundance from the axils of its leaves. It will most probably be one of those sorts which look best when kept in a comparatively small state, and hence it will be advisable to propagate it frequently from cuttings, in order to have young specimens. After it begins to grow in the spring, it should never receive a check till it has nearly ceased to flower in the autumn. One of its good properties appears to be that its blossoms do not fall off like those of other *Fuchsias*, but remain on till they are quite withered. It also bears forcing remarkably well. — *Pax. Mag. Bot.*

BROMELIACEÆ. — *Hexandria Monogynia.*

Barbacenia squamata. For the introduction of this plant, cultivators are indebted to Messrs. Veitch and Sons, of Exeter, whose collector, Mr. Lobb, forwarded seeds from Brazil in 1841. The genus *Barbacenia* has been long known to the admirers of plants through the *B. purpurea*, another Brazilian species of considerable merit, and through the more recently introduced *B. gracilis*. These are all that have yet been received in England, though twelve species are mentioned by Martius in his *Plantarum Brasiliensis*. They are found growing in arid situations on mountains, at an elevation of from 1000 to 1500 feet, and only between the 14th and 23d degrees of latitude. Most of the species — and amongst them the present — have long narrow leaves collected on a short stem into a tuft, and when without their flowers have an appearance resembling some of our mountain sedges. The flowers are solitary, on long slender footstalks, the tube and sepals of a pale bright orange, and the petals the same colour, but of a darker shade. Few plants are able to bear the want of water for a longer period without sustaining injury, and, except during the period of the most active growth, much moisture appears to be inimical to their welfare. They require a warm moist heat to start them in spring, but a cool and dry situation is necessary to induce them to develop an abundance of bloom, and to preserve them through the winter. — *Pax. Mag. Bot.*

ERICACEÆ. — *Octandria Monogynia.*

Erica Murryana. A hybrid raised by Mr. A. Turnbull, of Bothwell Castle gardens, near Hamilton, Scotland. It is between *E. aristata minor* and *E. vestita coccinea*, possessing much of the habit of the former, and the brilliant flowers of the latter, but differing in a terminal and less dense head. It is a fine variety. — *Pax. Mag. Bot.*

PLUMBAGINÆ. — *Pentandria Pentagynia.*

Statice Pseudo-ameria. A very handsome greenhouse species, having small neat foliage, and large dense heads of bright pink flowers, probably the easiest to manage, and the most showy of the whole genus.

Respecting its native place we have been unable to gather any information. Messrs. Rollison received plants of it from the *Jardin des Plantes* in Paris in the summer of 1841. But these were unaccompanied by any memoranda. Probably with several other members of the genus, it is a native of the South of Europe. — *Pax. Mag. Bot.*

VISITS TO REMARKABLE PLACES.

The Fence, Macclesfield, the seat of T. Brocklehurst, Esq. — A large collection of Orchidaceous plants is here located from all parts, in rich luxuriance. The principal point in their cultivation and which we have not seen elsewhere, except in our own practice, is the constant and necessary supply of moisture to the atmosphere, by means of cisterns or wide troughs containing water, which stand on and cover the whole of the stage on which the plants are arranged; it is well known to all acquainted with the management of this beautiful and curious tribe of plants, that without a regular and controllable supply of moisture while growing, success with Orchidaceæ is nearly hopeless; and knowing this, we much wonder that a more efficient system of supplying it than the usual laborious, and often injurious one of syringing, has not been more generally resorted to. It is not a sudden and saturating supply that is required, but a constant and genial amount of aqueous matter in the atmosphere sufficient for the support of the plants, but not more than they can imbibe without injury: aided by these wide troughs holding water to the depth of about an inch, the cultivator may secure a damp atmosphere; and with the addition of a gentle steaming from the heating apparatus at night, will find the syringe almost unnecessary: with us the plants stand in the water of the troughs, and thus moisture is given to the roots as well as to the atmosphere, nor do we find any ill effects from what at first sight will appear an excess, but, on the contrary, a strong growth is the usual result. At the Fence, however, the plants are elevated three or four inches above the water, which removes all apprehension of the kind alluded to. We observed the following plants in flower at the time of our visit.

Aspasia nova sp., from Panama, fine specimen; *Bletia florida*; *Brassia Lanceana*; *Brassavola venusta*; *B. angustata*, fine; *Cyrtopodium Andersonii*, fine specimen, with three spikes; *Dendrobium nobile*; *D. cærulescens*, both large; *D. elongatum*; *D. Pierardi*; *D. cambridgensis*; *Dicrypta iridifolia*; *Epidendrum ellipticum*; *E. elongatum*; *E. crassifolium*; *E. capitatum*; *E. nocturnum latifolium*; *E. nocturnum angustifolium*; *E. nova* species, from Panama; *Eria pedunculata*; *E. pubescens*; *E. stellata*; *Gongora atropurpurea*, *G. maculata*, *G. maculata fulva*, all very fine specimens; *Govenia superba*, very fine spike of sweet-scented flowers; *Lycaste macrophylla*; *L. cruenta*; *Oncidium longifolium*, two fine varieties; *O. ascendens*; *O. ampliatum*, a fine specimen, with three strong spikes; *O. reflexum*; *O. luridum*; *Phaius grandifolius*, three fine specimens; *Ph. Wallichianus*, a noble plant, with three strong spikes of large handsome flowers.

TO CORRESPONDENTS.

C. S., Abergavenny. — Every application of Guano is an experiment, no two samples being of the same quality, and this it is that renders it so extremely difficult to determine the exact proportion to be used, that we constantly hesitate to recommend it for horticultural purposes; however, as you are so desirous of trying it, begin with a pound in eight or nine gallons of water: you can then increase or diminish the quantity as the result may seem to require, but be careful of overdoing it: on no account must you water overhead with the solution.

A YOUNG FLORIST. — Tobacco-water will effectually rid your auriculas of greenflies: to prepare it, steep half a pound of strong tobacco in a couple of quarts of hot water, let it stand all night, strain it off, and either dip the heads of the plants into it, or syringe them all over with the preparation; one application will clear them.

X. R. — The above will be the best remedy for a similar pest on your roses, or you may sprinkle snuff over the infested shoots.

A. A., Lowick. — The following are what may be termed standard flowers. The prices we cannot give, but you may obtain them of Brown, of Slough; Thompson, of Iver; Henschman, of Edmonton; or of any respectable provincial Nurseryman.

Brown's Cotherstone.

Curion.

Miss Stainforth.

Cook's Perfection.

Peter Dick.

Duchess of Beaufort.

Silverlock's Prince Albert.

Thompson's Regulator.

Desirable.

Warrior.

Jehu.

Beauty of Bucks.

We have seen some very desirable seedlings which are to come out shortly.

A MANCHESTER SUBSCRIBER. — *Cobæa scandens* will succeed in any light rich soil. To prepare a compost for it, mix equal quantities of loam, leaf-mould, and well-rotted stable manure.

CALENDAR FOR JUNE.

As the past month or two have been the scenes of active preparation and energetic exertion, in laying the foundation of future development, and of encouragement in the first opening vistas of the floral season,—so must the characteristics of the present and the future be responsive to the past; and those who love and admire flowers, and seek to enjoy the pleasure of witnessing with satisfaction the effect of their own past exertions, must bear constantly in mind that the pass-word is "Onward."

STOVE. The directions given in former numbers, with respect to the *principles* which should form the guide to safe and successful *practice*, will continue to be applicable with equal force throughout the season of growth. In no case, administer any check to the development of plants at this season; but rather

let the growth be rapid, and unobstructed in its course, avoiding only the extreme of excitement, which would be the cause of weak and imperfect growth. Get acquainted with the natural circumstances and conditions of growth of each particular plant, so as to be able by this knowledge to vary to each its proportion of light, heat, shade, and moisture. Continue to attend closely to climbing plants, regulating the branches, and taking away any that may be superfluous; by no means suffer them in the first stages of growth to assume what afterwards may be allowed, "an air of native grace;" keep the house cool at night. Propagation may go on.

GREENHOUSE. The bulk of the plants may be removed to the open air; place them in a situation where they may receive a fair share of sun, and by no means in a shaded or very confined situation: the pots should be plunged in some cool light medium—such as coal ashes, to protect the roots from the injury they are liable to sustain from rapid evaporation. The interior must be managed with direct reference to whatever may happen to be its temporary or summer inmates—if some of the rarer greenhouse plants, it should be kept comparatively cool—if tender annuals, it should be kept warm and moist. These two kinds of plants will not do *well* together.

FLOWER-GARDEN. Many of the allotted inhabitants of this department will be "out," and growing; many more doubtless remain to "go out," and these should be attended to without delay. Propagate and plan for successional flowers in good variety throughout the season: this, with attention to keeping those already planted out with a neat and gardenesque aspect, will embrace the principal *points* in summer flower-gardening. All delicate flowers should be shaded from intense sun heat, in order to prolong their existence; the best means of doing this would be that plan which, while it secured the end in view, offered the least obstruction to the examination and display of the flowers. Keep a good look out for instances of the transformation of the parts of plants, such as petals changed to leaves, stamens to petals, &c.; these changes are better known under the name of "morphology," and are far more numerous than those who have never thought about them would imagine: send a report of them to the Editor.

T. M.



THE
FLORIST'S JOURNAL.

JULY, 1844.

ON THE GENUS BIGNONIA.

WITH AN ENGRAVING OF B. PICTA.

THIS fine group of plants, which includes upwards of sixty species, was named in memory of Abbé Mignon, librarian to Louis XIV. The larger portion are climbing plants of acknowledged beauty, having a most extensive geographical range; the East and West Indies, Mexico, and South America, being the native home of many of our stove kinds, while Northern America has supplied us with others to adorn our conservatories and out-of-door walls.

Notwithstanding this great range of country, the species soon become assimilated in the required treatment, and nearly any or all of them may be grown even together in an intermediate house or cool stove. Their fine pinnate, ternate, or conjugate foliage, and large handsome flowers in panicles of red, blue, yellow, or white, render them eminently beautiful objects for covering the pillars or roof of a plant stove or conservatory. In the latter the majority of the species luxuriate with a degree of splendour seldom witnessed in other genera; this kind of structure seems peculiarly suited to them, first because of the genial, temperately warm atmosphere maintained, and accession of fresh air, and also because of the freedom which may be allowed to their rapidly extending shoots in the growing season.

Extensive as is the genus *Bignonia* even now, it was considerably larger a few years since, when, by a revision which reduced it in a numerical view, but rendered it more definable, the new genus *Tecoma* was formed, when the well-known hardy *radicans*

and its varieties, together with *capensis*, *Pandora*, *grandiflora*, *meonantha*, and several other species were referred from *Bignonia* to it; at the same time we should mention, there are some species of the genera, *Jacaranda*, *Incurvillea*, and *Millingtonia*, which more properly belong to the genus under consideration.

We proceed to enumerate a few of the most ornamental, premising, however, that some of them will be found placed as suitable for a lower temperature than is generally considered necessary, because we have found an excess of heat to be conducive to the production of wood alone, a paucity of flowers frequently following this unnecessary stimulation of the plant.

B. alba, syn. *Jacaranda alba*, is a fine evergreen climber, brought from Guiana in 1823. A sunny situation in the conservatory should be chosen for this, where its lovely white scented flowers will be seen to much advantage.

B. Chamberlaynii, a variety of *equinoctialis* with yellow flowers, is extremely well suited for the topmost part of the roof, as it will extend its branches from 30 to 50 feet; this was introduced in 1820 from Brazil.

B. capreolata is sufficiently hardy to withstand our ordinary winters in the open air, even without protection; still it is the safer plan to plant it against a wall having a southern aspect, and to adopt the usual precautionary method of covering with mats in severe weather; a warm situation such as described is necessary to enable the plant to produce its fine scarlet flowers. This plant is described as having a most beautiful appearance when seen in its native haunts, the rocks and forests of North America, where it attracted attention and was brought here in 1710.

B. grandifolia. This is another extremely fine conservatory species, readily extending over a large space; it seems to require age alone, to enable it to flower well: the colours of the flowers are an indescribable mixture of orange and purple. There are several species which, like this one, require to attain a certain age before they put forth flowers in any quantity; nor will any known treatment induce them to a precocious development, so that many really fine and desirable kinds have been absurdly condemned and destroyed, before they have had a fair chance of displaying their proper characters; this should be borne in mind by those who cultivate *Bignonias*.

B. jasminifolia and *B. jasminoides* are both beautiful, the first a white flowering species of rather smaller habit, requiring the stove to produce it in perfection ; it was brought from Orinoco in 1826. And the latter having purple flowers, will succeed very well in a common greenhouse, being a native of Moreton Bay, whence it was imported in 1830.

B. picta, the subject of our present illustration, is supposed to be a native of Buenos-Ayres, or the adjacent parts of South America : though the history of its introduction is very obscure, the year 1823 may be set down as the date of its first appearance. It did not produce flowers until last season (1843), when it first appeared in the stove at Messrs. Rollinson's Nursery, Tooting, whence we obtained the flowers which form our drawing, and where about a month or six weeks since it was producing freely its fine lilac and purple striped flowers. They are borne in pairs, on nearly all parts of the plant, standing forward from among the foliage, on short lateral branches. The habit of the plant is of a less rambling character than is usual among the species, being compact, neat, and interesting, too large for a moveable trellis, but particularly adapted to the bottom of the rafters or front of the house : although growing at present in the stove, there appears to be every probability of its succeeding as well or better in a cooler temperature ; indeed it has been conjectured from its natural habitat, that it will prove as hardy as *B. capreolata* ; but if we take an intermediate station for it in the greenhouse, where it will be a fine acquisition, there is no doubt of its succeeding.

Besides the climbing kinds, there are one or two species which assume a more arborescent character, and are worth attention : the first of them, *B. Leucoxydon*, is a stove evergreen tree, producing large pink trumpet-shaped flowers. It is a very old plant, though nearly out of cultivation at the present time, having been brought from the West Indies in 1759.

B. serratifolia, another fine shrub-like species, has very handsome yellow flowers which contrast prettily with its bright green serrated foliage : this too requires a stove treatment, having been brought from Cuba in 1822.

B. suberosa, syn. *Millingtonia hortensis*, is an interesting plant, attaining a considerable size ; the flowers are white, agreeably scented, and produced copiously when the plant is allowed a sufficient degree of heat. Being a native of the East

Indies it requires the warmest part of the plant stove: this perhaps, and the large space it occupies when grown well, has been the principal cause for rejecting it from the generality of collections; still where room can be allowed, it is a desirable plant.

The general management of *Bignonia* is extremely simple and uniform; all the species, whether climbers or not, delight in rich fibrous loam, with which a small portion of heath mould may be mixed in order to preserve it open and permeable to the roots. The climbing species grow most luxuriantly, and consequently arrive at a flowering state earlier, when planted in the borders of the house which they are intended to ornament: they should be pruned annually, the best season for which is September and October, when all unripe or immature wood should be cut away, so that the remaining portion may have the full influence of light and air, as it frequently happens that when the branches are left in a crowded state mildew attacks them, and the growth of the succeeding year is weak and unfruitful. The management of arborescent kinds differs in no respect from that usual for other stove plants, while the treatment of the hardy and deciduous species may be assimilated correctly with that usual for the grape vine.

EDITOR.

THE EFFECTS OF THE SEASON.

SIR,—Florists are privileged to complain of the weather, and to find what faults they please with the seasons, and I, as one, cannot resist the temptation which this privilege offers; for really my experience does not extend to such another as the present. For nearly twenty-seven weeks *we* have not had so much rain as would form a good shower, and in consequence every class of vegetation out of doors is fast losing that active vitality so necessary to the production of flowers and seed, and which we look for and admire so much at this season. Watering and the application of mulch, or manure, can only be regarded as a means to defer the evil; they will not, cannot impart the vigour that a single shower of rain would: still, such is the only remedy, and therefore must claim, and be allowed the first attention. In this neighbourhood *Ranunculuses*, *Pinks*, *Car-*

nations and Picotees, are all suffering severely; my bed of the first is a complete failure,—the greater portion of the plants are dead,—and those which still exist are too weak to produce even an average flower.

The grass of the Pinks is small, though not so bad as might have been expected; this I attribute to the mulching, which, by preventing the evaporation of moisture from the bed, has contributed greatly to the benefit of the plants; but strange to state, not a single flower on a bed containing nearly two hundred plants, has produced a particle of “lacing,” so that the entire bloom is utterly useless for showing; from my whole stock I cannot cut six blooms in a perfect state. Carnations and Picotees are failing rapidly before this arid atmosphere, and the ravages of the green fly. Roses, too, are literally covered with them; as an antidote to these pests I have used a variety of “infallible receipts,” but find nothing better than tobacco, either in solution or powder: the tobacco water I prefer where it can be used, and in cases where it is not suitable I apply snuff. Camphoretted spirits, diluted with water, I have found efficacious, but the expense of the article will prevent its general adoption. Ammonia has scarcely any effect upon them, as they will live in a closely stopped vial containing hartshorn. Knowing the effect of oil on some individuals of the beetle tribe I was induced to try it on these destructive insects, but to my cost I found that in proving fatal to the green flies, it exercised a similar agency on the leaves and young wood of the roses.

But to mention at once the cause of my now troubling you, — the failure of my Ranunculuses I imagine to be owing chiefly to the fall of rain we experienced towards the close of last season, which probably occasioned a re-action of the roots before they could be got out of the ground; and to prevent a recurrence of the weakening effects of this second growth, I feel inclined to take up the roots, on the first approach of wet weather, hoping thus to save such as are still in existence. On this point I shall be thankful for a little advice, — as also some information as to the cause or causes of the entire absence of colouring round the margins of the petals of the pinks. I am aware that spring planting frequently produces a similar result; but in this case the planting was done in October, after the most approved mode; — perhaps some of your correspond-

ents, who have had experience on this matter, will assign a reason, and thus oblige

A CONSTANT READER IN SUSSEX.

June 14, 1844.

[We insert the above letter entire, as it at once conveys information, and opens a matter of much consequence for inquiry. With respect to the Ranunculi we think our correspondent cannot do better than he proposes. The want of the due proportion of lacing in Pinks is a source of frequent disappointment to florists, and as we think the cause of it well worthy consideration, for which purpose we defer it for the present, and shall be glad to receive the opinions of our friends on the subject. — ED.]

LIST OF ORCHIDEÆ.

(Continued from page 114.)

193. *Lycaste tetragona* (four-angled). Plant pseudo-bulbous, bulb three inches long, tapering towards the summit; leaves single, one foot long, of a lanceolate shape; flowers borne on a short stem, proceeding from the base of the bulb, four to five in number; sepals and petals pale green, flamed with brown, the former broader than the latter, and ending in an acute point; the labellum is singularly shaped in the form of a jug, white on the outside with a blotch of purple on the apex, the inside dark purple; the flower possesses a disagreeable scent. This is a singular species, requiring to be grown in a mixture of sphagnum, turfy peat, and rotten wood or charcoal, and should be elevated a little above the rim of the pot. It requires but a scanty supply of water, with a temperature of 65° to 70°. — *Native of Brazil.*

194. *Lycaste cruenta*. (Derived from blood colour.) Plant pseudo-bulbous, bulbs very similar in growth to *L. aromatica*; the flowers are a great deal larger, and produced in clusters from the base of the bulb; the flower stalk is from three to four inches long; the sepals are yellowish green, and the petals are orange, with a few dark red spots at the base; the labellum orange, spotted at the base with blood colour. This species is well worth growing on account of its free habit of flowering. It requires the same treatment and temperature as the above. — *Native of Brazil.*

195. *Lycaste aromatica*. Plant pseudo-bulbous; bulbs nearly three inches long, rather broad; leaves ovate-lanceolate; flowers produced in clusters; sepals greenish yellow; petals orange colour; labellum orange; with a very powerful scent of cinnamon, particularly early in the morning. It requires the same treatment and temperature as the others. — *Native of Mexico.*

196. *Lycaste Skinnerii*. Plant pseudo-bulbous; bulbs ovate, and four-angled, of a dark green colour; leaves one foot long, ovate-lanceolate; flower stem nearly erect; sepals nearly three inches long, of a dirty white; petals of nearly the same colour; labellum white, beautifully spotted with purple along the throat. This is one of the handsomest of the entire genus, and exceedingly scarce at present. It appears to sport a great deal in the colour of the flowers, nearly all of those that have yet flowered having exhibited

some difference in regard to the colour. It succeeds well under the treatment recommended for the others.—*Native of Guatemala.*

[This genus is a division from *Maxillaria*, and has lately been arranged by Dr. Lindley.]

197. *Lælia albida*. Plant pseudo-bulbous; bulbs two inches long, round, somewhat wrinkled, and tapering a little towards the summit; leaves nearly one foot long; flowers produced on a spike rising from the summit of the bulb, of a pure white, having the centre of the labellum marked with yellow, surrounded with a slight stain of purple. This is a fine species, requiring a low temperature, with a liberal supply of moisture. It will do either on a block of wood, with a little moss tied round, or in a pot in a mixture of sphagnum, rotten wood, and a little turfy peat, with a temperature of 60° to 64° while growing.—*Native of Bolanos.*

198. *Lælia acuminata*. (Derived from tapering.) Plant pseudo-bulbous; bulbs two inches long, rather flat; leaves four inches long, and nearly three inches broad; flower-spike rising from the summit of the bulb; flowers white, slightly stained with purple, having a tinge of sulphur on the labellum, and the throat strangely marked with purple. This is another fine species (called by the natives Flor d'Jesus), which requires hanging upon a log of wood, with a liberal supply of water during its growth; temperature, 60° to 64°.—*Native of Oaxaca.*

199. *Lælia majalis*. Plant pseudo-bulbous; bulbs two inches long, tapering nearly to an acute point; flowers produced singly on a short stem; the sepals and petals rosy lilac; labellum 3-lobed, the two side lobes white, tinged with lilac, and surrounding the column, the other lobe white, stained with rosy purple, with occasionally a darker blotch. The natives call this Flor d'Mayo, or May flower. It requires pot cultivation in a mixture of sphagnum, rotten wood, and turfy peat, with a liberal supply of water while growing, and a temperature of 60° to 64°.—*Native of Bolanos.*

200. *Lælia anceps*. Plant with bulbs five inches long, leaves four inches long, crisp and erect, produced singly on the summit of the bulb; flower-spike two feet long; flowers produced at the extremity; sepals and petals fine lilac; labellum same colour with a fine blotch of rich purple. This is a handsome species well worthy the notice of all cultivators; it does well either on a chump of wood or in a pot: a liberal supply of water must be allowed during its growth, and a temperature of 68° to 74°.—*Native of Oaxaca.*

201. *Lælia anceps* var. *Barkeriana*. This is a variety of the above: its growth is similar, but its flowers are rather larger as well as richer in the colouring; it requires the same treatment and temperature as the other, and should be in every collection.—*Native of Mexico.*

202. *Lælia cinnabarina*. Plant pseudo-bulbous; bulbs seven inches long, tapering a little to the summit, and stained with a crimson hue: its leaves are produced singly at the summit of the bulb, about eight inches long and a little waved; the flower-spike is also produced from the summit from one to two feet long; the flowers are of an orange red or cinnamon colour, from whence it takes its specific name. This requires pot cultivation, in a mixture of turfy peat, sphagnum, and a little rotten wood; when placed in a moist situation it requires but little water with a temperature of 65° to 70°.—*Native of Brazil.*

203. *Lælia superbiens* (superb-flowered). Plant pseudo-bulbous; bulbs one foot long and rather angled; the leaves are produced mostly in pairs, ten inches long and nearly three inches broad, of a crisp habit; its flower-spike is produced from the summit of the bulb, and in its native country sometimes

grows four yards long, and produces twenty or more flowers near the apex, the sepals lanceolate, equal, white, tinged towards the apex with rosy lilac; labellum three-lobed, the two side lobes yellow edged with purple, the middle lobe yellow tinged with purple, having a darker stain of the same colour in the centre. This is a very strong growing species, requiring to be hung up either on a log or in a basket, in a mixture of turfy peat, sphagnum, and a little rotten wood, and an abundant supply of water during its growing season, with a temperature of about 60° to 64°.— *Native of Guatemala.*

J. HENSHALL.

(*To be continued.*)

ON THE PREVALENCE OF GANGRENE.

NEVER in any season previous to the present have we witnessed and heard of the so frequent and deplorable recurrence of sudden deaths among plants of all classes, from the hardy evergreen to the tender and delicate exotic. The majority of the cases which have come under our own observation may be certainly referred to that infectious, sudden, and almost irremediable disease commonly known as gangrene; and, as it appears probable that the evil will be widely and rapidly extended, through the influence of the present hot, dry weather, we think some explanation of the causes may not be ill-timed, and probably be the means of arresting its further progress;—at least in cases where plants are dying, without the cultivator being able to assign any reason, it may assist him to conjecture the cause, a knowledge of which is the first step towards a remedy. Gangrene in the vegetable is analogous to an epidemic in the animal kingdom: it originates in the same cause, acts in a similar manner, and is followed by the same results. There are two kinds of gangrene, the dry and the moist; the first is by far the worst, seldom becoming evident until the death of the plant proclaims it. The symptoms are— a sudden cessation of the vital powers of the plant; the leaves and young shoots assume a black or dark-brown appearance, which extends itself to the inner bark, and is terminated only by the death of the entire plant, and that so suddenly, that we could instance some plants which in the morning were in the most robust health, and before noon were shrivelled bundles of twigs without a leaf on them. This variety of the disease is that which ericaceous plants are peculiarly subject to. It is chiefly occasioned by excessive degrees or changes of the tem-

perature, the effects of a very low temperature and of extreme heat being precisely alike; either of them, it is well known, causing death even when brought about by gradations. How much more violent, then, must be their action, when the change is as sudden as the difference is great; yet such fluctuations we have experienced continually throughout the present season, and to the effects of these changes must be attributed much of the loss which has occurred. In looking for a remedy we must explain that, though the symptoms are visible only in the leaves and branches of the plant, there cannot be a doubt of the effect being first felt by the roots, and it is here the preventive must be applied. Any means which present as likely to ward off the extremes of heat or cold, or the changes spoken of, will be appropriate to the purpose. The fruitful cause of the deaths which we have noticed this season is the exposure of the *pots* in which the plants are growing to the direct rays of the sun, which at times have been sufficiently intense to destroy the vitality of the roots, and consequently of the plant.

Another cause has been, and is, still in active operation—we advert to the dry cutting winds which have been so prevalent since March last, more in effect like the harmattan winds of the coast of Africa: this it is that has proved so destructive to the hardier plants standing in exposed situations.

Sometimes dry gangrene is occasioned by the too rapid growth of a particular branch, which by absorbing the nourishment due to those placed next it, necessarily induces their decay; this, however, is not so deadly in its consequences, and may be checked by a diversion of the sap, either by cutting away entirely the overgrowth, or by pinching off the leading point, which will force it to throw out laterals, and thus reduce the branches to an equal size. It is also caused in some instances by the attacks of parasitical fungi and insects: these, by fixing themselves, the first on the roots, and the latter on the leaves and branches, soon reduce the plant to a state of prostration it seldom recovers from; the removal of the insects is easy, but the fungi are frequently very difficult to eradicate: the only topical application likely to effect the purpose is lime-water; if this fails, the speedy removal of the plant to other and better soil is the only remedy.

Moist gangrene is more partial in its effects, and consequently less dangerous: it is chiefly confined to the leaves, flowers, and

fruit, and is known by the parts becoming at first moist and soft, and then dissolving into a foul black ichor; this variety of the disease infects some species of Cacti most particularly, and is very sudden in its action, beginning from a small black spot, which spreads till the whole leaf or branch rots off, or the shrub dies. Aquatic plants frequently suffer from this disease. It may be traced to a variety of causes, in some instances originating in too wet or even too rich a soil, in others by a severe contusion or abrasion of the epidermis; in all cases it is infectious, and should therefore be speedily removed. There does not appear to be any remedy for it; and in point of fact it is impossible there should be, for it is not seen until an entire disruption of the parts affected has taken place: therefore, to prevent its extension, every part of the plant exhibiting the smallest germ of the disease should be cut away on the earliest discovery, or the destruction of the whole plant, and not it alone, but probably others standing near, must inevitably follow.

EDITOR.

AN ENQUIRY INTO THE PRINCIPLES OF ACCUMULATIVE POTTING.

It is no uncommon thing for prejudice to be carried to such an undue extent, as to form a barrier against the admission of truth; and this is nowhere more strikingly demonstrated than in the horticultural world. When any new system is advanced, it is too often hastily condemned as being theoretical in its nature, with the greater inconsistency attached to the objection, from the fact that practical gardeners have much to do with theory, although generally unwilling to admit it. Seasons are not always alike, neither is our practice everywhere the same, for we are often called upon to exercise it in various localities; so that we have to bring into action speculative ideas, where no practical rules exist. Would not, therefore, an acquaintance with the laws which govern the growth of vegetation be of essential service to the gardener? Many of us are successful in our daily operations, owing to the influence of the favourable circumstances under which we are placed (or surrounded), and we do not further trouble ourselves in endeavouring to assign a cause for the result obtained. As regards the theory of the one-shift system, I shall endeavour to show why such successful results have already

attended the adoption of that principle : we are fully aware, that the chief source from whence plants derive their food is from the soil (it containing the necessary elements), by the aid of water, and that this important part of vegetable economy may be understood, I shall proceed to an humble attempt of an explanation of the spongiole, which takes up the food for the maintenance of vital action. By an inquiry into the nature of such, we should readily see the beneficial effects which must result to the majority of plants from adopting that system. We are informed by botanists from microscopical investigations, that each of these spongioles has an important office to discharge ; their cellular tissues holding carbonic acid in solution, the ducts convey the fluid, while the spiral vessels charged with oxygen take it up for the support of the plant : it must then be obvious to all, that an obstruction, in checking the action or reaction of the spongiole, must tend to produce injurious effects, though ever so minute.

In the removal of a plant from one pot to another, it is found, provided the plant is in good health, that the roots are adhering to the pots, and compressed from the confined space. It is then evident, in the constant repotting of a plant, it must be productive of injurious effects, by tending to disturb the action or crush the vessels of the spongiole. If such take place, it must require time to regain its former vigour. Should the plant have been in a flourishing state, the leaves will soon exhibit signs of the evil : thus, in order to supply the waste which arises from the emission of oxygen, or evaporation which takes place in the leaves, an over-supply of water is resorted to, and the earth in many cases becomes soddened, though the drainage may be good, the spongioles from this check being unable to take up the necessary fluid.

With those plants which have to acquire a large amount of growth in a given space of time the evil must be still greater, as in the Balsam and other tender annuals ; and this tends to retard their growth, producing premature flowering. It has been argued, that in applying so great a body of earth to a plant, which requires a length of time before its root can occupy the space allowed, the soil may become impure from the repeated application of water : this must depend on the drainage, or the state of the pot. Though the spongioles are deprived of light, yet the admission of atmospheric air is necessary for their well-doing, as may be plainly seen by their intermixing with the

crocks, or clinging to the sides of the pot, on account of their property of absorption. It has been proved, by experience, that plants which required a length of time, by the old system, to form large specimens — for instance, Heaths and Epacris — have not failed in acquiring the required growth in a much shorter time by the use of large pots.

It has been said, that plants of a more delicate structure have been lost by adopting that plan as a mode of culture ; but have not many been lost otherwise ? It appears to me that the nicest care is required in the watering, which should be intrusted only to one person. Again, the regulating of such must depend on the nature of your soil : the localities too, in which plants are growing, are either the promoters or retarders of their growth ; it cannot be expected that plants will thrive so well where the air is rendered impure by the mixing of various gases, or in confined places or damp seasons, so as to prevent a free current of air passing through them, and thus causing the pots to become encrusted with impure matter, not readily admitting of absorption, for plants will ever depend for their success on the influence of their situation, combined with skill. It is evident, on reflection, that where the roots have not sufficient space to perform freely their respective offices, that in order to supply the deficiency, other organs will become enlarged, so as to weaken the plant, though for a time it may not be visible, such as throwing out a greater number of leaves, in order to provide a remedy by absorption.

That we may work opposite to the laws of nature, and thus produce distortion, and even an alteration of the structure of a plant, is unfortunately too often proved, and a confirmation of it came under my own notice during the past season. Having some plants of *Deutzia scabra* which had been forced, I was induced to examine the under side of the leaves by a microscope, in order to observe the beautiful phenomena they usually present, when both leaves and flowers were found distorted from their proper and natural characters, evidently the result of the unnatural treatment they had experienced in the course of forcing, for the leaves of other plants growing in the open ground were in possession of their proper characters. The relation between this distorted vegetation and the action of the spongioles in their then altered state, as effected by the change of treatment, I propose to reserve for another communication.

J. F. M'ELROY.

THE CULTURE OF PENTAS CARNEA.

SIR,—This lovely plant, I am persuaded, will be in great requisition, so soon as it has had time to become known, among all who delight in the possession of Flora's gems. Its rapid and proportionable growth, and the immense number and long succession of flowers which it produces, must render it an especial favourite in all collections, more particularly with those cultivators who require a large number of fine plants several times in the season, for exhibiting; the delicate flesh-coloured flowers of this plant affording an agreeable resting-place for the eye, after traversing the more vivid beauties which in such a situation surround it. The habit and date of its introduction you have already given in your notices of new plants, therefore I proceed at once to the cultivation; believing there are many who will receive it this season, without an opportunity of previously acquiring any information as to its habits, to whom these remarks may probably be of service. It was thought when the plant was first brought into notice, from consideration of the situation in which it was found, that a very moderate degree of warmth would be sufficient to produce it in its greatest beauty; but the experience of a season has shown that, though it will exist in a common greenhouse, yet to properly develop its best character, a very warm atmosphere is necessary. My mode of management, which has resulted in very fine plants, is this. The plants were received last December, very small and sickly, in sixty-sized pots. In a fortnight afterwards they were repotted; two of them being placed in large pots at once, and removed to a forcing-pit; the other two were put into pots only one size larger than those they were removed from, and then placed in the plant stove; the soil used being a mixture of peat and loam, with a small proportion of sand. Those subject to the large shift and the influence of the warmer atmosphere made most rapid progress, increasing their size full four times in the course of the first two months, and are now large plants; having been stopped twice, they present dense heads, almost covered with bunches of blossoms: whilst the pair of plants which were treated with small pots and the comparatively cool temperature of the ordinary stove, after having been repotted twice, offer but a weak at-

tenuated appearance; and though they have grown considerably, still, when seen near the others, are decidedly inferior. From this I infer, that, to have them in perfection, it is necessary to start them early, that time may be obtained to allow for stopping the growing shoots at least twice in the course of the season, which is most essential to increase the size of the plant; and, as the corymbs of flowers are produced terminally, by inducing the plant by these means to throw out more branches, we consequently increase the number of heads of flowers: and, from the great difference observable in the appearance of the foliage of the plants that were grown in the warm pit and those in the stove, it seems equally necessary to allow them a temperature of from 65° to 75° , throughout the growing season; but it must be remembered that, in a heat of this amount, the plants will require a situation near the glass, or it is probable the new shoots will speedily become drawn. After the required growth has been obtained, and the flowers are about opening, no better place will be found than the conservatory, where they will remain flowering all the season.

P.

LIST OF NEW PLANTS.

ORCHIDÆ. — *Gynandria Monandria*.

Lælia majalis. Although this beautiful epiphyte has been very liberally distributed, it has, until the present instance, evaded the cultivator's art, and obstinately refused to flower. It is a native of the most temperate parts of Mexico, being found by Mr. Hartweg in San Bartolo, "in situations so elevated that the temperature sometimes falls below the freezing point. This habitat, so unusual for an orchidaceous plant, will go far to explain the ill success that has hitherto attended its cultivation; for while it is easy to imitate the close and humid atmosphere in which most of the tribe are found, it is infinitely more difficult to provide a substitute for the pure air and frequent changes of temperature in which these mountain epiphytes would seem to delight."

The management under which it has flowered with M. D. Llewelyn of Penllergare is as follows:—

"The plant, after being potted in very rough fibrous peat, was kept nearly dry, in a cool plant-house, until its new buds began to swell, when it was removed to a hot and damp stove, water being given regularly until its buds had acquired their full size; after which it was discontinued by degrees, and the plant carried back to a lower temperature. This treatment has been repeated, and under it the entire genus seems to thrive."

The sepals and petals are of a uniform bright lilac. The base of the lip is white, slightly tinged and spotted with lilac, while the expanded portion has the same colour, but of a darker shade, thickly studded with spots and bars of crimson. — *Bot. Reg.*

CAPRIFOLIACEÆ. — *Pentandria Monogynia*.

Lonicera diversifolia. In many respects this Himalayan shrub is much like the common fly honeysuckle (*L. Xylosteum*), from which it principally differs in its flowers being nearly or quite stalkless, and much larger. Dr. Wallich first received it from the mountains of Gurwhal; he afterwards procured it from Kamaon. In a wild state it sometimes becomes small-leaved, and approaches the common xylosteum, but its stalkless flowers still distinguish it. It is a hardy middle-sized shrub, which thrives in any good garden soil, and flowers during the months of May and June. It was raised in the garden of the Horticultural Society of London from seeds received from Dr. Royle from the north of India. — *Bot. Reg.*

ORCHIDÆÆ. — *Gynandria Monandria*.

Epidendrum pterocarpum. We cannot say much as to the beauty of this plant, which flowered with Messrs. Loddiges in December, 1842. It, however, presents a remarkable instance of the formation of broad wings by the fruit, which, when ripe, has three of them of considerable size.

The flowers are a brownish green, with a broad, rolled-up, yellow variegated lip, whose middle lobe is whitish. It is a native of Mexico, and closely allied to *E. tessellatum*. — *Bot. Reg.*

ORCHIDÆÆ. — *Gynandria Monandria*.

Disa cornuta. An interesting orchidaceous plant from the Cape of Good Hope, bearing the usual characters of the terrestrial portion of the tribe. The base of the leaves, which are lanceolate, is richly spotted with reddish brown; the stem, including the flower-spike, rises to about a foot in height, the flowers occupying nearly one half of it: they are of a medium size; the two lower sepals are white, and are bent downwards; the upper or middle one is cucullate, or helmet-shaped, violet-coloured, with a green edge concealing the column and petals, and terminating behind in a long green spur or horn, whence the specific name; the petals are small, green, and almost hid; the lip small, spatulate, green, with a large black velvety spot. It was introduced to the Royal Gardens of Kew in the summer of 1843, and bloomed in December of the same year in a cool stove; the plants then died down. But so little is known of the proper mode of treatment for Cape Orchidææ as to make it very uncertain if the same roots will flower a second time in England. — *Bot. Mag.*

DIPSACEÆ. — *Diandria Monogynia*.

Morina longifolia. — A very handsome and a hardy plant, possessing much of the general aspect of a *Phlomis*. The flowers are produced in whorls on a spike of about a foot in length; the tube of the flower is white, and the limb, which is divided into five segments, is a deep rose-colour. It is a native of Northern India, being found by Dr. Wallich in Gossam Than, and by Dr. Royle on the mountains of Cashmere; plants have also been found on the Himalayas. — *Bot. Mag.*

ASCLEPIADÆÆ. — *Pentandria Monogynia*.

Ceropegia oculata. — Raised in the stove of the Royal Botanic Gardens, Kew, from seeds sent from Bombay. It is extremely handsome, and very curious in the structure of the flowers, which represent the head of a snake, with a green snout and black eye-like spots above the neck or narrow part of the tube. It is a ready growing plant, flourishing in a good heat, and it produces its flowers in September. — *Bot. Mag.*

ORCHIDÆÆ. — *Gynandria Monandria*.

Lelia superbiens. — One of the most beautiful and at the same time most difficult of all orchidaceous plants known. It is of South-American origin,

and has been imported very extensively, both by Mr. Hartweg, the zealous collector of the Horticultural Society, and by Mr. Skinner, from Guatemala. Till the present season, however, its flowers have only been known in this country through dried specimens. About the latter end of February last a fine specimen, grown by Mr. Brewster, gardener to Mrs. Wray, of Oakfield, near Cheltenham, produced its flowers for the first time in this country, and was exhibited at the rooms of the Horticultural Society. The flower scape or stem was about five feet in length, and bore, if we remember rightly, nine flowers, each of which was from five to six inches across, the sepals and petals of a bright rosy lilac; and the lip, which is large and thick, displayed near the apex the most lustrous crimson, shaded and marked towards the base with the richest orange and yellow, forming altogether a mixture of colours the most gorgeous; the only drawback to the general beauty of the plant being the very long, and consequently attenuated, appearance of the flower-stalk.

The situations in which the plants have been chiefly found is growing out of the crevices of rocks in the cooler districts of Guatemala, in places merely sheltered from the keenness of the northern winds; and probably the reason why flowers have not been produced sooner may be correctly assigned to the fact of the specimens first introduced having been subjected to a high temperature, with a close moist atmosphere: these conditions, being more favourable to luxuriant growth, would undoubtedly militate against the production of flowers, and it was not until the plants which have blossomed were treated in a contrary manner that they displayed any appearance of flower. — *Pax. Mag. Bot.*

SCROPHULARIACEÆ. — *Didynamia Angiospermia.*

Antirrhinum majus flore pleno. A fine double blood-coloured Snapdragon, raised accidentally from seeds, in the nursery of Messrs. Young, of Epsom. The flowers are large, and the colour intense. — *Pax. Mag. Bot.*

ASPHODELACEÆ. — *Triandria Monogynia.*

Leucocoryne alliacea. Some of the species of *Leucocoryne* are better known to cultivators as Brodiaceas, under which they were first arranged and described. From that genus, however, they have been separated by Dr. Lindley, on account of the difference in the insertion of the fertile and the texture of the sterile stamens; and the present name, derived from *leukos*, white, and *koryne*, a club, has been applied in allusion to the form and colour of the barren anthers. The present species is a bulbous perennial, with long linear pale green leaves; the flower stems appear to rise about a foot in height, and the tube of the flowers is greenish white, with a flat six-part limb, of a delicate lilac blue. It is a plant of easy culture, succeeding very well in a cool greenhouse, or even in the open ground, with a slight protection in severe weather. It is stated to have been found by Mr. M'Raie in Chili, in 1825, growing on the sides of the mountains, between St. Jago and Valparaiso, in places that a few days previously had been covered with snow. — *Pax. Mag. Bot.*

LEGUMINOSÆ. — *Decandria Monogynia.*

Gompholobium Hendersonii. This plant possesses a character widely differing from the well known *G. polymorphum*, for, instead of shoots remarkable for great length and tenuity, it is, on the contrary, a small dwarf bush, of slow growth and very stiff rigid habit; the leaflets are small and narrow, and always ternate, whilst those of *G. polymorphum* are sometimes three, and sometimes five. The flowers are scarcely so large, but are produced in equal abundance, and near the extremity of the shoots. It was sent from the Swan River in 1840, by Capt. Mangles. — *Pax. Mag. Bot.*



THE CAMELLIA.

WITH AN ENGRAVING OF *C. JAPONICA* VAR. *HALLEII*.

WE have on former occasions offered some remarks on the essential principles connected with the acclimatising these noble plants, with a view to their adoption as ornaments to the lawns, the shrubberies, and boundary walls ; since then we have had an opportunity of proving the subject by a practical test. In pursuance of this desirable object, last autumn we placed ten plants of Camellias in an open border at the foot of a wall, having a due south aspect, and we take the present opportunity of giving the result, so far as we have gone. It will however be better, first, to describe the treatment the plants have been subject to in their new position, in order to guide others who may be desirous of trying the thing, and to enable the reader to form a just estimate of the amount of success which has attended the experiment.

The border was prepared about a month previous to planting, by throwing together equal quantities of loam, leaf-mould, and turfy peat, forming altogether a stratum of about eighteen inches in depth, and twice that number in width ; the bottom being well drained with pieces of stone and old bricks, and after having well mixed the component soils, the bed was allowed three or four weeks to settle. The plants selected had hitherto been growing in pots, with the treatment usual to them in such circumstances : they were *Pomponia*, *Althæiflora*, *Insignis*, all of them being about two feet high, with a tolerable share of bloom-buds already set upon them. Soon after being turned out they were nailed to the wall, and in this state left, without further protection, until the following January, when, being aware of the injurious effects likely to ensue from premature excitement, the plants were covered with thin canvass or bunting, not with any intention to preserve them from frost or cold, for the material was *very* thin, *but to screen them from the sun* ; and here we may remark the southern aspect was not chosen as being favourable to the desired end, but was used for the purpose, simply because the wall must be covered, so that in fact it was rather a selection of the plants for the wall, than

of the wall for the plants, and this aspect eventually proved the only difficulty we had to contend with. During the succeeding two months the plants were several times subjected to severe frosts, with only a slight additional covering occasionally at night (which we have since thought unnecessary), still they retained their foliage and flower-buds, only two of the whole number falling off. The screen was continued before them until the flowers began to expand, which, from the constant shade afforded, was deferred till the middle of April, and then it was, the real and only difficulty presented itself. The sun having great power at that time, forced the flowers open quickly, and of course it was out of the question to continue the shading longer, and thus hide their beauties; but so soon as the full power of the solar heat fell on them, the flowers opened and were scorched up directly, scarcely one lasting in any thing like perfection more than a day: this was vexatious, and there appeared to be no remedy but in a change of aspect, for it was not possible to protect them from this scorching influence without obstructing the view of the flowers; but had they been in any other situation with respect to the sun, it is easily seen the direct rays would have been broken, and the intensity consequently dissipated and softened down to a vivifying warmth, and therefore, in all future operations of the kind, we shall prefer a situation that receives but little sunshine, indeed, we think the less the better; for without its effects, the necessity for protection will be done away with, except in instances of the opposite extreme in the temperature of the air. The plants are now making a healthy growth of a medium size.

Thus we add another instance of the assimilation of the period of growth to our seasons being necessary to the acclimating exotics: the great obstacle we had to surmount was the natural excitability of the plants, which, had they not been shaded in the early part of the season, would have induced them to open their buds full a month sooner, and as the new wood follows immediately after the flowers, in all probability it would have appeared and directly been cut off by frost. We are persuaded henceforth that this assimilation is the fundamental principle to be observed, and that the idea of imparting a more robust character to the plant by means of seed raised in this country, is erroneous, the object gained by this process being referred more correctly to the adaptation of the growth

to the season, or, in other words, beginning the growth at the beginning of the season.

Our illustration is another seedling raised by Mr. Halley, nurseryman of Blackheath. It is one that is sure to arrest the attention of all connoisseurs of this beautiful family: the correctness of its general outline, the great depth and substance of its petals, together with its brilliant colour, render it pre-eminently beautiful; in short, it will be a *necessary* flower in all collections.

ED.

ON KEEPING UP A SUCCESSION OF FLOWERS.

ONE of the chief objects of the flower-gardener is to keep up, as long as possible, a succession of flowers. A parterre without blossoms is like an orchard without fruit; every expedient is therefore had recourse to for the purpose of retarding the flowering of some kinds, and expediting that of spring flowers, which are chiefly bulbs and tubers, would be inclined to flower again in the autumn, if they were not checked by the great heat of the summer in those countries of which they are natives; or if, in imitation thereof, the careful florist did not remove them out of the bed in which they have already flowered. Thus by stopping their growth, while artificially treated in a colder and moister climate than their own, we delay their blooming till the season when their blossoms are most welcome to us. In this way many of these bulbous and tuberous-rooted plants may be made to flower at almost any season. But there are rules of propriety in the execution of these proceedings: a snowdrop would scarcely be regarded at midsummer, while surrounded by so many gaudier beauties, neither would the tulip, the bright queen of the garden, look well amid the sober tints of autumn. Nature intends that her beauties shall be dispersed over the whole circle of the year, and the florist assists in this arrangement; and, for this assistance, claims for himself the privilege that she shall be to a limited extent subservient to him in some instances, while he encroaches upon her seasonal laws. The British florist has a peculiar claim to this privilege, because he has taken under his care the floral beauties of every clime in both hemispheres, affording to each,

as near as can be, its natural temperature, its natural soil, and its natural rank and station amongst others. If, then, he should occasionally interfere with nature's laws, in bringing forth flowers out of season, he is not only excusable as their cultivator, but it is creditable to him as their guardian. These observations are particularly called forth at this time, while witnessing on all sides the fading of many flowers, which were only a day or two ago in the greatest beauty. To have them always in beauty would diminish rather than advance them in our estimation; but the recurrence of a flower when not expected, and especially if obtained without any derangement or mutilation of the plant operated upon, would be a delectable rarity, and really a desirable incident in a flower-garden. Every body knows that transplanting Rose trees late in the winter, or pruning them twice, or late in the spring, procures a late bloom, perhaps a month later than the ordinary time of flowering (we are speaking of the common Provence rose); though this treatment of Rose trees is less necessary now than it was before the introduction of so many French and Chinese species and varieties, some one or other of which is always in flower through the summer and autumn months. The Laburnum is a highly ornamental plant, from the middle of May to the end; but, if the flowering shoots be cut back, and the tree divested of its racemes of pods, a partial bloom will again come forth later in the summer. Indeed, the whole of the *Cytisus* genus may be made to flower twice in the summer, by careful cutting back after the first flowers fade. The Rose-acacia, and several others of its congeners, will flower a second time, if pruned back after the first; and so will the *Althæa frutex*, presenting its second flowers as late as October, when flowers of any kind are much wanted. Checking the growth of herbaceous border flowers, by repeatedly transplanting, or by divesting them of a few or the whole of their stems to retard the flowering, or allow it only to be developed gradually, is an old expedient; and, what with attention paid to this management of perennials and biennials, and to the many different times at which annual flowers may be sown and transplanted, a continued galaxy of blossoms may be maintained throughout the growing season.

ON THE APPLICATION OF MANURE IN A LIQUID FORM TO PLANTS IN POTS.

THE quantity of earth which the most firm and solid parts of trees afford by analysis is well known to be very small, and even the species of these earths have been proved by the younger Saussure to be dependent, to a great extent, upon the component parts of the soil in which the trees happen to have grown. A large extent and depth of soil seem, therefore, to be no further requisite to trees than to afford them a regular supply of water and a sufficient quantity of organisable matter; and the rapid growth of plants of every kind, when their roots are confined in a pot to a small quantity of mould, till it becomes exhausted, proves sufficiently the truth of this position. I have shown in a former communication, that a seedling plum-stock, growing in a small pot, attained the height of 9 ft. 7 in. in a single season; which is, I believe, a much greater height than any seedling tree of that species was ever seen to attain in the open soil. But the quantity of earth which a small pot contains soon becomes exhausted relatively to one kind of plant, though it may be still fertile relatively to others; and the size of the pot cannot be changed sufficiently often to remedy this loss of fertility; and, if it were ever so frequently changed, the mass of mould which each successive emission of roots would enclose must remain the same. Manure can therefore probably be most beneficially given in a purely liquid state; and the quantity which trees growing in pots have thus taken under my care, without any injury and with the greatest good effect, has so much exceeded every expectation I had formed, that I am induced to communicate the particulars and the result of my experience.

I for some years appropriated a forcing-house at Downton to the purposes of experiment solely upon fruit trees, which, as I had frequent occasion to change the subjects upon which I had to operate, were confined in pots. These were at first supplied with water in which about one tenth by measure of the dung of pigeons or domestic poultry had been infused, and the quantity of these substances (generally the latter) was increased from one tenth to a fourth. The water, after standing forty-

eight hours, acquired a colour considerably deeper than that of porter, and in this state was drawn off clear, and employed to feed trees of the vine, the mulberry, peach, and other plants. A second quantity of water was then applied, and afterwards used in the same manner; when the manure was changed, and the same process repeated. The vine and mulberry tree, being gross feeders, were not likely to be soon injured by this treatment, but I expected the peach tree, which is frequently injured by excess of manure in a solid state, to give early indications of being over-fed. Contrary, however, to my expectations, the peach tree maintained, at the end of two years, the most healthy and luxuriant appearance imaginable, and produced fruit in the last season in greater perfection than I had ever previously been able to obtain it. Some seedling plants had then acquired at eighteen months old (though the whole of their roots had been confined to half a square foot of mould) more than 11 ft. in height, with numerous branches, and afforded a most abundant and vigorous bloom, which set remarkably well; and those trees which had been most abundantly supplied with manure displayed the greatest degrees of health and luxuriance. A single orange tree was subjected to the same mode of treatment, and grew with equal comparative vigour; and appeared to be as much benefited by abundant food as even the vine and mulberry tree.

An opinion generally, though I think somewhat erroneously, prevails, that many plants, particularly the different species and varieties of heaths, require a very poor soil in pots: but these might, I conceive, with propriety be said to require a peculiar soil, for I have never seen the common species of this genus spring with so much luxuriance as from a deep bed of vegetable mould, which had been recently very thickly covered with the ashes of a preceding crop of heaths, and other plants that had been burned upon it; and I believe, if the branches and leaves of the common species of heath were placed to decompose in water, and such water were afterwards given to the tender exotic species, that these, how heavily soever the water may be loaded with organisable matter, would be found as little capable of being injured by abundant food as the vine or mulberry tree, though the species of food which would best suit those plants might prove to every species of heath destructive and poisonous. (*Knight's Physiological and Horticultural Papers.*)

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

ON THE CULTURE OF DUTCH BULBS.

By Mr. W. ANSELL.

(Continued from page 111.)

THE RANUNCULUS.—The species of *Ranunculus* are natives of the south of Europe and North America; and many of them are natives of Britain. The parent of the florist's flowers is extensively cultivated in the East, and also by the Dutch, together with its varieties, with the same success as the hyacinth and the tulip.

Planting the full-grown Tubers. They should be planted as early as convenient in October, selecting the medium-sized tubers, for they are better than large ones, the large ones being very apt to divide into offsets, and therefore seldom flower so strongly. When a number of offsets are required, large-sized tubers are consequently to be preferred.

The place selected for the culture of the *Ranunculus* should not be quite so dry and airy as recommended for the hyacinth and tulip. About the middle of September, the bed should be excavated to the depth of eighteen inches; then place in the bottom a stratum of well-rotten cow-dung, and mix it with the mould below, as before recommended; fill the bed to the ground level with good strong loam that has lain in heap for twelve months. Clay has been used with good success. When quite ready for planting, the bed should be marked out by means of a rod, with lines four or five inches asunder. Never plant the roots in holes or drills, as is often practised, but place them on the angles of the lines previously drawn, and with some sand above and below each; over the whole about two inches of soil should be laid.

Protection of the Beds. It will be requisite to cover the beds during severe frosts with some long litter, such as fern, or pease haum; but they should not be kept continually covered, when the weather is not severe, as it will be very injurious to them. As soon as the plants appear above ground, select a dry day, and press the earth firmly around the root of each plant; for if drought prevails, and the crowns of the tubers are exposed to the light, they will become materially injured. Moderate waterings will be required should the season prove dry, more particularly when the flowers are about expanding. When the aspect would render the bed exposed to the full influence of the sun through the day, it should be shaded during the mid-day, otherwise the leaves will become yellow; and in this case a sufficient degree of nourishment would not be supplied to the tubers. Shading will be still more necessary when the flowers are expanding, or expanded, for the bright sun will cause the colours to run or fade; but in all cases a free current of air must be admitted to the beds, not allowing the covering to come nearer the ground than eighteen inches, or two feet, and leaving both ends open.

Taking up the Tubers. As soon as the stems and leaves die down, and before they disappear, the tubers should be taken up, picked clean, and carefully dried. When quite dry, they should be put into boxes or drawers, perforated with holes through the sides and bottom, to admit of air passing through; and placed in a dry airy room, but not exposed to the sun. They may remain here until the season for replanting them.

THE ANEMONE. — The Anemone, or wind-flower, is a native of the South of Europe, Germany, and the Levant; several species inhabit the British woods. There are two species of Anemone cultivated as florist's flowers, besides several other species as border flowers; the former are known as the poppy, or garland wind-flower (*A. coronaria*) from the Levant; and the garden wind-flower (*A. hortensis*) from Italy. They require much the same treatment as the ranunculus, but are rather more hardy, though both are from warmer countries than England.

The best tubers for insuring a good bloom, are those which are from three to five years old; for as they become older, they are apt to grow large and hollow, in which case they bloom weakly; and though they may have been very double in

previous years, they at length produce fewer petals, and finally become single. When the tubers thus become hollow, it would be the best way to cut them in pieces, and treat them as offsets.

Taking up the Tubers. Anemones are more succulent than ranunculuses, and continue longer in a growing state after the flowers fade. If the weather should happen to prove wet about that time, they will continue growing too long; and when thus exposed to the wet, they are apt to start afresh, which tends greatly to weaken the tubers: it will likewise weaken them, if taken up before they are quite ripe. To avoid these evils, the beds should be covered with mats or canvass, to shelter them *only* from the rains; in this way the tubers will become regularly and gradually matured, and in the space of a month or five weeks, the leaves will become brown and dry. The tubers should then be taken up, and the old leaves and stems removed close to the crown. Place them in some shady place, where they will dry gradually, and when quite dry, clean them from any mould that may adhere to them, and put them in boxes similar to those already recommended for the ranunculus.

THE NARCISSUS AND JONQUIL.—Many of these are natives of Spain, Portugal, Italy, and the South of Europe; though several others are British species. A dry situation should be selected for the cultivation of these bulbs, as some of them are natives of rocky and stony situations; while some others that are more tender, as the *Polyanthus Narcissus*, the most delicate of all the bulbs, will require protecting with a covering of leaves or fern, during severe weather. The narcissus bulbs should not be removed above once in four or five years, as they always flower weaker after being removed; and when removed, the less time they remain out of the ground the better. As soon as the bulbs are taken up, which should be when they are ripe, the bed should be excavated to the depth of two feet; then fill it in about one foot above the ground level, with sandy loam, and a little well-rotten cow-dung. Mark the rows in the bed about six inches asunder; plant the bulbs directly, about eight or nine inches deep, with a trowel, placing three bulbs to each hole. The Jonquil (*Narcissus Jonquilla*) ought to be moved every year; for if left standing, the bulbs grow longer and deeper, and do not flower so well.

THE CROCUS, SNOWDROP, AND DOG'S-TOOTH VIOLET.—The various sorts of Crocus, Snowdrop, and Dog's-tooth Violet, some of them natives of England, are not very difficult to cultivate; but they are particularly pleasing in their effect, as they bloom in company with each other.

The corms of the Crocus must be planted to the depth of two or three inches, either in beds by themselves, about four inches asunder, or patches of five or six in each. They look extremely well to form margins to clumps and borders, placing them in a varied manner with respect to the sorts. Great injury is frequently done to the corms by trimming off the green leaves, for the sake of neatness, as soon as they have done blooming. That practice is quite erroneous, as the green leaves tend to nourish and strengthen the corms, and if taken off the future blooms will be materially injured.

The Crocus corms should be left in the ground for three or four years undisturbed, with the exception of forking in a little fresh compost every year, as they will not bear to be kept out of the ground, the same as tulips and other bulbs. If the corms are left out of the ground to push, they will often perish, or, at best, flower weakly. They should be taken up as soon as the leaves decay, separating the large ones from the small, and plant them again as soon as the places are prepared for their reception. Any light fresh soil will do for the crocus, with a little well-rotten dung.

The same treatment will be applicable for the Snowdrop (*Galanthus nivalis*) and Dog's-tooth Violet (*Erythronium Dens Canis*).

ON THE APPLICATION OF CHARCOAL IN THE CULTIVATION OF PLANTS.

By Mr. T. MOORE.

IN estimating the uses and application of Charcoal in horticultural matters, we must look to the influence it exerts in two distinct points of view; viz., chemically and mechanically. In the first of these, that is, chemically, its action would appear to consist in applying food directly to the plants which are under

its influence, by regulating the combination of substances which are capable of supplying nutriment ; and in the other case, that is, mechanically, its influence seems to consist in regulating the conditions and bearing of certain matters, which are liable to become ill adapted to the purpose for which they are designed. But wherever charcoal is applied to the soil in which plants are cultivated, these distinct and separate influences go on together and simultaneously, and therefore we may reasonably infer that its beneficial character may be in part ascribed to both.

The chemical composition of charcoal would seem to suggest, that it may be the means of supplying plants directly with a portion of matter which they can appropriate to their nutrition. It consists of impure carbon (the diamond being composed of carbon in a pure state), and carbon entering into combination with a portion of oxygen, is then capable of ministering to the growth of plants, though, whilst in a free and uncombined form, they cannot absorb it. When it is combined with a portion of oxygen, which it derives from the atmosphere, it becomes carbonic acid gas, and in this state it is absorbed and decomposed by the leaves of plants, the oxygen being again liberated, and returned to the atmosphere, thus rendering it more capable of supporting animal life, whilst the carbon is fixed, and serves to increase the vegetable fabric. So say the chemists, and we gardeners, for the present at least, must be content to follow them, although, as the science of chemistry, without doubt, is regulated by simple and unvarying natural laws, there is no reason why an attentive study of the science should not enable gardeners to speak on these matters from personal conviction, and not, as at present, on the authority of others. But the chemists tell us more ; they tell us, that except under the influence of a considerable degree of heat, charcoal is a substance which decomposes so slowly, that, under ordinary circumstances of vicissitude and exposure, it is almost imperishable ; we must not, therefore, overrate its chemical influence ; but as these gaseous bodies do exert a very powerful influence, when they exist even in such infinitely small proportions as to be altogether unappreciable to the senses, we may believe that even the small degree of chemical action which can be supposed to take place between charcoal and the elements of the atmosphere by which it is surrounded, is directly beneficial to plants.

The mechanical action of charcoal is two-fold. In common with all similar substances or materials, its admixture with the soil renders the latter very perfectly adapted to the free passage of moisture through it, and therefore its use tends to prevent stagnation of moisture in the soil; besides this, it has rather a strong affinity for moisture, and thus it attracts and imbibes a considerable proportion during its passage through the soil, and becomes a perpetual reservoir to the roots of the plants. It parts with this moisture slowly, in proportion as the capillary action of the fibrous roots abstract it, and thus it serves to regulate and equalise the supply of fluid which is available to the roots. It has been hinted, that this water (a compound of hydrogen and oxygen) becomes carbonated whilst held by the attractive force of the charcoal, and if so, it must be specially beneficial to plants, since it would directly supply them with a portion of carbon.

As an adaptation of its mechanical action, I conceive it might be advantageously employed in the case of valuable plants, to counteract the injuries which frequently result from the interior of the ball of earth becoming dry, which, when once the case, it becomes almost impossible again to moisten it by any rational means. It is my belief that a greater number of valuable plants are lost from this cause than from any other. The manner in which I think charcoal could be made to remedy this evil, is by introducing a few pieces perpendicularly, and extending quite through the ball of earth, at each successive shifting, and keeping them as near the centre as possible; these could then be kept wet by any simple capillary contrivance, and might effectually be made to keep the centre of the soil in a duly and regularly moistened state. It would also extend the influence of the atmosphere among the roots, as the channels which would serve for the passage of water, would, when not so employed, be capable of transmitting air.

Practically I may mention, that I have observed in many cases the beneficial influence of charred blocks on the appearance of the roots of orchidaceous plants which have been attached to them, which is apparent in the more pellucid aspect assumed by the growing points.

April 25. 1844.

ON TAKING IMPRESSIONS OF PLANTS.

By Mr. E. KEENAN.

(Communicated by Mr. Billington.)

THE advantage of being able to take accurate impressions of plants without much labour, need not be pointed out to those who can appreciate what is useful. It is not brought forward as a substitution for dried specimens, where these can be obtained and attended to; but as being less cumbersome it deserves notice, as a means of refreshing the memory, in very many instances, in a manner equally satisfactory as when specimens are employed. It has, further than this, no claim to novelty, but simply to usefulness.

The materials required are few, and these not expensive. One pennyworth of lampblack and one pennyworth of sweet oil, are all that will be required besides the paper. A large sheet of paper should be provided, and this should be prepared by rubbing it evenly all over with a piece of flannel moistened with the oil; this must be done thoroughly, and when the paper is well moistened, but not in a wet state with the oil; a small quantity of lampblack should be laid evenly over it, also using flannel for this part of the operation. If this preparation can be made a day before using the paper, it will be so much the better. The next process requires great care:—having the prepared sheet in readiness, place on it evenly and flatly the plant, flower, or leaf, of which an impression is required; then place over this a dry sheet of paper, and with a handkerchief or cloth press firmly over every part, that it may equally and regularly receive the black preparation. The paper intended to receive the impression should now be in readiness, and the specimen must be carefully removed and placed on it, and great care must be taken that its position is not changed; this, too, must be again evenly and firmly pressed as before, and the impression will be complete and must be laid carefully aside to become dry. A specimen or two can be tried on a spare sheet, in order to ascertain, whether the blackened sheet is in a proper state of preparation, before it is attempted to take a very careful impression. This is particularly valuable in preserving sketches of the leaves of rare and valuable plants.

VISITS TO REMARKABLE PLACES.

TATTON PARK, Cheshire, the seat of W. Egerton, Esq. — This place is noted for its fine lawns and noble scenery of the distant hills of Derbyshire and Staffordshire: it is one of the most extensive and best kept places we have had the pleasure of seeing for a length of time. On entering the gardens, we were equally surprised at their magnitude, and the neatness and good order which prevailed, the lawns verdant and closely mown, though extending over a surface of above 50 acres, the walks clean and smooth, and the flower-beds wearing a dressed appearance, suitable for even June, though our visit occurred in the chilly month of March. A large architectural conservatory occurs near the mansion, which on the outside presents but a gloomy appearance, from the heavy stone columns which support the roof; the interior, however, was as gay with flowers as could be desired: — fine plants of *Rhododendron arboreum*, displaying their trusses of rich crimson flowers, in strong contrast to the golden fruit of the Orange, Citron, and Lemon; several excellent specimens of *Banksias* overtopped the more humble, though not less interesting, *Camellias*, *Fuchsias*, *Cinerarias*, &c. which ornamented the front of the borders, while the pillars and roof were completely clothed, from the floor upwards, with various members of the genus *Acacia*. The very ingenious mode of labelling the plants in this house deserves particular mention. The labels are made of zinc, in the form of a butterfly, and, by varying the colours on the upper and lower wings, a knowledge is conveyed of the geographical distribution of the plant, while certain dots and marks on the one or the other express the botanical arrangement. They have a very pretty and neat appearance: to explain the matter fully would occupy more space than we can at present command, but as we think it worth adoption for established plants in similar situations, we shall probably revert to it next month.

The Orchidaceous house is entirely hidden from the surrounding walks by a fine piece of rockwork; stone being plentiful in this part of the country, the landscape-gardener has an opportunity of using it to advantage in these masses. The plants in this house are grown in a rather low temperature, and

a drier atmosphere than is usual ; however, they were looking very well, though a little more moisture would perhaps induce a stronger growth. The collection contains good plants of *Cattleya Mossiæ*, *labiata*, *intermedia* ; *Maxillaria fuscata*, *uncata* ; *Lycaste macrophylla*, *Deppei*, *tetragona* ; *Gongora fulva*, *maculata*, and varieties ; *Dicrypta graminifolia* ; *Broughtonia sanguinea* ; *Epidendrum variegatum*, *Parkinsoni*, *glumaceum*, *aromaticum* ; *Notylia punctata* ; *Cirrhæa Warreana*, *fusco-lutea* ; *Sobralia sessilis* ; *Oncidium longifolium*, *Lanceanum*, *Harrisonianum*, *papilio* ; *Peristeria cerina*, *guttata* ; *Sophronitis pterocarpa* ; *Brassia Wrayii*, *Lanceana* ; *Stanhopea tigrina*, *oculata*, and *saccata*.

The surrounding pleasure-grounds are disposed in the irregular or picturesque style, and contain, beside the flower-garden already spoken of, a labyrinth, American garden, in which are some flourishing specimens, and a large piece of ground, recently planted for a Pinetum ; from this, over a neat rustic bridge, the path leads, by a very chastely designed and beautifully situated temple, towards the kitchen garden. Here the same order and regularity is observable ; the forcing of fruit and vegetables is carried on extensively and satisfactorily ; the ranges of Pineries, Vineries, and Peach-houses looked all that could be desired. In one house, a vinery, we saw the finest crop of strawberries it has been our fortune to witness this season ; in another early house grapes in pots were "colouring." Figs, cherries, beans, cucumbers, melons, all appeared to luxuriate in the treatment they were receiving ; while the out-of-doors department reflected equal credit on the kitchen gardener, Mr. Derbyshire. To him and Mr. Egerly, the flower gardener, we were much indebted, for their courteous attention, in pointing out the many and various objects of interest which called attention on every side.

Ed.

CALENDAR FOR JULY.

PLANT STOVE. All should be gaiety and profusion here. The majority of the plants will be in rapid growth, which may yet be encouraged by maintaining a well-moistened atmosphere about them, and re-potting such as require it. By no means, however, let them become crowded whilst in this profuse state

of growth, or the consequence will be "long-legged" and lanky plants; let them rather have room enough on all sides to receive a full degree of light, that their growth may be well ripened. Some of the early growing plants will now be mature, and should be gradually brought to a state of repose. Some of the Orchidaceæ, too, will have completed their first growth; this may be ripened off quickly, and a second growth will be secured later in the season; this is useful when it is desirable to increase the size of the plants rather than the development of flowers.

GREENHOUSE. Greenhouse hard-wooded plants may both be *kept* and *grown* better in cool pits during summer than in any other situation. They should be shaded from intense sun heat, and a circulation of air through the bottom of the pits *about the pots* should be secured. The free growing and soft-wooded plants may be grown wherever there is plenty of air and light, and the auxiliary of shading from the scorching rays of the sun. It is scarcely material at this season whether these conditions are supplied to them out of doors, or in frames or pits, or houses with the lights partially or wholly removed. The greenhouse and conservatory should be kept gay by a succession of plants in bloom, and these ought now to be frequently changed and renewed.

FLOWER-GARDEN. Propagate extensively for next year's supply. Sow the seeds of biennial and perennial flowering plants. Propagate double Rockets, double Sweet-Williams, Mule Pinks, Pansies, and such like plants, by cuttings and slips. Increase Pinks by piping, and Carnation and Picotees by layering. Carefully preserve the dried roots of bulbous plants until the planting season returns. In the modern flower-garden plant out duplicates to fill vacancies; peg down diffuse-growing, and tie up erect-growing plants; water liberally and frequently, examine and remove dead leaves and stems. "Let every thing be done decently, and in order." The amateur would derive much advantage from making a careful note of the exact heights and colours of the summer-flowering plants he cultivates, as well as of those which he may intend to add to his selection: this information will be found to be particularly useful at planting time next year, and there is some satisfaction in turning one's own observation to account.



LOASA LUCIDA.



THE
FLORIST'S JOURNAL.

AUGUST, 1844.

THE GENUS LOASA.

WITH AN ENGRAVING OF *L. LUCIDA*.

THE derivation of the singular name bestowed on this genus by Adanson has never been explained, nor can we now attempt it, unless by supposing it to be an alteration of some native name. It is for the most part of South American origin, occupying in that hemisphere the station of our bryony and wild nettles, several of the species possessing in even a stronger degree the stinging properties of the latter; the flowers of the whole genus are extremely curious, and many of the later importations have large showy blossoms. The first introduction of *Loasa* was in 1820, when *L. incana* was brought from Peru, but having little to recommend it to general notice has since fallen out of cultivation. This was followed by some others in 1822-5-7 and 1830, that, like the first, were grown only for a year or two, and thrown aside to make room for newer and better kinds. One species only has preserved its popularity; this is *L. palmata*, or, as it is now called, *Blumenbachia insignis*, which is still regarded as a desirable annual.

L. lateritia, from Tucuman, in 1836, directed cultivators to a proper estimate of the capabilities of the genus, and since that time the climbing kinds especially have received a fair share of attention. Those usually found in collections of the present day are *L. Pentlandica*, a pretty bright red and yellow free-flowering species, but a most troublesome one to train or keep in order, on account of its abominable sharp-stinging leaves, which, on

the least touch, puncture the skin, and leave an irritation which lasts for some hours.

Preferable to this is *L. Herbertii*, an hybrid, we believe, having much larger flowers, of a deep orange-red; it is of stronger habit, requiring to be trained upwards, and will cover a trellis of considerable size; this is less venomous, and therefore may be arranged with less difficulty.

L. aurantiaca is by some affirmed to be no other than *L. lateritia*: if this be correct, there is certainly another unnamed species, or at least there must be a variety of it, for we have grown the true *lateritia* and another under the name of *aurantiaca*, and found them very different, the latter being of more robust habit, and producing flowers of a more golden hue; but we know nothing of its history, and are inclined to believe it a garden variety.

L. lucida, our present illustration, is a native of Chili, where it is found, but sparingly, on the coast of Coquimbo; it was imported by Mr. James Carter, seedsman, of High Holborn, to whom we are indebted for the above information respecting it. The plant from which our drawing was taken was raised in the nursery of Messrs. Henderson, Pine Apple Place, in the spring of the present season, and where it is still producing its lovely and curious blossoms. The general character of the genus is what is called half-hardy annuals; and though from its scarcity *L. lucida* is now kept in a greenhouse, we suppose it will on trial be found sufficiently robust to bear exposure in the open garden through the summer months; but even should it prove necessary to continue the protection of a house, it must always be desirable, were it only for pot-culture; its free habit of blooming, and glossy bright green foliage, will ever render it a favourite in all collections.

With respect to cultivation, the entire number of species may be similarly treated; the seed should be sown in February in shallow pans, and placed in a moderate hot-bed frame, and kept moist until the plants have made four or five leaves, when they require to be potted singly into small pots, and afterwards removed into other larger ones as they advance in size, continuing them in the frame until the weather will allow their removal to the open borders: if intended to cover an ornamental trellis, or the bottoms of the pillars of the conservatory, it is better to place them in the situation they are to bloom

in at the second shifting, as they are then more rapid in progress, the check consequent on frequent re-potting being avoided. The kind of soil they delight in is fibrous loam, enriched and made porous by the addition of a portion of leaf-mould or well-rotted manure. To secure a supply of seed, attention must be paid to the ripening of the seed-vessel, which is curiously twisted in a spiral manner, and as soon as it is ripe unfolds itself, and the seed is scattered.

EDITOR.

REMARKS ON THE CULTIVATION AND PROPAGATION OF THE GENUS ACHIMENES.

SIR,—I feel that I need not offer any apology for troubling you with a few remarks on the lovely tribe of plants above named: their great beauty, and the long time they may be made to retain that beauty, their easy cultivation, and the prospect they offer to the hybridiser, all combine to render them the greatest acquisition our gardens have received for a long period, as they are alike suitable for the greenhouse, the drawing-room, or the cottage window. I think every one who has witnessed the splendid specimens at the recent exhibitions near the metropolis will admit the truth of these remarks.

Achimenes coccinea, syn. *Cyrilla pulchella*, *Trevirana coccinea*, from being an old inhabitant of our stoves, claims first attention. It is a native of Jamaica, and was introduced in 1778. To cultivate this successfully; select, about the latter end of February, as many of the largest of its scaly bulbs as may be required, and put them thinly in a flower-pan, and place the pan in a cucumber-bed, or any place with a warm moist atmosphere, where they will soon begin to grow. When they have grown nearly a quarter of an inch, they may be potted, in the following manner:—Place half a dozen of them round a small 48-sized pot, the soil for which should be a mixture of loam, leaf-mould and peat in equal proportions, with a little sand, and plenty of drainage: return them to the place they were taken from until they are well established, when they should be removed to a cooler pit or frame, giving more air and water as they advance in growth. When they have well filled the pots with roots, they may be shifted into 24's, with the same kind of soil, in which

they may be left to bloom : after that is over, they may be stored away in any dry place, secure from frost, until again wanted.

Achimenes longiflora, introduced by the Horticultural Society of London from Guatemala, in 1841, has been figured and described, and its cultivation recommended, in this Journal, and therefore need not be repeated here ; but, in order to have a good succession of bloom, some tubers should be started, to grow as early as the beginning of February, and some as late as the end of April, by which means they may be had in bloom from June to November ; and I would here guard the amateur (for whom this is chiefly intended) against a bad variety that is in cultivation. If the foliage is of a light green on the under side, that variety is not worth growing, from its being so shy to flower ; the best kind having always a red tinge on the lower side of the leaf.

Achimenes rosea. — This is a very pretty species sent out by the Horticultural Society, about the same time as the preceding one. The treatment recommended for *A. coccinea* will apply to this, except that, like all the other recently imported species, it appears very impatient of much heat.

Achimenes pedunculata. — This species was introduced from Guatemala in 1840. Although less beautiful than some other of the species, it is still well deserving cultivation. The tubers of this should be at once placed in the soil, it being a stronger-growing kind than the preceding, and must be frequently stopped in its early growth, or it will become tall and unsightly : subsequent treatment the same as recommended for the others.

Achimenes grandiflora. — This, the most handsome of the whole genus, reached this country, from Ghent, in 1842 ; it is a native of Mexico ; culture the same as that recommended for *A. coccinea*. It, like all the others, requires a slight shading to preserve its blossoms.

Achimenes multiflora. — This species is a native of Brazil : it was introduced in 1842, and is still scarce. It is somewhat like *Sinningia guttata*, with the edge of the corolla prettily fringed : cultivation same as above.

Achimenes hirsuta. — This species is a native of Guatemala, and arrived in this country amongst some orchidæ that were purchased by Messrs. Henderson, of Pine Apple Place. It has the robust habit of *pedunculata* ; its flowers are double the size

of that species, but not quite so handsome: its cultivation may be considered the same.

Achimenes picta. — This beautiful species has been recently sent out by the Horticultural Society. The flowers of it are striped like *Gesneria zebrina*. It is, I believe, a native of Guatemala: cultivation the same as that recommended for *A. coccinea*. They may be all readily multiplied by division of the root. The following may also be practised with the scarce kinds:— Get a leaf and its stalk; place it in some sand in a pot, and press the leaf flat down on the sand; then make two or three incisions clean through the mid-rib, and put a peg through each hole, to make the leaf adhere closely to the sand; over that put a cutting glass closely; plunge it in some bottom heat, and shade it. I have obtained plants this summer in three weeks by this method.

If this is worth a place in your valuable Journal, perhaps it may be useful to some of your readers.

E. A. H.

LIST OF ORCHIDÆ.

(Continued from page 128.)

204. *Lælia furfuracea*. This is another beautiful species of the pseudo-bulbous class; its bulbs are about an inch and a half long, tapering a little from the base towards the summit; the leaves are produced singly, about six inches long, and better than one inch broad, of a fleshy nature. This, like most of the others, will succeed either in a pot or on a block of wood, with a little sphagnum tied round it to preserve the moisture; if grown on the latter principle it requires abundance of water while growing; the temperature should never exceed 65°. — *Native of Mexico*.

205. *Lælia autumnalis*. Another fine species, well deserving the attention of all interested in the cultivation of Orchidæ; its pseudo-bulbs are nearly two inches long, a little furrowed; leaves single, nearly seven inches long, and one inch broad; its flowers are produced on a spike rising from the summit of the bulbs; they are beautifully tinged with rosy crimson; the plant requires the same treatment and temperature as the others. — *Native of Bolanos*.

206. *Lælia grandiflora*. A pretty species with pseudo-bulbs two inches long, of a pale green; leaves seven inches long, rather crisp; this is also well worth growing, and requires the same treatment and temperature. — *I believe a native of Mexico*.

207. *Lælia flava*. This plant is but a mere variety of *L. cinnabarina*; in its growth it is not so strong; succeeds with the treatment recommended for the others. This genus at present consists of fourteen species, all well worthy of cultivation, and of easy management, provided they are grown in a low temperature; if placed on blocks, a liberal supply of water must be given while growing, but during the resting season they scarcely require any, in fact none at all, so long as their bulbs do not shrivel; still this extreme must be avoided, or their flowers will not be so fine.

208. *Lissochilus speciosus*. Plant pseudo-bulbous; bulbs two inches long, and nearly the same broad; leaves mostly in pairs, one foot long, and half an inch broad; flowers produced on a spike, of a pale yellow colour; this species requires growing in a pot with a mixture of sphagnum and turfy loam, in equal parts, with the bulbs half buried in the compost; they do not require much water, but a temperature of 65° to 70°. — *Native of the Cape of Good Hope*.

209. *Lissochilus parviflorus*. This plant differs a little from the former in the manner of growing, but more so in the flowers; it is of no great beauty, but of a singular appearance; it requires the same treatment and temperature. — *Native of the Cape*.

210. *Lissochilus streptopetalus*. Plant pseudo-bulbous; bulbs small; leaves rather long and narrow; its flowers are curious on account of the petals assuming a tortuous form, from which circumstance its specific name is derived. This genus consists of five species, which are what is generally termed Terrestrial Orchidaceæ; these in their native country are always found growing on the ground in shady places, and consequently require, when under artificial treatment, a similar situation, and should be planted in a compost of chopped sphagnum and turfy loam in equal parts; if the former cannot be obtained in a rotten state leaves will do; they require but little water; if the soil is kept just moist during their growth it is fully sufficient.

211. *Masdevallia infracta*. Plant evergreen, and destitute of bulbs, much similar to the genus *Pleurothallis* in growth and general appearance; the leaves are fleshy, and of a dark shining green, about five inches long; flower-spike eight inches long, bearing only one or two flowers at a time, which are small but extremely curious; instead of the usual sepals and petals it is composed of a calyx with three horns; the labellum is very small, placed in the inside; the whole of the flower is greenish-white, and the flower-spike will last for years. It requires pot-culture in a mixture of turfy peat and a little sphagnum, with a slight elevation above the rim of the pot, so as to insure a good drainage, with a temperature of 70°. — *Native of the Organ Mountain*.

212. *Masdevallia fenestrata*. — This plant is similar to the preceding in its growth and flowers, and consequently will not require any description; the treatment and temperature recommended for the other will do for this. These two are all that are at present known of this genus. — *Native of Brazil*.

213. *Megaclinium falcatum*. Plant pseudo-bulbous; bulbs three inches long; leaves in pairs, nearly six inches long; flower-spike rising from the base of the bulb nine inches long, the upper part being flat, and shaped like a sickle, with a row of flowers on each side, of a pale yellow. The plant requires pot-cultivation in a mixture of turfy peat and sphagnum, with plenty of water while growing, and a temperature of 70°. — *Native of Sierra Leone*.

214. *Megaclinium falcatum majus*. This plant has every appearance of *M. falcatum*, but is a much stronger-growing one. The same treatment and temperature will do also for this. — *Native of Sierra Leone*.

215. *Megaclinium maximum*. This species is the largest of the whole genus; its habit is much similar to the others, but the flowers are not so interesting; they are very small, produced on a long sword-shaped rachis, of a greenish-yellow colour spotted with red. This genus is at present but small; the whole are of easy culture, provided there is a clear drainage under the plants, which is one of the chief causes of good growth in these and all others of this beautiful and singular class of plants; when this point is attended to they will bear even an excessive supply of water while growing.

J. HENSHALL.

(To be continued.)

BOTANICAL LABELS.

THE high and positive interest that a plant of which we know the name, history, and general properties or uses, possesses over another that we have little or no acquaintance with, even though they be equally beautiful, must have been felt by every reflective mind, and acknowledged (though perhaps unconsciously) by the greater degree of pleasure with which the former is observed or spoken of: this feeling is so universal and so strong, that to it alone may be ascribed the true foundation of the science of botany, and, as a means to the assistance and more easy enjoyment of that science, the practice of placing labels inscribed with, at least, the name to rare and favourite plants. We have on some previous occasion expressed a desire to increase this interest, by extending the practice to other and more common subjects, which are, unfortunately and improperly, too often considered unworthy the distinction — the fact being overlooked that it is thus we render them of consequence, and impart the very interest required: with the same desire we resume the subject, to describe a peculiarly neat and ingenious label we observed in use at Tatton Park, and which we mentioned in our notice of that place last month. A great object in the construction of botanical labels is to convey all the information necessary to a thorough knowledge of the plant with as much brevity as possible. The usual mode of *writing* the name, habitat, date of introduction, botanical arrangement, &c., though it may at first seem the easier mode, yet to contain it the label must be so large as to be unsightly, which we believe to have been the great objection to their general application. Now, with those we are about to describe the major part of this information is conveyed by the disposition of colours and certain dots or lines, which do not interfere with the portion that it may be necessary to write on, and which, once learned, is as easy to understand as even typography.

The form of these labels is (as we mentioned last month) the outline of a butterfly, with its wings expanded as in the act of flying; and from the base of the two lower ones the strig or tail is fastened, which is thrust into the earth to support and retain the label in its place, in the same manner as with those

usually employed. They may be made of zinc, or other material of a similar nature, at a very trifling cost. After receiving two coats of white paint, the colour is laid on which is to represent the geographical distribution of the plant. For this purpose four colours are used, descriptive of the four quarters of the globe — yellow representing Europe; red, Asia; blue, Africa; and green, America: either of these colours being spread over the upper, the lower, or the whole of the four wings, will denote the northern, southern, or central part of either quarter: thus, a plant from the north of Europe would require the label to be painted yellow on the upper wings; another from central Asia should have the whole four coloured red; while one from South America would require to have the lower wings green. We might multiply examples, but we think these sufficient. The size and stations of the four wings are easily determined by their outline, and they are divided through the centre of the label by the pale brown body of the insect. Thus the native country of the plant is seen at a glance; and, the name being written across the upper, and the date of introduction on the lower wings, the label is complete for common purposes; but they go still further, expressing by dots, varied over the several parts of the label, the botanical arrangement; in those of which we speak the Linnæan system is followed. Here we think an improvement may be effected, by adapting them to the natural system, which may be done without much trouble; though any arbitrary method of expressing so many divisions and subdivisions will naturally present difficulties of some magnitude, yet with a proper key they may be surmounted. We have not yet commenced this adaptation, and therefore proceed to explain them as they are.

The system of Linnæus, it is well known, consists of twenty-four classes, with their respective orders; the first thirteen of these, and the corresponding orders, are made known on the labels by spots only; for instance, the first class, *Monandria*, is shown by one spot on the upper part of the body, and its first order *Monogynia* by one on the lower wings; the second order of the same class having two spots, one on each lower wing. The second class, *Diandria*, is known by two spots, one on each upper wing; and its first, second, or third orders by as many spots on the lower wings, the classes being expressed on the upper part of the label, by spots corresponding in number to

their station in the system, and the orders, in like manner, on the lower part.

The twelfth and thirteenth classes differing only as regards the situation of the stamens, and not in their number, so here they differ only as to disposition; the twelfth, *Icosandria*, being shown by a number of small dots on the *exterior* and lower corner of each upper wing, and the thirteenth, *Polyandria*, by similar dots on the *interior* and lower corners of the same.

The following five classes are distinguished by bars or bands of black running on the margins of the upper wings. Class 14. *Didynamia* has one band on the exterior margin of each upper wing: it has two orders, the first, *Gymnospermia*, is easily known by the absence of any marks on the lower wings; the second, *Angiospermia*, has a continuation of the band which denotes the class round the lower wings also. Class 15. has two bands on the margin of each upper wing, and its orders are marked by the same absence or presence of bands on the lower ones. Class 16. *Monadelphia* is known by a single band, and one spot on the upper portion of the body. Its orders, seven in number, are distinguished by the number of spots on the lower wings, in the same manner as for the first eleven classes. Class 17. *Diadelphia* is represented by a band and one spot on each upper wing, and its orders in the manner of *Monadelphia*. Class 18. *Polyadelphia*, in addition to the band on the exterior of the upper wings, has a number of small dots disposed as explained for the twelfth and thirteenth classes: its orders are marked in the same manner as the last.

Class 19. *Syngenesia* is known by a small ring on each upper wing. It has five orders: — 1st, *Æqualis*, has no marks; 2d, *Superflua*, known by a ring on each lower wing; 3d, *Frustranea*, by two rings, with a central spot in each; 4th, *Necessaria*, has two double rings with central spots; 5th, *Segregata*, has also double rings, and a spot on the middle of the lower part of the body.

Class 20. *Gynandria* is known by a ring with a central spot on each upper wing; it has three orders, known as in Triandria.

Class 21. *Monœcia* is distinguished by a double ring on each upper wing, and its orders, eight in number, the same as the last.

Class 22. *Diaœcia*, represented by a double ring and central

spots; and the orders, of which there are fourteen, by the number of spots on the lower wings.

Class 23. *Polygamia* is marked by two rings, one on each wing, with several small dots in them; it has two orders: 1st, Monœcia, known by two double rings; 2nd, Diœcia, is marked by two double rings, and a central spot in each.

Class 24. *Cryptogamia* is distinguished by having no marks on the upper wings; it is now considered to consist of nine orders, though in the original Linnæan arrangement eleven are mentioned. They are known on the labels by the number of spots on the lower wings in the manner of Classes 1 to 11.

We have placed the whole of the classes and orders in the following tabular form for more easy reference, and here we must explain: those orders which occur from the sixteenth to the twenty-third class, having the names of previous classes, are marked in the same manner, only they are then placed on the lower instead of the upper wings; thus Diandria, the second class, is marked by two spots on the *upper* wings; but it occurs as the second order of the class Monœcia, and is then marked by two spots on the *lower* wings; and again, there are three orders which are distinguished by having no marks; yet no confusion need be apprehended therefrom, because they never occur in the same class, and can always be determined by the distinguishing marks of the class to which they belong:—

Class.	Marked on the upper wings.	Order.	Marked on the lower wings.
Monandria	1 spot.	Monogynia	1 spot.
Diandria	2 —	Digynia	2 —
Triandria	3 —	Trigynia	3 —
Tetrandria	4 —	Tetragynia	4 —
Pentandria	5 —	Pentagynia	5 —
Hexandria	6 —	Hexagynia	6 —
Heptandria	7 —	Heptagynia	7 —
Octandria	8 —	Decagynia	10 —
Enneandria	9 —	Dodecagynia	12 —
Decandria	10 —	Di-pentagynia	4 —, and three on the lower part of the body.
Dodecandria	11 —		
Icosandria	many small ones on the lower corners of the margin.	Polygynia	many small ones on the upper corners next the body.
Polyandria	many small ones next the body.	Gymnospermia	none.
Didynamia	one marginal band on each wing.	Angiospermia	marginal band.
Tetradynamia	two marginal bands.	Siliculosa	none.
Monadelphia	one marginal band and one spot on the body.	Siliquosa	marginal band.
		Æqualis	nonc.
		Superflua	two rings.

Class.	Marked on the upper wings.	Order.	Marked on the lower wings.
Diadelphia	marginal band and two spots.	Frustranea	two rings with central spots.
Polyadelphia	marginal band and many small spots.	Necessaria	two double rings with central spots.
Syngenesia	two rings.	Filices	one spot on the body
Gynandria	two rings with central spots in them.	Equisetacæ	2 spots.
Monœcia	two double rings.	Lycopodinæ	3 —
Dicœcia	two double rings with central spots.	Marsileacæ	4 —
Polygamia	two single rings with several central spots.	Musci	5 —
Cryptogamia	none.	Hepaticæ	6 —
		Algæ	7 —
		Lichens	8 —
		Fungi	9 —

There is nothing we can add that will explain the matter more fully, and therefore conclude by cordially recommending the adoption, either with or without the botanical arrangement, to all plants, more especially to established specimens, whether hardy inhabitants of the open garden or the tender and highly-prized ornaments of our plant-structures.

ED.

NOTES ON NEW FLORIST'S FLOWERS.

PERHAPS the following random remarks on some of the new flowers that have appeared this season may prove useful to those who are anxious to obtain the best of all novelties, and who may not have an opportunity of judging for themselves.

Pelargoniums. — But few of these favourite yet frail flowers have been seen near the metropolis this season that are destined to lead the general taste, or that at all promise to be stars of any considerable magnitude. Connoisseurs require a decided advance of some kind or other before they concede an unqualified approbation. We have already an overwhelming multitude of what may be called middling flowers, so that unless a new kind possesses in an extraordinary degree some desirable property, it is useless and inconsistent to encourage it, much less to characterise it as “first-rate,” &c. The best of those exhibited at the public shows is Beck’s Aurora, a good-formed rose-coloured flower, but wanting substance. Silverlock’s Emperor Nicholas is of the same class, and open to the same objection. Beck’s Desdemona possesses the requisite thickness of petal, and is highly coloured, the upper petals being a rich

maroon from the base upwards, leaving, however, a tolerably distinct edging of pale rose colour. The lower petals are pink; and here the great fault occurs — they are not wide enough to preserve an uninterrupted circle. Foster's Sir John Broughton is an exquisite shape, but too small. Exactum is somewhat better. Catleugh's Wonder will probably prove to be the flower in greatest request next year; it is full-sized, tolerably well formed, and the markings striking and distinct.

Fuchsias. — Of these there is an abundance, though but few worth preserving. Smith's Coronet let out this season is a fine large flower, thoroughly distinct, which is more than can be said for nine-tenths of the seedlings offered to public notice; sepals nankin-colour, contrasting finely with the rich red corolla. What a pity it is that his Queen Victoria, *the* flower of last year, is not yet in the hands of cultivators generally! Hally's Highland Chief is a good variety, devoid of the usual coarseness. Pawley's Prince of Wales, a very free-flowering kind, of a rich crimson, would be very desirable if it stood more alone. By far the greater proportion of new fuchsias appear to have been obtained from *Eppsii*, a similarity pervading nearly the whole of them.

Pinks. — Brown and Atwell have a seedling called Favourite, a dark-laced flower, which promises well. Fairbairn's Bob Lawrence has proved a very useful and constant flower throughout this trying season, coming well laced when other (so-called) first-rate kinds had not a particle.

Picotees. — An opportunity has just now occurred to me to compare the rival rose-edged flowers Mrs. Barnard, Lady Alice Peel, and Dickson's Bride; and beyond question, the first-named lady still "bears the belle," taking precedence even of the Premier's daughter. Their relative qualities may be thus placed: —

Mrs. Barnard. Thin certainly, but of superlatively fine form and colour, the guard petals bold and firm enough to support a flower of twice the size (some of them measuring near two inches across); the edging clear and well defined, bright, and scarcely a break in it.

Lady Alice Peel. The petals of this flower are too angular even to allow its being *dressed* into a well-formed bloom; the edging clear, but so extremely light that in places it is scarcely seen, and the white or ground colour is wanting in density.

Dickson's *Bride* is, alas ! inconstant — a good flower in all other respects ; but it will *bar*, that is, the edging frequently strays half way down the petal.

There is another light-edged flower of the purple class, Neville's *Mr. Barnard*, which is very nearly a first-rate flower, but, like *Lady Alice*, is deficient of purity in the white ; the edging is very light, but there is a sufficiency, and, as is the case with all of Neville's flowers, there is plenty of stuff.

These are but occasional jottings ; but if approved of, you may expect a few more.

OBSERVATOR.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

VEGETABLE PHYSIOLOGY. — THE LEAVES OF PLANTS.

By Mr. T. MOORE.

ON a previous occasion I read to you a few remarks on that part of Vegetable Physiology which treats of the elementary organs and the root and stem of plants ; and I did so, with the view of making that paper preliminary to another on a series of important organs, viz. the leaves. In entering as I then did on a consideration of the elementary parts of plants, I had in view the abbreviation of the present paper, by referring you to what has been already said of these primary organs, which would equally refer to whatever form or modification of them we might be considering.

Whilst the root has been pointed out as the descending axis of the plant, the stem has been noticed as the ascending axis, or that part whose tendency is to rear itself at least to the light, if not actually to assume a vertical position. Around this ascending axis, as it becomes developed, other parts which are most important in the vegetable economy are developed also ; these are called the appendages to the axis, the principal of them being those parts known as the leaves, the bracts, and the flowers, which latter, containing within them the reproductive system, are followed by the fruit, or seed. All these appa-

rently differing parts have a similar origin; they all, when in their latent condition, form part of the same cylinder or cone of organisable matter, and are successively developed as that cylinder becomes extended. In this latent state there is no separation of matter, into that which shall be expanded in the form of leaves, and that which shall assume a more perfect character, and be developed as floral organs; and therefore it requires no very forcible arguments to maintain, that the bodies of tissue which we call leaves, and flowers, and fruit, are only differently formed extensions of the same original mass, and owing that difference to the vital action of the plant, and to the influence which is exercised by the circumstances in which it is placed.

The purpose of Creative Wisdom is to perpetuate each race, among the vegetable as well as in the animal creation; and as regards that part of his works which we are now considering, we may believe that whilst leaves are necessary as organs of nutrition, flowers are necessary as organs of reproduction; and with this view, we cannot too fervently adore that Power which can ordain the production of such varied forms from the same simple source, these all being, as we have seen, mere extensions of the same elementary substance, and of the same individual.

We cannot fail thus to be deeply imbued with admiration at the perfect simplicity, and at the same time, the faultless skill, with which all the machinery is constructed on which depends the preservation and progression of vegetable beings; and whilst our minds are thus filled with admiration at their perfect mechanism, we shall be led, silently, it may be, but not the less fervently, to acknowledge that the hand which formed them is divine. A few original forms of tissue blended and interwoven horizontally and perpendicularly together constitute a stem; from the developement of buds by the stem, which grow and extend on the same principle as itself, maintaining a succession of similar organs, an extension and increase of the vegetable structure is effected; the expansion of the bark in the form of leaves, within which are ramified numerous veins proceeding from the seat of nutritive matter in the stem — together with the provision of air-passages in their substance, and of evaporating pores on their surface — these provide the means whereby the crude fluid imbibed from the soil, and impelled upwards by the roots, is elaborated and assimilated by

chemical union with the constituents of the atmosphere, until it finally becomes either a secretion peculiar to the species, or is made supplementary to its increase. But hitherto we have mentioned only a stem producing branches, and these again bearing leaves: an abundant secretion of food by means of these essential organs, assisted by a peculiar and mysterious vital process, induces, however, a fuller degree of development, by means of which they are produced in a changed form, and in an aggregated position — in other words, the principle of life, having attained to its ultimatum, becomes arrested in its course of extension, and is diverted into a new channel for the perpetuation of the species. In illustration of this, I may refer to the contraction of the internodes, and the consequent coalescence of a branch and its leaves, which forms a flower; to the disintegration of the internal tissue of a petal, which forms an anther; to the folding inwards of a leaf, which constitutes a pistillum; and to the distension of this organ by an abundant supply of fluid it cannot part from, which produces a fruit. The admirable skill thus evinced in every part conveys the most forcible argument, that as a work of design they are perfect and unapproachable. But does any one ask, Why, then, if such a process is universal, do individual flowers and fruit vary in their exterior configuration as well as their internal character? I answer — no one can tell: but let me point to the constant change of one part to another, which an attentive eye may discern; to the production of bulbs in the axils of the leaves of some plants, such as the lilies, and the production of bulbs in place of flowers, as in varieties of onions; to the production of plants on the panicle of viviparous grasses — instances showing the identity of character between buds, bulbs, and seeds, and also the similarity, if not identity, of their originating sources: and, weighing well these matters without partiality and prejudice, the truth-seeking and unsophisticated mind will assent to the fact which has already been stated.

My present object is not, however, to deal directly with this portion of the subject, but to endeavour to direct your attention to the structure and the properties of the LEAVES of plants.

Leaves are produced by the extension of the woody and vascular tissue of the stem, and of the cellular tissue of the back of the plants by which they are borne; and they occur immediately below where the force of the vital action has either formed a

latent or protruded an active bud : by a parity of reasoning, buds are always present immediately above where leaves are connected with the stem, and to the non-developement of these at the time of their organisation may be attributed the appearance of those adventitious branches which we sometimes see sprouting from a hardened stem : it is this property in a great degree which enables us to manipulate at our pleasure the plants and trees under our care ; and it also admits of being turned to account in the processes of propagation.

Leaves consist principally of cellular tissue, which is traversed by the vascular system. In exogenous plants these vessels may be seen interlacing each other, and forming a network of extreme delicacy ; and in endogenous plants they run throughout nearly parallel with the margin, and branch very little, if at all : they are, in all cases, connected with the vessels of the stem. The cellular matter of leaves is called *parenchyma*, and, together with the vessels, is covered by a skin called the *cuticle*, which has, on the occasion already noticed, been alluded to as being itself composed of cellular matter in a state of extreme compression. In water-plants that have their leaves submersed, the cuticle is absent, but it exists on all the parts of plants which are exposed to the atmosphere, except the stigma. The arrangement of the bladders, or cells of tissue, forming the cuticle, differs materially from that of the parenchyma, for in the cuticle they are much depressed in figure, and adhere firmly, assuming a variety of outline in consequence of pressure ; they differ, also, in their nature, being perfectly transparent and colourless : probably they are filled with air. There is no trace of vessels either existing or terminating in the cuticle of the leaves, and therefore the opinion entertained by some physiologists, that spiral vessels end in the stomates must be laid aside. *Stomates* are small pores or openings of the cuticle ; they vary much in their position ; thus in some leaves they exist only on the under side, in others, on the upper surface only, and in some on both. Floating leaves have them only on the upper surface, whilst leaves whose margins are vertical, or nearly so, have them on both sides equally. In succulent plants they are very scanty and imperfect. It has been calculated, that the leaves of an orange tree and those of a *Mesembryanthemum* vary in this respect in the proportion of ten to one.

(To be continued.)

LIST OF NEW PLANTS.

CRASSULACEÆ. — *Dodecandria Dodecagynia*.

Æonium Youngianum. This plant, hitherto only known from a brief Latin description in Webb's "Natural History of the Canaries," flowered in June 1843, in the nursery of Mr. Wm. Young of Milford, near Godalming, after whom it was named by Mr. Barker Webb, who discovered it in the Canaries. It appears nearly allied to *Æonium* (*Sempervivum*) *arborescens*. — *Bot. Reg.*

ERICACEÆ. — *Decandria Monogynia*.

Andromeda phillyreaefolia. A very neat greenhouse shrub, introduced lately by Messrs. Loddiges, with whom it flowered for the first time in January last. It was originally discovered in West Florida by the late Mr. Drummond. One of the most striking characters in this very distinct species is the peculiar darkness of its leaves, which thus are able to set off the snow-white flowers to great advantage: they look like pearls on a negro's neck. — *Bot. Reg.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Calanthe masuca. This charming plant was flowered by Messrs. Rollison in June 1843: it is a native of Nepal, and may be regarded as the gayest of the terrestrial species of that rich country, being conspicuous both for the large size of the flowers and their fine colour. From the other purple species allied to it this is readily known by the leaves as well as by the flowers: *C. versicolor* has leaves smooth on both sides; *C. purpurea*, downy on both sides, especially beneath; while this has down only on the under side; *C. versicolor* has white sepals and petals, *C. purpurea* and this, purple ones. While, however, *C. purpurea* agrees in the colour of its flowers, its lip is altogether different, being very narrow, with the lateral lobes quite round, the contrary being the form of that of the present species.

C. masuca should be potted in turfy heath-mould, mixed with a few pieces of potsherds: in summer it should receive an ample supply of water at its roots, and, where it can be avoided, little should be allowed to fall on its leaves, otherwise the young shoots will damp off. It enjoys a humid atmosphere and a high temperature; but as the leaves are very delicate, they will soon become scorched if shading is not carefully attended to. In winter little water will be required, but just sufficient to keep the bulbs from shrivelling. This is one of the most difficult of orchidaceous plants to grow well. — *Bot. Reg.*

RHAMNACEÆ. — *Pentandria Monogynia*.

Ceanothus thyrsiflorus. A perfectly hardy shrub as this is, with evergreen foliage of the most beautiful glossy green and dense panicles of bright blue flowers, is indeed an acquisition to our gardens. In all respects this is one of the most valuable things that has been introduced for years. The country owes it to R. B. Hinds, Esq., who, while surgeon to the "Sulphur" surveying-ship, occupied himself with botany: he describes it as being common at San Francisco and Monterey. It was also found by Douglas in California, where it forms a small tree completely loaded with dense masses of bloom. It flowered in the gardens of the Horticultural Society in May last, planted against a south wall. A considerable number of plants have been distributed by the Society under the name of *C. divaricatus*, which species it was at first supposed to be; now, however, that it has flowered, it proves to be *C. thyrsiflorus*, and the first name has to be changed. — *Bot. Reg.*

LEGUMINOSÆ. — *Diadelphia Decandria*.

Clitoria fulgens. An elegant twining plant with long, slender, and slightly hairy stems, with handsome foliage, having a smooth bright green upper surface, and the lower side of a paler hue, closely covered with numerous very short soft hairs; from the axils of the leaves the flowers are produced in a clustered head, supported on a stiff and wiry peduncle, five or six inches long, elevating them sufficiently above the foliage to display, without interruption, the bright and glowing scarlet blossoms, which promise to be abundantly produced. Seeds of it were received by Messrs. Veitch and Sons, of Exeter, in the spring of 1841, from their collector, Mr. W. Lobb, who found it on the Organ Mountains of Brazil. A specimen of it was exhibited at the Horticultural fete at Chiswick in May last, as a species of *Centrosema*, one of the divisions of the genus *Clitoria*. It thrives well in a mixture of peat, loam and sand, and has hitherto been cultivated in an intermediate house. — *Pax. Mag. Bot.*

LEGUMINOSÆ. — *Polygamia Monœcia*.

Acacia cultriformis. A very elegant and free-flowering species, closely allied to *A. dolabriformis* and *A. scapuliformis*, from New Holland — *Pax. Mag. Bot.*

TROPEOLEÆ. — *Octandria Monogynia*.

Tropæolum Lobbianum. A very desirable new species of Indian cress, which justly bears the name here given to it by one of our most distinguished and liberal cultivators, Mr. Veitch, of the Nursery, Exeter.

It was detected by his collector, Mr. Lobb, in Columbia, and sent home in the early part of 1843, and bore its handsome and bright-coloured flowers in November of the same year. Trained upon those wire-trellises which are now so commonly fixed to garden pots, it makes a charming appearance with its delicate leaves and bright flame-coloured flowers. It bears some resemblance to a small *T. Moritzianum*. — *Bot. Mag.*

ORCHIDEÆ. — *Gynandria Monandria*.

Lælia peduncularis. A lovely species, sent from Guatemala, by Mr. Skinner, to Woburn.

Pseudo-bulbs ovate compressed, obscurely furrowed near the margin, more or less sheathed with large brown scales at the base, and bearing a single oblong, obtuse, thick, coriaceous leaf at the extremity. From the base of this leaf the peduncle arises, a span to nearly a foot high, slender, articulated, and sheathed at the articulations, five or six flowered at the top.

Flowers rather small, delicate, lilac-rose colour, with a deep purple eye in the centre of the lip; sepals spreading, equal, lanceolate; petals resembling them, but larger and broader; lip standing forward, lilac, about equal in length, with the sepals and petals oblong, three-lobed, tapering at the base, with the sides there inflected so as to embrace the column. The lateral lobes acute, spreading, the middle lobe ovate, oblong, obtuse, even retuse at the apex, waved and striated. The disk towards the base is marked with an elevated and striated broad line, and the colour is deep purple. Column rather short, semi-cylindrical, dark red purple, especially in front. Anther-case hemispherical. — *Bot. Mag.*

BEGONIACEÆ. — *Monœcia Polyandria*.

Begonia Meyerii. Of this fine species of begonia, received from the Berlin Garden, I regret I know nothing concerning the history, nor of what country it is a native, nor can I find it anywhere described. It is a handsome, tall-growing species, with erect, branching, stout and almost woody stems, marked with the broad scars from the petioles of fallen leaves. Leaves large, broadly and obliquely ovate, rather thick and fleshy, with an auricle on one side, at the base pale green, more or less tinged with red, the margin waved and subsinuate; the whole upper and under surface and thickened petioles covered with a short and compact hoary pubescence or woolly substance; peduncle very long, axillary, tinged with red, downy, bearing a somewhat close many-flowered panicle of large handsome white flowers. — *Bot. Mag.*

CALENDAR FOR AUGUST.

STOVE. Perhaps there is no general direction which can be given that is of more importance than that which would recommend at this particular period, and henceforward a month or two, the exercise of the greatest degree of care and consideration to have the summer growth of plants generally, and especially that of all those whose period of excitement is continued over a considerable portion of the autumn, so arranged and circumstanced as to secure its perfect maturity — or, in gardening terms, to have it “well ripened.” The proper means to have recourse to, in order to effect such an object, are principally these: — to avoid the application of *moisture* beyond what is necessary to prevent a decided check in the growth of the plants; to expose them to the influence of *light*, by not suffering them to crowd or overhang each other; and to prevent, from any cause, the too sudden declension of the average *temperature* to which they are exposed. There are of course exceptions to these rules; but, nevertheless, they should be *generally* observed.

GREENHOUSE. The prevention of a too-long-continued season of growth, and the “ripening” of such as may have already been obtained, should be the more especial points claiming attention, with reference to plants of value and rarity; and these ends may be brought about by the application of the same principles as have been already referred to. The amateur may rest assured that so long as he acts in conformity with these principles, his plants are safe; and that it is of no importance whatever as to what *means* he may employ to secure their application. It is now a good season to propagate many of the free-growing plants, in order to have neat healthy plants to keep through the winter, large ones being often too cumbersome. There are, however, many plants which do not flower so well when small; but these must be ascertained by experience, and cannot be here specified.

FLOWER-GARDEN. No trouble taken now to secure a supply of half-hardy and summer bedding plants, in a young state, and to increase their size between the present time and next planting season will be lost, if the production of flowers next year

be properly taken into account. The principal difficulty consists in the space required to preserve them through the winter in a healthy state, and to submit them to a gentle excitement in the early spring months. These remarks tend towards another; viz. that however desirable, on account of space, it may be to preserve vast quantities of these kind of plants crowded together in cutting pots during winter, or, on the other hand, to depend on spring propagation for a supply of plants, neither method can be regarded as that *most conducive* to gaiety and display during the ensuing season. When it is considered how little an amount of protection, *judiciously applied*, such plants require for their preservation, and the advantages of having strong and established plants at the planting season, it is surprising that no greater efforts should be made, not only to propagate early in the summer, but also to provide that kind and degree of protection which would render such a step eventually successful. The trimming up of all plants whose meridian of beauty is past, and the securing of all those which are advancing, continue to be necessary operations. For the rest, the season and the particular circumstances of each case will speak to the intelligent mind. Among florists the Auricula will this month require attention, this being the approved season for re-potting: it will be found that nearly every grower varies his compost for this plant, by the addition or omission of a small quantity of some out-of-the-way manure, and imagines all his success depends on its presence, or the contrary, as the case may be; but the tyro is advised to abstain from the use of any excessive stimulants, and grow his plants in fresh rich loam, leaf-mould, and a little well-rotted hot-bed manure, trusting mainly to an effective drainage. The layering of Picotees and Carnations must be finished speedily.

T. M.



THE
FLORIST'S JOURNAL.

SEPTEMBER, 1844.

THE GENUS LISIANTHUS.

WITH AN ENGRAVING OF *L. NIGRESCENS*.

THIS small genus, known to cultivators chiefly through *L. Russellianus*, as an extremely beautiful but equally difficult portion of the vegetable kingdom, has lately received some interesting additions, which, together with an improved method of treatment, made known to the horticultural world through the liberality of Mr. Cuthill, florist, of Camberwell, promises to render it of far more general interest than has yet been its fortune to obtain.

In looking through the extended range of floral beauties tended with all care and assiduity throughout the breadth and length of our flower-loving land, we may find every variety or kind of colour, either in bold and vivid fulness or shadowed forth in half tints: in some degree or other, every shade or mixture of shades is present, except one — and that is, black — an instance that has been prettily introduced in allegory, as typical of the innocence and joyousness of flowers; yet such is the contrariety of human nature, that the absence of even this sombre colour has been, and is, matter of regret, and any approach to it hailed as an advantage gained. Without questioning the justness of this taste, the subject of the present paper offers matter of congratulation in its very near approach to the much-coveted colour, its flowers being, when first opened, of so dark a colour as to be easily mistaken for pure black, and though certainly

much smaller than those of *L. Russellianus*, yet they are produced in such abundance as to compensate for the want of size ; an ordinary raceme bearing from twenty-five to forty flowers, nearly the half of which will be open at one and the same time, presenting thus a large well-filled head of bloom.

L. nigrescens is a native of Guatemala, where it was discovered by Mr. Skinner, and by him seeds were sent to the Royal Botanic Gardens at Kew in 1842-3, and the resulting plants flowered in the stove at that place in the autumn of last year. Seeds of it were also transmitted from the same rich country, and through the same gentleman, to J. Bateman, Esq. of Knypersly Hall, Cheshire, in a manner that should render the receivers of importations particularly careful of even the rubbish of their packages : this plant (like the *Achimenes hirsuta* of Messrs. Henderson) was introduced to the collection at Knypersly in a mass of Orchidaceous plants, the seed having fallen among them in their native land, and shot forth from the influence of the warm atmosphere in which they were placed on their arrival. We have heard that another species was received at Kew along with our present subject, said to produce white flowers, and called, we believe, *longiflora* ; but as we have not seen the plant, or received positive authority for the intelligence, we refrain from saying more about it.

L. Russellianus was introduced from Texas in 1835, and in cultivation must be taken as the type of the genus, for so far as we have yet gone with *nigrescens*, we have assimilated their treatment, and find them succeed equally, the difference, if any, being in favour of the new one, which certainly appears to be of more easy management.

As we have based our own method of growing this plant on the practice of Mr. Cuthill, who is beyond question the most successful cultivator of *Lisianthus* near London, we cannot do better than give his mode of treating them in his own words :—
“ The best time to sow the seed is in March, and as the seed is extremely small, it requires particular care. If deposited in the usual way upon loose soil, the first watering carries the seed along with it, and hence the failure. Prepare the following compost—half loam, the other half leaf, peat, or bog-mould, and a little sand ; place plenty of drainings in the bottom of a 48 or 32 pot ; fill it with the compost very tight, and on the top place half an inch of sand ; damp the sand with water to harden the sur-

face ; sow the seed, and sprinkle a very little dry sand on the top. Place a propagating glass over the pot, or a piece of flat glass will do, place the pot in a heat of 70° or 80° , with a pan under for future watering ; at no time water on the top, but the pan ought never to be allowed to get dry. The seedlings will appear in three weeks or more ; when about three weeks up, plant them singly in a 60-pot, in the same compost, with plenty of drainings in the bottom. Place them again in the back of your cucumber-pit or frame ; after this you cannot give them too much water over head and in the pans, and by the autumn, if they have been kept in a good growing heat, they will be fine little bushy plants. Top them at every joint ; in September shift them into large sixties, merely to keep their roots in a more intermediate state for the winter ; after this, all top watering must cease, and a pan placed under each pot to receive the watering. As the winter approaches, not a drop of water must be allowed to fall on the plant. The drier the top mould next the leaves and stem, the more certain of preserving the plant. The best place I have found is a one-light pit heated with a lining of dung from 50° to 60° , air being given front and back, so that no damp can fix on the bars and drop on the plants. The second best place is the coldest part of the stove, very near the glass ; I have also kept them well in the warmest part of the greenhouse ; in all cases, water just sufficiently to keep the plant from flagging ; if the winter is dry, once a fortnight, if damp, once a month or so. Towards the end of February place them in a cucumber-pot or frame, in a heat of from 70° to 75° , and when they begin a fresh growth, shift them into as large pots as convenient, remembering the larger the pot the finer the specimen. My largest plant last year had 600 blossoms on it, and was grown in a No. 8 pot. As the spring advances, it is almost impossible to give too much heat and moisture. They are very fond of liquid manure. It is useless to attempt to grow a fine plant in any place approaching to a dry heat, or in a temperature of less than from 70° to 80° . I have grown them five inches in seven days. In removing them out of the pits, great care must be taken to prevent the sun shining on them for some days, as the change from a damp close heat to a dry house will be too much for them. By the above treatment they will come into flower about the middle of July, and keep blooming from two to three months."

By attention to these rules, in which it appears that a high temperature, combined with great humidity, are the essential points, and some amount of practical tact, success may be regarded as nearly certain.

The genus contains, besides those mentioned, seven other species, all of them ornamental, though but seldom met with, which may be accounted for by the acknowledged difficulty hitherto experienced in preserving them through our long and often severe winters. They are chiefly natives of the West India Islands, and of South America, the home of many of our most beautiful plants. *Lisianthus* is derived from *lysis*, dissolution, and *anthos*, a flower, in allusion to its being a powerful cathartic. It is included in the natural order *Gentianaceæ* and in the Linnæan arrangement will be found in Class 5. Order 1.

EDITOR.

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

VEGETABLE PHYSIOLOGY. — THE LEAVES OF PLANTS.

By Mr. T. MOORE.

(Continued from page 168.)

THE anatomical structure of a leaf, therefore, is this: from the medullary sheath a bundle of woody tissue diverges, accompanied by spiral vessels, and passing through the bark produces numerous ramifications, forming a kind of network. At that point of the stem where this matter issues, the cellular matter of the bark diverges also, and becomes expanded with the ramifications of the fibro-vascular tissue. This latter having proceeded to the extremity of the leaf doubles back and returns beneath, forming a separate layer of fibre, which, converging with the stem, finally connects itself with the liber; the upper layer of network is, therefore, in connection with the medullary sheath, and the lower with the liber. The remaining portion of the leaves is parenchyma, enveloping these vessels, and the

whole is covered by the cuticle. Leaves generally become articulated with the stem at the point whence they diverge, and thus they are enabled to separate from it on decaying ; but this is not quite universal.

For the most part, leaves are formed of two distinct portions, which are called the *petiole*, or stalk, and the *lamina*, or blade, both of which demand our attention.

That part of the blade, or lamina, which is situated nearest the stem, is called its base ; the opposite extremity is the apex ; and the line of its edges is the margin. If the blade consists of one piece only, it is said to be *simple* ; and the same term applies also to all leaves which are not articulated with the petiole, whatever may be their form, division, or outline : thus, the entire blade of the box tree, the serrated blade of the apple, the toothed blade of the coltsfoot, the runcinate blade of the dandelion, and the pinnatifid blade of the hawthorn, are equally to be regarded as simple leaves, because they are not articulated with their petioles. On the other hand, if the blade be articulated with its petiole, it is considered as a *compound* leaf, with equal disregard to its figure ; the apparently simple blade of the orange tree, and those of the barberry, being no less truly compound than those of the Acacia or Mimosa.

The ramifications of the petiole among the tissue of the blade are called *veins*, and their distribution the *venation* : the course taken by these ramifications determines, in great measure, the form of the leaf, and is deserving of consideration. The vein which forms a continuation of the petiole is termed the midrib, from which others, diverging to the margins, produce what is termed venation, or reticulation in the leaves. If similar veins to the midrib pass through the leaves in the same direction, such leaves have been called nerved leaves. This term has been objected to, on the ground that expressions perfectly understood as applying to a particular organ in the members of one kingdom of nature, if indiscriminately applied to different organs in the members of another kingdom, must be destructive of anything like accurate ideas in natural history ; and taking the present case as an example, persons might be led to suppose that these so-called nerves in plants performed functions similar to those of animals, while the fact is, that they are merely channels for fluids. In place of this, it is proposed to call these veins, which extend from the base to the apex of the leaf, *ribs* ; those which

diverge from them, *primary veins* ; and the lesser veins, which occur near the margin, and also connect the primary veins, are proposed to be called *curved veins*, *external veins*, *costal veins*, *marginal veinlets*, and *proper* or *common veinlets*, according to their position and office. By this scheme leaves are divided into ten classes : viz. *Veinless*, or such as have no veins ; example, *Ferns*. *Straight-veined*, in which the veins are entirely primary, arising from near the base of the midrib, with which they lie nearly parallel, and are connected by proper veinlets ; ex. *Grasses*, *Palms*, *Orchideæ*. *Curve-veined*, a modification of the last, in which the primary veins are parallel, and diverge from the midrib throughout its whole length, losing themselves in the margin, but not passing from near the base to the apex ; ex. *Scitamineæ*. *Netted*, which is the common form of reticulation in the leaves of dicotyledonous plants ; ex. *Rose*. *Ribbed*, where three or more midribs proceed from the base to the apex, and are connected by branching primary veins ; ex. *Melastomæ*. *Falsely-ribbed*, when the curved and external veins in a reticulated leaf become confluent with the margin, as in *Mystaceæ*. *Radiating*, when several ribs radiate from near the base of a reticulated leaf to its circumference, as in *palmate* leaves. *Feather-veined*, where the primary vein of a reticulated leaf passes in a right line from the midrib to the margin ; ex. *Castanea*. *Hidden-veined*, which includes such as have the appearance of venation obliterated by an excess of parenchyma ; ex. *Hoya*.*

With regard to their figure and outline, leaves vary greatly ; and a corresponding multiplicity of terms have sprung into use in order to express these variations : these, however, are too numerous to be further noticed here, especially as the form, being in many cases variable, is regarded to be a point of secondary importance in all investigations of the nature of plants. In like manner, there are numerous diversities of surface, and of margin, with expressive terms by which they may be readily known.

The stalk or petiole connects the blade with the stem ; it consists of the same kind of substance as the leaves, and is generally of a half cylindrical figure, though sometimes it occurs as a thin leafy expansion surrounding the stem ; sometimes it

* Specimens in illustration of this view of venation were provided for the use of the members present.

is absent, and the leaf is then said to be sessile. In simple leaves the petiole is continuous with the axis of the lamina, from which it never separates; but in truly compound leaves it is articulated with each stalklet, so that when the leaf perishes it separates into as many parts as there are leaflets. Hence, if an apparently simple leaf is articulated with its petiole, as in the orange, such a leaf is not to be regarded as a simple one, but as the terminal leaflet of a pinnated compound leaf, the lateral leaflets of which are not developed.

The petiole, though occasionally absent, as in some few plants with sessile leaves, is sometimes found to supply the place of leaves, and in this character is called *phyllodia*: the so-called leaves of a great number of Acacias are of this nature, the phyllodia being developed so as to assume the appearance, as well as exercise the functions, of true leaves; they may be known from the latter, by their surfaces being alike, by presenting their margins, not their surfaces, to the earth and heavens, and by their being straight-nerved, which, as they occur among dicotyledonous plants having reticulated leaves, is alone sufficient to distinguish them.

In some cases the petioles become hardened, and they then assume the appearance of *spines*, as in the common barberry; the spiny petioles of some leguminous plants are of the same nature. In some cases the petiole is elongated, and endowed with the power of twisting around any small body near it, as in the pea; in other cases it passes in the form of a twisted midrib beyond the apex, as in *Gloriosa*. The pitchers of *Nepenthes* and *Sarracenia* are supposed to be modified petioles.

The usual posture of leaves on the plant is with their surfaces presented to the sky and earth, but this is not universally the case: the effect of imbrication in some instances, and of deflexion in others, is to bring the upper or lower surface respectively in a line nearly parallel with the stem; and in some cases, especially in such plants as bear phyllodia, the margins are presented to the sky and earth, generally, though not always, by means of the twisting of the petiole.

The position of leaves on the stem varies considerably, although their disposition seems to be regulated by the same fixed laws which are so admirably displayed in all the works of creation. Sometimes leaves are placed opposite, and sometimes alternate; but it seems to be probable that the normal position

of all leaves is alternate, and the whorls of opposite leaves, which sometimes occur, result from the contraction or non-development of the internodes. The true position of leaves, with reference to the stem, appears to be that of an elongated spiral, and in many trees this direction can be readily traced; as, for example, in the genus *Pinus*, and more particularly in *Pandanus*, which, in consequence of such a distribution of its leaves, is named the Screw Pine. The apparently irregularly arranged leaves of an Apple, a Willow, or almost any common tree, will also serve to illustrate the same; for if a line be drawn from the base of one to that of the next above it, and continued upwards, it will be found to have described a true spiral: it may also be remarked, that those leaves which are usually opposite betray a manifest tendency to become alternate, or thus revert to their normal position. This question may, however, be carried to a much greater length, and the spiral direction of leaves may be proved mathematically; even the particular nature of the spires, with reference to individual species, have been ascertained to be subject to fixed laws, which admit of definition. Brunn, a German botanist, has published an elaborate memoir, in which he has thrown much light on this interesting subject; and among our own countrymen, Professors Henslow and Lindley may be mentioned, as having particularly directed their attention towards it. The observations and remarks of Professor Henslow, which are deserving of the greatest deference, have very much simplified what at first might seem to be obscure; the scales of a fir cone, which are only pistillary leaves, developed around a changed stem, he has demonstrated to have a spiral arrangement, by very instructive diagrams and mathematical calculations; for these, which are possessed of much interest, I must refer to his remarks on "Structural and Physiological Botany," which form part of the "Cabinet Cyclopædia." I pass over this part of the subject the more readily, in consequence of its near relation to the doctrine of Morphology, which a brother member has undertaken to explain.

October, 1843.

(To be continued.)

LIST OF ORCHIDÆ.

(Continued from page 158.)

216. *Maxillaria Parkerii*. Plant pseudo-bulbous; bulbs dark green, rather flattish; leaves single, eighteen inches long, and two inches broad; the flowers are produced in clusters; sepals buff colour; petals nearly white, striped with red at the base; column crimson at the base, and white towards the helmet; the upper part of the labellum is yellowish buff, with a white margin. This species requires pot cultivation, in a mixture of turfy peat, sphagnum, and a few potsherds, and the plant elevated about three inches above the rim of the pot: it also requires a free supply of water during its growth, though but very little while at rest. The temperature required is from 65° to 70°. — *Native of Demerara.*

217. *Maxillaria graminifolia*. Another beautiful pseudo-bulbous plant, with bulbs one inch long, rather flat, and two-angled; leaves single, nearly two feet long, and one quarter of an inch broad; the flowers rise singly from the base of the bulb; sepals and petals pale yellow, spotted at the base, and blotched at the apex with red; column green towards the helmet, but spotted near the base; the ground colour of the labellum is nearly white, and beautifully spotted with dark red. This succeeds with the same treatment and temperature as the above. — *Native of Demerara.*

218. *Maxillaria vitellina*. Another beautiful pseudo-bulbous plant, with bulbs rather more than one inch long; its leaves are single, of a lanceolate form; the flowers are yellow, with a remarkably curious rich deep brown spot in the centre of the labellum. This also requires the same treatment and temperature as the others. — *Native of Brazil.*

219. *Maxillaria fucata*. Plant pseudo-bulbous; bulbs two inches long, and rather flat, of a shining green; leaves single, one foot long, and about an inch broad; the flowers are produced on a short foot-stalk, of a greenish yellow; the column has a slight spotting towards the helmet: the labellum is both spotted and blotched with brown. This species is not very beautiful, but is of free flowering habit. It requires the same treatment and temperature as the others. — *Native of Brazil.*

220. *Maxillaria marginata*. Plant pseudo-bulbous; bulbs better than two inches long, rather deeply furrowed; leaves in pairs, nine inches long, and about an inch broad; flowers produced on a long slender foot-stalk of a purplish cast; the sepals and petals pale yellow, margined with pale purple; labellum yellow, with a broad margin of deep purple. This also is not very showy, but a free flowerer. It requires the same treatment and temperature. — *Native of Brazil.*

221. *Maxillaria aurea-fulva*. Plant pseudo-bulbous; bulbs two inches long; leaves single; flowers produced on a spike, eight inches long, of a fine golden brown, several in number. This species is but small, but is worthy a place in all collections; it will also do with the same treatment and temperature as the others. — *Native of Rio Janeiro.*

222. *Maxillaria tenuifolia*. Plant pseudo-bulbous; bulbs small; leaves eighteen inches long, and very narrow; flowers produced on a short foot-stalk, of a green and yellow colour, spotted with scarlet. This species requires to be elevated considerably above the pot; but in other respects the same treatment and temperature as the above. — *Native of Mexico.*

223. *Maxillaria Harrisonii*. Plant with large pseudo-bulbs and strong leaves, produced singly; the flowers are mostly produced in pairs with the sepals and petals of a pale yellow cast; labellum nearly white, marked with red, and very fragrant. This species requires a long resting season, and rather a dry one, but not so as to cause the bulbs to shrivel, which will be a great drawback to its flowering. In every other degree the same treatment and temperature as the others. — *Native of South America.*

224. *Maxillaria Harrisonii* var. *atro-purpurea*. This plant is much similar in its growth and mode of flowering, but differs in the colour, this one being of a dark purple; the usual treatment and temperature will do for it likewise. — *Native of Brazil.*

225. *Maxillaria ochroleuca*. Plant pseudo-bulbous; bulbs nearly four inches long, rather flat; leaves single, eighteen inches long, and one inch broad; the sepals and petals of the flowers are yellowish white with the labellum yellow. This species is rather singular, but not so beautiful as would be imagined by the growth of the plant; it requires the same treatment and temperature as the others. — *Native of Brazil.*

226. *Maxillaria Barringtonii*. Plant with pseudo-bulbs of a pale green; leaves in pairs, eight inches long; flowers rather large, of a muddy yellow, and a ciliated labellum. This is a rather difficult one to flower, but of no great beauty; it requires pot cultivation, in a mixture of turfy peat, sphagnum, and rotten wood, and a free drainage, so that it may be liberally supplied with water while growing, but requires very little when at rest. The temperature should range from 65° to 70°. — *Native of Jamaica.*

227. *Maxillaria picta*. Plant pseudo-bulbous; leaves in pairs; flowers produced on a slender footstalk; the sepals and petals being of a rich deep orange colour, spotted with purple within, the outside being almost white, having spots and blotches of dark purple; labellum of a cream colour, slightly spotted; the column is of a deep purple. This species is a very free flowering one, and requires a mixture of sphagnum, turfy peat, and small potsherds well mixed together, and a little elevation; it also may be watered freely during its growth, but afterwards should be allowed a long rest, to cause it to flower well. The temperature, when growing, should be from 60° to 65°. — *Native of Brazil.*

228. *Maxillaria cristata*. Plant pseudo-bulbous; bulbs better than two inches long; leaves in pairs, nine inches long; flowers produced on a slender stem; the sepals and petals are almost white, much braided and spotted with crimson; the labellum is bearded, and of a dark crimson colour. This is a most lovely species, and should be grown by all cultivators both for its singularity and its beauty. The treatment required for it is a mixture of sphagnum, turfy peat, and potsherds, and to be elevated about three inches above the rim of the pot, sloping the mould a little down to the rim. Water may be given freely to it while growing, but while at rest it will scarcely require any, at least only just sufficient to keep the bulbs from shrivelling. The temperature should be, while growing, from 65° to 70°. — *Native of Trinidad.*

229. *Maxillaria Mackaii*. Plant pseudo-bulbous; bulbs one inch long, of a pale green; leaves produced single, from twelve to eighteen inches long; the sepals and petals of the flowers are of a rich reddish brown; labellum whitish, with deep narrow spots. This is another beautiful species; it requires the treatment and temperature recommended for *M. graminifolia*. — *A native of Guatemala.*

230. *Maxillaria racemosa*. Plant pseudo-bulbous; bulbs nearly two inches long, and flattish; leaves single, lanceolate, acute; the flowers are produced

on a raceme from eight to ten inches long, white, slightly spotted. This is a pretty species, and is worthy of cultivation, requiring the same treatment and temperature as the others. This genus has lately been divided, but yet consists of upwards of ninety species, differing in colour and form: the stronger growing sorts should be grown in pots, the size being regulated according to that of the plant, and a good drainage placed under them; this, I think, is the chief point in growing them at all, and especially when the mould is mixed with potsherds, as it then keeps it from getting too solid, and at the same time allows a free supply of water to the plant; for during the growing season they cannot have too much, if potted in the manner I have mentioned; and the best time for that operation is when they begin to make their young shoots; but a *gentle* watering should be given to them at the first, increasing in quantity as the plant becomes stronger. During their resting season, that is, as soon as they have done growing, very little water will be required for them, just so much that their bulbs are kept from shrivelling, and the temperature during this time should not exceed 55°, but during growth from 65° to 70°, with a damp atmosphere.

231. *Miltonia spectabilis*. This is a most beautiful species, and also of long duration; the plant is pseudo-bulbous, bulbs four inches long, of a yellowish green; leaves nearly seven inches long; flowers very large and solitary, produced from the base of the bulbs on a stem nine inches long; the sepals and petals white; labellum shaded with lilac and crimson. This species requires pot cultivation in a mixture of sphagnum and fibrous brown peat, with a few potsherds intermixed; the plant requires to be a little elevated above the rim, and during its growth liberally watered, with a temperature of 65° to 70°.—*A native of Brazil*.

232. *Miltonia candida*. This is another handsome species, worthy the attention of all cultivators; the plant differs a little from the other in the formation of its bulbs as well as its flowers, which are produced on a spike containing from four to seven; the sepals and petals are a rich yellowish brown; labellum pure white, spotted with fine bright pink; this requires the same treatment and temperature as the other one.—*A native of Brazil*.

J. HENSHALL.

(*To be continued.*)

WINTER-FLOWERING PLANTS.

As we are desirous that our remarks should apply to the seasons, we beg to direct attention to a subject which should have due consideration during the ensuing month, as one from which as much pleasure to the proprietor and credit to the gardener are derived, as from any that occupy attention throughout the year; we allude to the provision of flowering plants for the embellishment of the conservatory through the winter.

There are several free-flowering and easily accommodated plants, that seem peculiarly suited to this object, but which perhaps from being common, are passed over in the hurry of other important operations which occur at this season, or are sometimes disregarded altogether. Now we certainly hold it,

as the essential point of good management, to have a constant succession (we had almost said profusion) of flowers in this department, and are not satisfied that any man, having the necessary conveniences, should be designated a gardener, who cannot maintain this succession: still, to secure the desired display we must admit other than tender exotic plants, particularly for winter ornament; the chief aim at this season being *flowers*, those kinds may be allowed to contribute that at other periods would not be admissible, and the more hardy kinds which are easily produced in flower will be found the most useful.

A great deal of care and skill is bestowed on some of our hardy flowering shrubs when required for forcing for the conservatory or greenhouse, and with the happiest effects, for on forced or retarded flowers the winter decoration must depend, so few plants producing their flowers naturally at that time; and in furtherance of this desirable object, we will endeavour in the present paper to extend the list of plants suitable to the purpose by pointing out some that have not yet received the attention we think they deserve, and by mentioning others that with little extra trouble may have their blossoms retarded almost at the operator's will.

It is usual at this period of the year to prepare by potting, &c. roses, lilacs, rhododendrons, azaleas, kalmias, and deutzias, with occasionally one or two other favourite shrubs, for forcing purposes: these, by being placed into heat in succession, form the cultivator's chief resource through the early spring months, and amply repay the trouble they occasion. Now if we consider the very great interest with which these common plants are observed in their altered situations, that is, ornamenting the interior of a plant structure or drawingroom, we may be certain that every addition, if possessing only a share of their beauty, will be acceptable: and what an extensive and beautiful range of subjects are presented to the purpose among hardy herbaceous plants! "Flowers of every hue" and of various heights and character are to be found in the class, most of them equal or even superior to the plants usually employed, certainly second to none, and it is only necessary to select with judgment, to insure a most desirable increase of early and late blossoms.

There are a few hardy plants of this description, such as *Viola*, *Dianthus*, &c., employed for the purpose; and, judging

from the success attending their adoption, we see no reason to fear a contrary result from extending the same attention to other members of the tribe.

What we imagine to be appropriate treatment would be to divide them into two classes — the naturally early and the naturally late flowering kinds. The latter, by retarding, may have their flowering prolonged until the earlier ones, by forcing, are made to produce theirs; thus those which are blooming at the present time, by removal to the conservatory before the autumnal frosts occur, would be enabled to continue blooming until mid-winter, or after, when they would be succeeded by the forced flowers of the early class. In most cases, however, the retarded plants will require to have been potted and prepared some time previous, as it is not reasonable to suppose a plant taken from the open border in full bloom, and having its roots cramped and broken by potting, will continue in the necessary vigour, so that these remarks, in so far as they relate to this class, must be taken in anticipation of another season, rather than as applying immediately to the present.

No obstacle of this sort, however, exists with respect to the selection of spring-flowering kinds, which, by gentle forcing, are to be brought into a flowering state by the end of December. These may be potted at once, and got into a proper state, to bear the application of heat at the required time.

With respect to this part of the question, it should be borne in mind that the degree of heat employed must be regulated with regard to the period at which the plants operated on unfold their flowers when in their usual situations. Thus those which bloom in February and March will require a much smaller proportion than those of April and May to have them in flower together; as, for instance, if *Arabis* or *Hepatica* were selected, a common frame, with a very slight hotbed, would be sufficient to force open their flowers any time in December or January, while to have *Ænothera* or *Delphinium* during the same months, a heat equal to that usual for forcing tulips would be necessary: still, this is easily arranged by reference to the times at which they flower naturally. As we intend to offer some remarks on the principles of flower-forcing next month, we need not enter on the subject just now, but defer it till that opportunity. There is yet another class of flowers which may be made to contribute a larger amount of

beauty through the dull season: these are annuals. It is true they are not quite such strangers to the conservatory as those we have been speaking of: still they might be introduced more extensively with corresponding advantage; from among these the more robust kinds should be preferred, as being better calculated to withstand the vicissitudes of the winter than the tender and delicate sorts. A neat habit, united with large or gaily-coloured flowers, are the chief qualifications, without reference to rarity or costliness; for a yellow primrose will have as many admirers at Christmas as the most gorgeous productions of the East at another season. We cannot close this paper without strongly recommending a little favourite of ours. The *Lobelia gracilis* we have found to be the most useful plant we ever grew for winter ornament, continuing a profusion of its pleasing bright blue flowers for an amazing length of time. We have now a plant which has been constantly and completely clothed with blossom for fourteen months, and is still in perfect health, having stood through the whole of last winter in a pot in a greenhouse, and in May it was turned into the open border, where it remains a contradiction to the received opinion relative to annuals.

ED.

ON PHLOX VAN HOUTTII AND OTHERS.

THIS valuable addition to an already extensive and beautiful family may be truly termed the greatest ornament our flower-gardens have received for a very long time; its neat compact habit without paucity of foliage, added to its brilliant and abundant variegated inflorescence, render it perfectly unique. The whole genus is universally allowed to be among the most handsome of hardy herbaceous plants; but this one, in my opinion, is decidedly the gem of the collection. I have several plants of it flowering now most profusely, each head of bloom being from three to four inches in length, and half that in diameter: the flowers individually are about the size of a sixpence, of a deep rose colour approaching carmine; the divisions of the corolla are severally feathered in the centre with pure white: next season I trust to have a sufficient stock to fill an entire bed, which I flatter myself will be indeed a beautiful object, as it appears to be peculiarly adapted to this purpose. The plants

attain a medium and convenient height, and continue to bloom throughout the autumn.

It has struck me that from this genus being so thoroughly useful for flower-gardening purposes, a brief notice of the more attractive species will perhaps afford information to some of your readers.

P. Van Houttii, already described, emanated from the nursery, in Ghent, of the gentleman whose name it bears; it is perfectly hardy, though the purity and brilliance of colouring is improved by a slight protection, such as a cold pit or frame will afford.

P. Princess Marie or *Marianne* is a variety resembling very nearly the above; there is a slight difference in the ground-colour of the flowers, and with me the plant is rather more tender. The history of this variety I am not acquainted with.

P. omniflora may be regarded as most decidedly the best of the old kinds; its large dense heads of pure white flowers are truly magnificent: it is an English hybrid, but as hardy as an oak. The stems attain a height of about three feet.

P. Ingramiana, another British hybrid, was raised, I believe, in the neighbourhood of Huntingdon. Its flowers are lilac, not so large as the foregoing, but very pretty; it is a taller-growing kind than either of the above, which renders it suitable for the centre of a bed, or for vacant spaces among shrubs.

P. odorata, a North American species, is equally desirable for its fine rosy-lilac flowers, and their very agreeable odour: it is an autumnal flowering kind, rising about three feet in height, and well suited to plant on mosses along with *omniflora*.

P. læta. — Also from North America, bearing very large flowers, but the white is rather deficient in purity; and, unfortunately, they are produced at the same time with those of *omniflora*, whose greater density affords an unfavourable comparison.

P. paniculata is an extremely pretty pink-flowering North American species: it will attain a height of five feet, and commences blooming about the middle of August.

P. Shepherdii, an hybrid, with dark purple flowers, is a very good variety for contrasting with the other paler-coloured kinds.

P. Carolina is, perhaps, the most common of them all, but is still valuable, from its extreme hardihood: it will grow on any soil, and under almost any circumstances: the flowers are pale purple; height four feet.

P. cordata rosea is an indispensable variety. Its pretty flesh-coloured flowers, by heightening the tints of the surrounding kinds, render a mass of them extremely imposing.

P. nivalis, white; *P. procumbens*, flesh; and *P. reptans*, bluish purple, are all trailing kinds, suitable for the margins of beds and borders, and have a pretty effect among rockwork. The list might be extended to a much greater length, but this probably will suffice for a beginner.

T. SINCLAIR.

LIST OF NEW PLANTS.

CINCHONACEÆ. — *Pentandria Monogynia*.

Hindsia violacea. This plant differs from the better known *H. longiflora*, chiefly by having much larger, broader, and more downy leaves, the flowers much larger and more hairy, and by the calyx, of which one, two, or three divisions are much larger than the rest, and more or less dilated and leaf-like above the middle.

Both species vary in the size of the flowers, and in the shade of their colour. In the *H. longiflora* also, and perhaps in *H. violacea*, the stamens are entirely included in the tube of the corolla in some specimens, and in others the tips of the anthers protrude.

This *Hindsia violacea* is one of the finest things obtained from South Brazil. It has been imported by Messrs. Veitch and Son, of Exeter, and will doubtless prove a very easily cultivated greenhouse plant, and is certainly unsurpassed in beauty by blue flowering shrubs; the flowers are produced in loose terminal heads, each individual being from two to three inches in length, and the limb extending about one-half that distance in diameter, of a deep porcelain blue. — *Bot. Reg.*

ORCHIDACEÆ § VANDEÆ. — *Gynandria Monandria*.

Aerides virens. This is a beautiful addition to that set of *Aerides* of which *A. odoratum* was the first discovered. Like the flowers of that species, these are deliciously and very peculiarly sweet-scented, and not at all inferior in size. Each sepal and petal has a deep purple blotch at the end, while the remainder is a delicate soft French white. The lip is speckled with crimson, and bears in the middle an inflated, sanguine, serrated tongue.

The leaves are much alike in all these plants; but here they are of a peculiarly bright green, which circumstance has suggested the name. It was imported from Java in 1843, by Messrs. Loddiges of Hackney. — *Bot. Reg.*

AMARYLLIDACEÆ. — *Hexandria Monogynia*.

Stenomesson Hartwegii. A pretty little bulbous plant found by Mr. Hartweg at the Hacienda del Ixo, on the ascent to Antisana, in the province of Quito, at the height of 11,800 feet above the sea. It has gay orange-coloured nodding flowers, growing in pairs. It should be grown in a mixture of peat and sandy loam in equal proportions, with the treatment usually applied to this class of plants; it will succeed in a warm greenhouse. — *Bot. Reg.*

CESTRACEÆ. — *Pentandria Monogynia*.

Habrothamnus elegans. The beauty of *Habrothamnus fusciculatus* is so striking, that attention is strongly drawn to the discovery of other species in Mexico, and the Belgians have already succeeded in adding that now represented, which, although not comparable with *H. fusciculatus*, is evidently a graceful and gay-looking plant; it has a terminal head of erica-like flowers of a bluish carmine, and the plant itself is evidently a soft-wooded species to be treated in the same manner as Pelargoniums. — *Bot. Reg.*

ORCHIDEÆ. — *Gynandria Monandria*.

Odontoglossum pulchellum. A most delicate and elegant plant, well deserving the name Mr. Bateman has appropriated to it. It is a native of Guatemala, introduced, we apprehend, through the medium of Mr. Skinner; and it flowered in the stove of the Royal Botanic Gardens of Kew in October, 1843. The plant is pseudo-bulbous; bulbs clustered, oblong, tapering upwards, bearing two elongated linear leaves; the flowers are borne in a loose spike, the stem rising from the base of the pseudo-bulb; every part of the flowers is white except the crest of the labellum and the anthers, which are yellow, the former, in addition, being spotted with bright red. — *Bot. Mag.*

LOBELIACEÆ. — *Pentandria Monogynia*.

Siphocampylus lantanifolius. A rather weak-growing, but erect shrub, with many rounded branches. The young ones herbaceous, having leaves with a distant resemblance to those of the *Lantana*. The striking peculiarity in this plant is in the inflorescence, which constitutes a many-flowered corymbose raceme. The colour of the flowers is a pale, yet bright crimson, the segments of the corolla being tipped with bright green. It was originally collected in Caracas by M. Vargas. — *Bot. Mag.*

ASCLEPIADEÆ. — *Pentandria Digynia*.

Asclepias vestita. A new and well-marked species, for a knowledge of which we are indebted to Mr. Veitch, of Exeter, who received seeds of it, we believe, from the southern states of North America, and reared it in the greenhouse, where it flowered in October, 1843. It is an herbaceous plant, bearing dense hemispherical umbels of curious green and purple flowers. — *Bot. Mag.*

ORCHIDACEÆ. — *Gynandria Monandria*.

Dendrobium Dalhousieanum. This splendid species of *Dendrobium* was originally obtained by Mr. Gibson, Botanical Collector to His Grace the Duke of Devonshire, from the botanic gardens of Calcutta, and by him transmitted to Chatsworth. The Calcutta gardens were indebted for their plants to Lady Dalhousie; but it was unknown whence her Ladyship procured them. About two months ago a specimen imported by Messrs. Loddiges from the same gardens, flowered in the superb collection of those gentlemen. The plant is of a medium habit, producing its graceful bending racemes of flowers from the upper portion of the defoliated stems, formed the preceding year: the flowers themselves are large and specios; the sepal and petals are of a delicate pale nankin, shaded with salmon-colour; the lip is very handsome, shaped somewhat like a boat, with an obvious peculiarity in the raised parallel coloured lines on each side, pointed towards the middle, and detached for a short distance from the body of the lip at the innermost termination: it is of the same colour as the sepals and petals, having two large, intense, crimson velvety, eye-like spots on the upper portion.

In the Calcutta gardens it produces its flowers in the dry season, a circum-

stance meriting attention in its treatment in an artificial climate. — *Pax. Mag. Bot.*

LEGUMINOSÆ. — *Polygamia Monœcia.*

Inga pulcherrima. This species bears a striking similarity in its general aspect to *I. Kermesina*; it has, however, much smaller foliage; and the bright crimson drooping tassel-like blossoms, though scarcely equal in size, shine with a deeper and more lustrous hue. It is stated to be a native of Mexico, and introduced to this country in 1822; but though so old a plant, it is but seldom seen. — *Pax. Mag. Bot.*

PEĐALICÆ. — *Didynamia Angiospermia.*

Martynia lutea. This neatly-speckled flowering plant was first produced in England in the gardens of the Hon. and Rev. W. Herbert, Dean of Manchester, who, in the year 1824, received seeds from the Brazils, and raised several specimens from them, which flowered in August the following year. The flowers are funnel-shaped, produced in a dense head, of an orange-yellow spotted with blood colour inside. It is an annual, and on its first introduction was cultivated exclusively in the stove, but has since been found to flower well in an ordinary greenhouse: a rather poor earth will suit it better than one abounding in rich nutritious matter; as, the foliage being copious and large, and the stems strong and somewhat succulent, are in danger of acquiring too much luxuriance, and attaining a size disproportionate with the inflorescence. — *Pax. Mag. Bot.*

TO CORRESPONDENTS.

T. BARTY, Esq., *Anchorfield.*—We do not exactly recognise the insects by your description: send a few by post, in a quill, and we shall be able to speak more positively. As a remedy for all these minute pests, let us advise you to have all your vacant ground thrown into narrow steep ridges before the first frosts occur; and, as soon after as it can be worked, ridged again cross-wise; repeat this in every thaw until the ground is wanted, and the result will well repay the trouble: we find it far preferable to any topical applications. Spirit of tar, or even tar-water, is very offensive to most insects: a dressing of soot is an excellent prevention of the onion-maggot, but it should be applied early in the season, at the time the fly is about to deposit its egg; your crop is too far advanced to admit of a cure. Guano in a solid form can only be applied with success in damp weather; but the drought could not have made any material difference in your case, as it was applied in a liquid state: it must then have been the guano in fault, for your proportion was a very good one for this manure, of average strength; but, as we have before remarked, it is never twice alike. If you have a good supply of stable manure, guano is unnecessary; let it be first well rotted, and we are satisfied no danger need be apprehended from a very liberal use of it. Lime would be beneficial to your land; turn it in when the ground is trenched.

H. H. D. — Now that the Carnation bloom is over, we beg to remind our correspondent of his promised notes, which we shall be happy to receive.

F. H. HARVEY. — Hyacinths for forcing should be potted directly they can be procured, in a mixture of loam, leaf-mould, and well-decomposed manure, adding a good quantity of sharp river-sand: it is not necessary to repot those which are intended to bloom in December; but those which flower a month later, when we expect to see them fine, will be much benefited by it; these should be placed at the first in 48-sized pots, and, as soon as the roots fill the pots, remove them to 32s.

CALENDAR FOR SEPTEMBER.

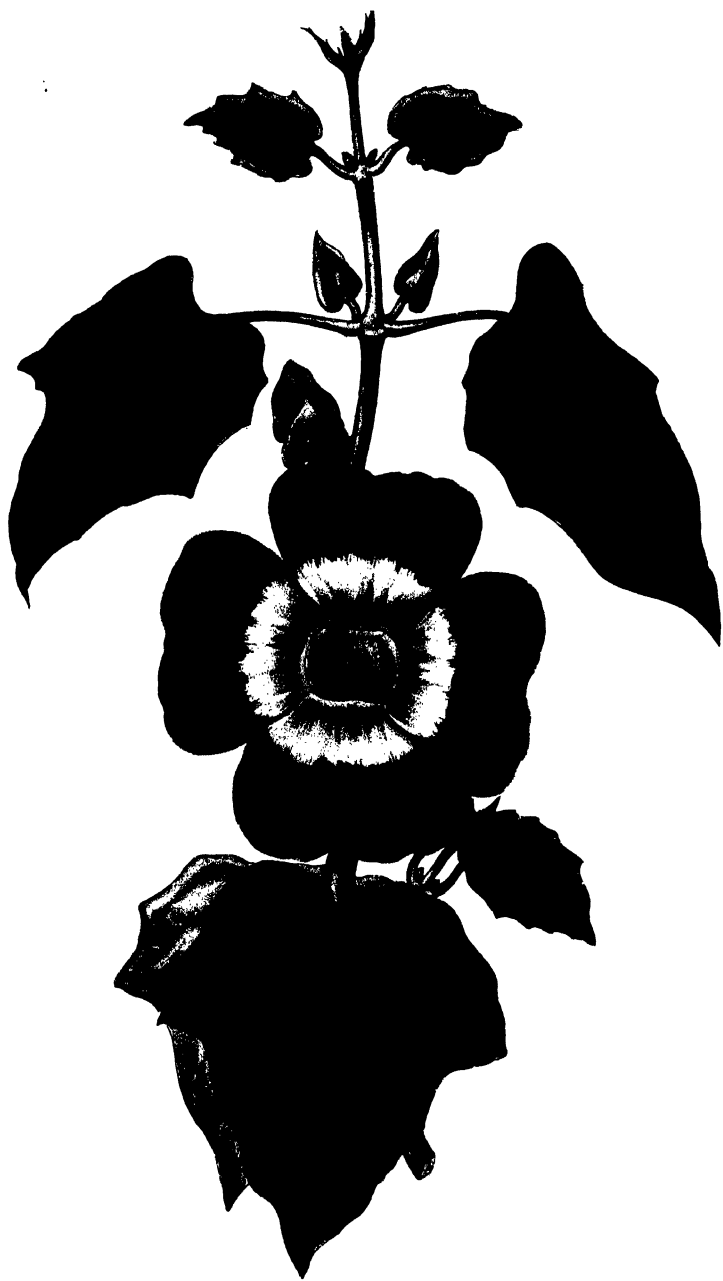
PLANT STOVE. The application of artificial heat, in sufficient quantity to render it appreciable, is still more important, if possible, *now*, than in the depth of winter. Hot autumnal days are generally succeeded by nights very much cooler than what would be proportionate to the heat of the day; and when the external temperature is thus disproportionately lowered, that which is internal is affected also, and considerable injury is sustained by such plants as have not matured their growth. Those which have naturally gone into a state of rest will be less sensible of this declension of heat. It is in many cases necessary to extend the growing season over a portion of the autumnal months, in order to secure an average increase of growth; and this treatment, which involves the attention we now refer to, to render it successful, is often preferable to the premature arrest of this growth, ere it becomes satisfactory and complete. In applying heat at this season, however, we must not forget for what it is applied: this is simply to mature late growth, and by no means to excite renewed development; it must, therefore, be accompanied by a small proportion of moisture, and be powerful in proportion as it is accompanied by light.

GREENHOUSE. The protection of greenhouse plants from heavy and continued rains, and from frost, and the preparation of them for their winter-quarters, will now require strict and punctual attention. The most delicate should be first secured, and then the others may follow, as opportunity or necessity may suggest. It is essential that when first removed under shelter, they should be allowed to remain as open as possible, or the confined dampness of the atmosphere will cause the succulent scarcely-ripened shoots to damp off. The amateur should impress on his mind that the least degree of protection which excludes frost is sufficient for the majority of these plants, and far preferable than a more powerful application, which frequently

either kills (with kindness) or enervates for the season. In arranging the plants, try if a scientific disposition of them into "natural groups," having properties in common, will not be more pleasing to the eye than the stiff and formal arrangements generally adopted. Water sparingly; and remove with alacrity all vestiges of decay.

FLOWER-GARDEN. If there are any plants which it is desired to preserve, either for blooming or for propagation, they should be taken up before they are at all injured by frosts. Flower-beds which are still gay and blooming, may often be preserved beyond the ordinary limits of the season, as affected by locality, if a slight covering is cast over them at night, when frost is anticipated, and removed in the morning. Plants which become destroyed, or much disfigured by frost, should be removed as soon as possible, and their place supplied by small evergreens in pots (see p. 20.). Continue to use all possible means to secure a full and healthy supply of plants for next season; and remember that if plants are not provided now, the flower-garden will not be gay at an early period next summer. Prepare and renovate, where it can be done, the situations intended for the planting of bulbs for spring flowering. Sow a few hardy annuals early, in a sheltered position; if they survive the winter, they will add to the cheerfulness of spring. Perhaps at this season, when the recollection of the flowery past is vividly painted on the mind, and the dreary future flits before it, the characteristics of neatness and good order are more pleasing or satisfactory, as well as more fully appreciated than at any other period.

Layers of Picotees and Carnations that have taken root should be potted at once; they have then a better chance of becoming well established before the winter. Pinks should be planted into the blooming bed without delay. Tulip-growers are now busy arranging their roots previous to planting: this should have due attention, as on it depends much of the future beauty of the bed. Auriculas and Polyanthus require protection from heavy rains, more perhaps at this season than any other. Dahlias are now rewarding the cultivator for his past care, yet even now they require constant attention: sticking, tying, thinning, &c., must still be carried on; and last, though by no means least, those "insidious gentry" the earwigs, must have their share of attention.



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THÜNBERGIA CHRYSOPS.

WITH AN ENGRAVING.

WE are much gratified by the opportunity of presenting to our readers a figure of this beautiful plant, which, from the various statements and opinions in circulation respecting it, is now exciting so much attention and inquiry. It is seldom, indeed, such a combination of beauty is met with in any single individual of the vegetable kingdom, as is presented to the admiring eye of taste in this instance. A blue *Thunbergia*, it is true, is not so startling a novelty as was the blue *Nasturtium*; but those we already possess of the colour are extremely objectionable: the one on account of its rambling uncontrollable habit, and the great paucity of flowers by which it is distinguished; and the other for its debilitated sickly character, which renders it very difficult even to keep in existence, the production of a plant in any thing like a healthy condition or a free-flowering state being something near an impossibility, a feat that has never yet, we believe, been achieved.

In the plant before us, however, we have all these objections met in the most satisfactory manner; a habit of the most happy medium description, neat and compact, yet sufficiently robust to satisfy the most fastidious, uniting with a free development of large and lovely flowers. We do not often indulge in such unqualified praise; but really it seems to us a most unenviable and difficult task to point out a blemish on this truly fine thing.

T. chrysops, although in strict terms a climbing plant, partakes also of the arborescent form to a much higher degree than is observable in any other member of the genus, so much so that, by some attention to the removal of the points of its leading shoots, it may be made to assume an erect and decidedly shrubby character; indeed it is not until the plant has become established, and attained a considerable stature, that, in the majority of instances, it displays a tendency to climb at all. This is an advantageous trait that cultivators must not overlook; for thus, it will be seen, it may be made to group with collections of plants of the ordinary description, or among climbers alone, and yet preserve a proper keeping with either: the importance of this, where the allotted space is limited, must be obvious.

In cultivation, the plant, although naturally an inhabitant of the torrid climate of Sierra Leone, does not seem to insist on the high temperature we might be induced to believe necessary from its native location, an ordinary stove appearing sufficient to produce it in great luxuriance; and we are inclined to believe a much lower temperature than even this will be found enough. *T. alata*, another Indian species, grows and flowers extremely well when exposed to the full influence of our summer weather; and we shall not be surprised, in a few seasons, to find them growing side by side in the same situation.

Seeds of this plant were received from Sierra Leone by the Right Hon. the Earl of Derby, from which plants were raised at Knowsley Hall, whence it was sent to the Royal Botanic Gardens at Kew; and through His Lordship's liberality, and that of the management at Kew, it has since been pretty widely distributed among the more eminent growers throughout the kingdom. We are indebted to the kindness of J. H. Schröder, Esq., of Brixton, for the opportunity of figuring it; in whose collection the plant from which our drawing was made flowered in September last. We find it grow rapidly and strong in a mixture of rough peat and leaf-mould; and, as the spread of roots is fully equal to the quick advance of stems and leaves, it seems to require a considerable space to admit of a free and full development of these organs. It is readily increased by cuttings in the usual way; and, so far as we have opportunity for forming an opinion, it promises to bear seed abundantly. This feature will recommend it to the attention of those who can bestow

the necessary care, and who delight in that pleasing and wonderful operation, hybridising. To our mind it presents a most promising chance of producing something thoroughly good and distinct. A blending of the purple of this with the orange, yellow, white, or scarlet of other species, must, we think, produce some startling results.

For a detailed account of the entire genus and its management, we must refer our readers to page 233. of our last Volume.

EDITOR.

AN ENQUIRY INTO THE PRINCIPLES OF ACCUMULATIVE POTTING.

(Continued from page 132.)

I AM aware of the difficulty attending the investigation of a subject of this kind, also that it may not meet the opinion of every person. My object, however, is simply to call into action our thinking faculties, that we may be led to enquire and reflect, and practise for ourselves. In my former paper I purposed showing the relation between distorted vegetation and the spongiolæ; in so doing I shall still confine my observations to the accumulative system. It must be understood there is some analogy between animal and vegetable existence, and that the effects, internal and external, are similar, though the one be stationary and the other capable of removing itself without the aid of man. Plants when once fixed to the soil, if suitable to their constituent parts, thrive, and the spongiolæ will go some distance in search of the food necessary for their sustenance. By way of illustration, the roots of large trees and vines are found to extend over a wide space of ground; this is a proof that the spongiolæ is the principal organ by which plants are supported, though many contend that the leaves are the most efficient channel through which they receive their nourishment; but, if this be so, how is it if a tree be planted and curtailed of its roots, that it will be some time before it regains its former vigour? If then the action between the leaves and the spongiolæ is so reciprocal, it is evident, from the laws of

Nature, that for the leaves to be in a healthy state, and the several organs of the plant properly developed, we must preserve the spongioles uninjured, by all possible means. It must, however, be borne in mind, that after a certain period has elapsed, the spongioles will form cuticles, at which time they cease to perform the necessary office. It is true many trees have been renovated after arriving at a certain age by pruning the roots, thus inciting them to make fresh spongioles closer to the stem, though I must practically affirm that root-pruning would not be beneficial in all cases. I have already shown, in my former paper, the derangement of the organs which takes place in the leaves of a plant after having been forced. This may be accounted for from the large quantity of fluid they are under the necessity of absorbing to keep pace with the temperature.

A proper knowledge of the geographical distribution of plants would enable us to arrive at an acquaintance with the temperature to which they are subjected in a natural state, and their seasons of rest and excitement; for there is a time when all plants require rest, or may be said to be in an inactive state. Due attention to these laws would twofold repay us; for nothing appears to me so important to the success of the accumulative system, more especially in reference to the supply of water. Another thing essential for the cultivators to be acquainted with is, the organisation of earths; for, be it recollected, before plants can receive their food it must first be decomposed. Thus, in watching the harmony of creation, we observe one plant decaying to supply nutriment to the other, from the gigantic oak down to the diminutive moss, all regulated by the wisdom of a benevolent Providence. Much evil arises from the sifting of soils; by this process the mould becomes compressed. By allowing the soil to partake of a rough texture, you admit the action of the atmosphere, which is favourable to the growth of plants, as may be seen by the spongioles clinging round the earth, where it comes in contact with the air. In removing the plant from a large to a small pot, the chief thing to be attended to is, to have your plant in as free a growing state as possible, due flexibility being the characteristic of the tissues; for it is not reasonable to suppose that a plant of stunted growth will thrive so well as one in full

vigour. The ball of earth should be kept as nearly level with the surface of the pot as possible, as the soil will sink, and the roots descend. In draining the pots, great care is required to avoid the use of any crocks to which impure matter adheres, which, by increasing, will probably check the drainage, or produce noxious gases. After placing the first layer, I would recommend fibrous matter with some coarse soil over that, then adding the proper compost till you come to the centre, when slight drainage, in my opinion, should be adopted; this may be charcoal. Much has been said for and against this substance; but I will endeavour to point out such of its claims upon the horticulturist as have come under my notice. It has the property of decomposing impure matter, such as tainted meat and putrid water, may it not then have the power of keeping the soil free from the putrefying matters which often destroy the spongioles? Its porosity, as well as the property of absorbing water with rapidity, and, after imbibing it, allowing all other water to sink through it directly, are some of the favourable effects; besides it has the power of fixing the oxygen, combining it with the carbon, and thus affording food to plants, independent of other sources with which the various organs of the plant may come in contact. The quality of water is another essential, to the undue consideration of which failures may be often attributed, from the various substances with which it is sometimes charged. Pernicious effects often proceed from the matter it may collect in passing through pipes, or in tanks or other vessels; independently of this, hard water has a tendency to harden the spongiole, depriving it of its due flexibility; but for useful information on this subject, I would advise every horticulturist to possess himself of Booth's *Treatise on Water*. A due attention to proper ventilation is also essential for the well-doing of plants; the only rule to be guided by is, to make oneself acquainted with the nature of the influence of the various seasons on vegetation, in the several localities from which our plants are obtained.

I have now glanced over some of the leading features of the accumulative system. My ambition has not been to court approbation, but to excite enquiry into the truth of those matters on which our labours depend for success. The laws which govern vegetation have been neglected even by the

majority of practitioners as useless theories, thus leading us to ascribe our failures to other causes than the right. I might have gone more minutely into the subject, but I consider I have said sufficient to show the importance of ascertaining the correctness of a principle before we venture upon its condemnation.

J. F. M'ELROY.

Stockwell.

ON PLANTING THE RANUNCULUS.

SIR,— Many are the complaints of loss of Ranunculuses, from all quarters, this last season. Allow me to advise your readers who grow this lovely flower, to make up their *beds* now ; for by doing so they will save many a root, as I am confident I have done. Dig out the beds intended for them, lay a layer of old cow-dung, about 8 inches below the surface, and 3 inches deep, having previously turned up the subsoil. Shake a little lime over the dung, to kill the worms, and fill up the bed with a mixture of loam, leaf-mould, and some *very old* cow-dung, almost reduced to mould itself. Let it remain undisturbed till planting-time (February). These are directions I received from an eminent Scotch grower, and they are good in practice ; next month I may write more about this flower, choice of sorts, &c.

Your obedient servant,

CLERICUS.

[Our correspondent, in this short note, gives excellent advice, which we recommend to the attention of all who grow the Ranunculus. The object to be gained is a firm bottom, on which to plant the roots. So fully alive to the importance of this matter are the Dutch growers, that they beat the surface of the bed down firmly with wooden beaters previously to planting. We shall be glad of the promised notes.]

LIST OF ORCHIDÆ.

(Continued from page 183.)

233. *Miltonia candida* var. *grandiflora*. This is a most beautiful variety, and ought to be in every collection. Its manner of growth is much similar to that of *M. candida*, as also its flowers, but they are larger, and the colours brighter. It requires a little elevation above the pot, and a good drainage, with a mixture of turfy peat, sphagnum, and a few small potsherds, mixed together. Water will be required but sparingly at the first, but increasing it as the plant becomes stronger. A temperature of 65° to 70°. — *Native of Brazil*.

234. *Miltonia candida* var. *flavescens*. This is another variety of *M. candida*, similar in growth and flowering, except that this is larger, and varying a little in the colour of the sepals and petals, which are of a deep yellow veined nearly all over with brown; the labellum is white, with a slight stain of purple in the throat. The same treatment and temperature as for the others will do for this. — *Native of Brazil*.

235. *Miltonia Clowesiana*. (Named in compliment to the Rev. J. Clowes, of Broughton Hall, near Manchester, a successful cultivator of these plants.) Plant pseudo-bulbous, and very similar to *M. candida*, except that the leaves of the former are rather more tapering, and a trifle greener; the sepals and petals of the flowers are yellow veined and barred with brown, and the base where it joins the column tinged with purple, the column has also a slight tinge of purple on each side towards the helmet. The structure of the labellum is altogether different, and its lines are peculiar; it has a deep stain of purple across the breast, gradually becoming lighter as it approaches the apex, which is considerably compressed in the middle by the folding of the edges, and at first is nearly white, but afterwards acquires towards the base a pleasing violet and pinkish tint. The same treatment and temperature as the others. — *Native of Brazil*. This plant is also known as *Brassia Clowesiana*, it being correctly referred to that genus.

236. *Miltonia Clowesiana* var. *nebulosa*. (From *nebula*, a cloud.) This plant is also similar to the others in growth, except that the bulbs are rather flatter and slightly furrowed; the leaves scarcely so long, but the flowers are produced the same way. The sepals and petals are brownish yellow blotched (clouded) with dark brown, while the others are barred; the column has also a darker stain of purple towards the helmet. The labellum is fiddle-shaped, and the edges not compressed as in the other, which makes it quite distinct in form as well as colour, which at the base where it joins the column is white, having a broad band of dark purple across the breast, with the rest gradually shading to a white. The same temperature as well as treatment will do for it. This is quite new, having lately expanded its flowers in the rich collection of Messrs. Rollisson, Tooting. — *Native of Brazil*.

237. *Miltonia Russelliana*. Another beautiful species well deserving attention. In growth and flowering it is similar to *M. candida*, producing a spike of flowers from 12 in. to 16 in. long, and requiring the same treatment and temperature. — *Native of Brazil*.

238. *Miltonia cuneata*. This is another handsome pseudo-bulbous species, bearing a resemblance in growth to the rest. The same treatment and temperature as the others.

239. *Notylia punctata*. This species is of dwarf growth, its leaves being only from 3 in. to 6 in. long, of a bright green; the flowers are produced on a drooping raceme, of a pale green and white spotted with yellow. It requires placing on a log of wood covered with sphagnum, and a free supply of water while growing, with a temperature of 65° to 70°. — *Native of Trinidad*.

240. *Notylia Barkerii*. Another singular species, producing small yellow flowers, much like *N. incurva*. It also requires growing on a block, in the same manner as the other. — *Native of Mexico*.

241. *Notylia incurva*. This is also a small-growing species; the flowers are pale yellow. The same treatment and temperature will also do for this. — *Native of Trinidad*.

242. *Notylia tenuis*. Another of those curious little plants, the colours of which are not rich, but their fragrance very powerful. Treatment and temperature same as for the others. — *Native of Demerara*.

243. *Notylia maculata*. This is a very small pseudo-bulbous one, with a drooping raceme of very small pale greenish white flowers, slightly spotted. Requires the same treatment as the others. — *Native of Demerara*.

J. HENSHALL.

(*To be continued.*)

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

REMARKS ON THE CULTIVATION OF MIGNONETTE IN POTS.

By Mr. D. DOIG.

AMONGST all the odoriferous plants which are cultivated for decorating the conservatory and the drawingroom, there is none more universally admired or more easily cultivated than the mignonette; and yet it is seldom that we see it brought to that perfection of which it is capable, more especially during the winter and spring months.

Reseda odorata, or the Mignonette, is a native of Egypt: it is, under ordinary treatment, an annual plant, growing from 6 inches to a foot in height, and is hardy enough to stand this climate during the summer months; but it will not survive our ordinary winters, unless in some very sheltered situations. In order, therefore, to obtain a regular succession recourse must be had to pot or box culture, which will form the subject of the following remarks.

The beginning of February is early enough to make the first sowing for a spring supply. The soil which should be used should consist of one half loam, one fourth part dung, and one fourth part leaf-mould, well mixed together, and used in as rough a state as possible: the worms (if any should be in the soil) ought to be carefully picked out, or they will cause great injury to the plants, by stopping the drainage and disturbing the roots. The pots known as "forty-eights" will be large enough for this sowing; and these should be prepared by placing a crock over the hole in the bottom, and laying on this about 2 inches of the roughest of the soil, after which they should be filled with soil, pressed evenly and firmly, leaving the surface level within half an inch of the rim. On this the seed should be sown regularly, and, if its quality can be depended on, two dozen seeds will be enough for each pot; they will come up stronger than if sown thicker. Sift a little soil over the seeds, and give this a gentle pressure with the back of the hand, leaving the surface smooth and even, but not "glazed;" then give a gentle watering with tepid water, which will warm the soil and assist germination. Plunge the pots in a frame with a gentle bottom heat, and keep the lights shut till the plants begin to appear; afterwards admit a little air every day, if the state of the atmosphere will allow; but at all times avoid the admission of currents of cold air, as I am convinced that mignonette suffers severely from too rash an exposure to cold winds. When the plants become a little inured to exposure, remove the lights every fine day, which will prevent them from being drawn, and better enable them subsequently to support themselves. As soon as the seed-leaves are fully developed, thin out the plants, leaving at this time ten or twelve in each pot; this number should be retained, as they are liable to damp off if over-watered, and especially if the weather should happen to be dull. When they have made three or four leaves, thin them out to five plants, which number is sufficient for a 48-sized pot; at the same time stir the surface of the soil, which often becomes caked by continual watering, and thereby prevents the access of air to the roots. When the sun begins to act powerfully upon them, a thin shading for a few hours during the heat of the day will be of great service, by obstructing its rays, which give to the

foliage a yellow and unsightly appearance. When they have grown three or four inches, they will require to be tied up, to prevent them from falling over the sides of the pot. In doing this, place five small stakes at equal distances close by the edge of the pot; then pass a strip of matting with a turn round each of the stakes, and fasten it: it is necessary to leave the stakes two or three inches higher than the plants, as I have found them sometimes to require a second tie. If the roots at that time have found their way through the bottom of the pot, they must be broken off, or the plants will receive a severe check when finally removed. In re-plunging them, give them sufficient room to prevent their being drawn. They will require little more attention, besides giving plenty of air, watering, and shading, till the middle of May, when they will be in good condition for removing to the conservatory.

The next sowing will require to be made about the beginning of April. The same compost as previously recommended should be used. For this sowing, however, I would prefer 32-sized pots, and would allow seven plants to remain in each: by thus having a greater body of soil, it will be found to retain moisture for a greater length of time, and the plants will not be so liable to receive any check by an accidental omission of watering. In other respects, the treatment already detailed should be followed. By the middle of May, if the frames should be wanted for other purposes, the pots may be plunged in some shady place out of doors. They will come into bloom about the beginning of July. Other successional sowings should be made about the beginning of June and the beginning of August. These may be plunged in a sheltered spot out of doors; and, with attention to watering, thinning, and tying up, as previously directed, they will come into bloom respectively about the middle of August and the end of October. The latter of these sowings must be removed to a frame as soon as danger from frosts may be apprehended.

The next sowing, which is to provide plants for blooming through the winter months, must be made about the middle of September. A little more attention is necessary at this season of the year, in order to prevent them from damping off, and also to secure as much of the sun's rays as possible. The soil I would recommend for this sowing consists of three parts of loam, one part of dung, and one part of leaf-mould. My reason for

using more loam at this season is, because the compost then retains moisture longer than if a less proportion were employed; and thus the necessity of frequent applications of water is in great measure done away. In dull weather, mignonette is very impatient of water; and, when it is applied, it should be done in the morning, in order that the foliage may become dry before night. For this sowing I would use 48-sized pots, giving them a good drainage.

In preparing the frame for their reception, it should be raised behind, so as to give it a good inclination towards the south, for the purpose of gaining the full benefit of the sun, and also of preventing drips, which are very injurious, as the plants seldom recover from checks occasioned by their becoming very wet. The bottom of the frame should be covered with brick rubbish, and over this there should be a stratum of rough coal ashes, and again, on the top, 6 inches of finely sifted ashes. This must be arranged so that, when the pots are plunged, they may not be more than 9 inches from the glass. When the seeds are vegetated, give as much air as possible; and by attention the plants will begin to flower about the beginning of December, and keep in good condition for three months.

The final sowing should be made about the beginning of October; using the same sort of soil and pots, preparing the frame in the same manner as directed for the preceding, and taking great care in the watering and thinning. By the beginning of March the plants will commence flowering.

When frost sets in, cover the glass with mats and loose hay, taking them off on every favourable opportunity, as the young plants, when excluded too long a time from the light, will turn yellow, and damp off. I would also lay some long litter around the frame, to prevent the frost from penetrating through the sides.

It may be well to mention that, in thinning, the plants ought to be left as nearly of an equal size as possible in each pot, retaining the largest in some, and the smallest in others. This will give a longer succession of bloom: and, if at any time one sowing is likely to be over before the next is ready, pinch out the tops of a few of them when they are beginning to flower; this will cause them to break out again, and bloom three weeks or a month later than the others of the same sowing.

The cultivation of mignonette in boxes differs so little from that in pots, and boxes being seldom used except to stand in particular situations out of doors, it is unnecessary to say much on that head ; but, when they are used, the same sort of soil that has been recommended for summer use will suit them very well. I would, however, prefer to grow it in pots till it begins to flower, and afterwards to plant it into the boxes, where it will continue to branch out and flower for a long time. When it has done blooming, these may (if wanted) be filled again in the same manner, and thus a constant succession will be kept up.

Cambridge-House Garden, Twickenham,

May 21. 1844.

ON THE CULTURE OF ACHIMENES COCCINEA.

By Mr. D. WATT.

ACHIMENES coccinea of Persoon (*Trevirana coccinea Willdenow*, and *Cyrilla pulchella L' Heritier*) is a very pretty little perennial plant, which, I believe, was introduced to our gardens in the year 1778 ; and, although it has been so long under cultivation, yet I fully believe it has rarely been grown to that perfection it will attain under careful management.

The first thing which ought to be considered in the cultivation of this plant is to procure strong tubers ; and the best way to insure these is, to keep the plants which are intended to furnish them for the next year's growth, in as vigorous a condition as possible : this can be done by allowing them plenty of pot room, and an abundant supply of water, and by continually removing the flowers as they make their appearance. The plants will continue growing during the early part of the autumn, in a close frame, after which they must be removed from thence into a dry stove or warm greenhouse, and the supply of water reduced by degrees, so as to get the roots well ripened ; after that is effected, they must be turned out of the pots, carefully removed from the soil, intermixed with dry sand, and put in brown paper bags : they can be kept in any dry situation, if protected from frost. The tubers produced by plants that are allowed to flower throughout the season, are not more than half

the size of those produced by plants that are thus not allowed to flower at all.

When I commenced cultivating this plant, I had only three dozen of the small imbricated tubers, which I potted into two 48-sized pots, in a compost of two parts leaf-mould, one part turfy loam, and one part silver sand, with a little soot added to destroy the worms then in the soil : they were covered about half an inch with equal parts of leaf-mould and sand, and then placed in a propagating-frame, on a bottom heat of between 80° and 85°. When the plants had attained the height of 4 inches, which was about the third week in April, they were potted in patches of three or four plants into 60-sized pots, using the compost I have before recommended ; and they were then placed on a bottom heat of between 85° and 90°. The atmosphere of the frame was not allowed to fall below 60° during the night, nor to rise above 90° during the day ; the latter was secured by the admission of air, and temporary shading from the scorching rays of the mid-day sun. The plants were shifted as often as they required, until they were finally put, some into 32-sized, and some into 24-sized pots. The plants in these pots averaged 3½ feet in circumference, and 20 inches in height ; those in the 32-sized pots were about the same size, but they required a greater supply of water, and also shed their flowers sooner than the others. Great caution is requisite in the watering of these plants, and on proper attention in this respect I think the success greatly depends. My practice was to look over the plants every afternoon, about an hour before the sun left the frame, and water those which required it, at the root ; the plants were then sprinkled over with water from a very fine syringe, and the lights shut down quite close, in which state they remained until about ten o'clock, when a small quantity of air was given : this must be regulated according to the situation of the frame, the state of the bed, and the weather. I object to watering in the early part of the day ; for I have observed that, after evening watering, moisture, having the appearance of very fine dew, is deposited on the leaves ; and this, which is not observed when morning watering is practised, I am convinced, assists materially in feeding the plants. I have frequently observed that, when this dew was in any way washed off in the morning, the plants would look languid through the day, and were much easier injured by the sun.

Such is the treatment the plants under my charge were subjected to. The method may appear troublesome; but I am convinced, that if those who have a desire to see this very interesting little plant in perfection, were to adopt the method of cultivation that I have recommended, they would be satisfied with the result.

*Buckingham Palace Garden,
August, 1844.*

A FRAGMENT ON THE GRASSES ADAPTED FOR CULTIVATION AS FLOWERS.

BY MR. T. MOORE.

THE natural order *Gramineæ* is one of the most extensive and useful in the whole vegetable kingdom; and containing, as it does, some species of noble and majestic habit, and others possessed of no ordinary degree of grace, elegance, and real beauty, it has peculiar claims on our consideration. Grasses are too often passed over in consequence of the plebeian rank assigned to them in the vegetable world; and feelings of something like contempt may frequently be discerned when their intrinsic beauty is spoken of. Without doubt in this, as in all extensive natural families, there are some members which possess but little attraction, and others which are decidedly insignificant; but setting these aside in the present consideration, there are others which may be spoken of as yielding in no respect to any of our more universal favourites in true and simple elegance.

I shall take occasion to mention a few kinds which are quite worthy of being cultivated in flower-gardens, on account of these good qualities, which have been just referred to; and although the list must not be regarded as containing all, or even the most beautiful plants of this family, yet it may be sufficient to excite an interest in the subject, and to elicit some remarks from the members present. Of course the list might be immeasurably lengthened if any botanical consideration were to be superadded as a reason for their cultivation.

Annuals.

Lagurus ovatus	-	-	Flowers in	May
Polypogon monspeliensis	-	—		July
Gastridium lendigerum	-	—		—
Airopsis pulchella	-	-	—	June
Agrostis Spica-venti	-	-	—	—
Briza maxima	-	-	—	—
minor	-	-	—	July
Aira caryophyllea	-	-	—	June
Sorghum rubens	-	-	—	July

Not one of these require either peculiar care or soil in their cultivation; and all of them possess considerable beauty. *Sorghum* attains a considerable height and size, but gives a tropical *contour* to the assemblage of which it is made to form a part; the others are for the most part smaller in their growth. The most convenient way of growing them would be to sow the seeds in pots, and place them in a cold frame until they are vegetated, and then plant them out at convenience. They are not so tender as to require this nursing, but it will often be found to be the most convenient and manageable plan which can be adopted, The treatment given to hardy annuals would of course be applicable to these, if that were preferred.

Perennials.

Stipa pennata	-	-	Flowers in	July
Trisetum flavescens	-	-	—	June
Arundo Calamagrostis	-	-	—	July
Donax	-	-	—	—
Degraphis arundinacca	-	-	—	July
— var. picta	-	-	—	—
Deschampsia cæspitosa	-	-	—	June
Briza media	-	-	—	May

These require nothing beyond the ordinary treatment of herbaceous plants. The *Arundo* and *Degraphis*, with many others of similar habitude, are well adapted for such situations as the margins of lakes and water courses.

Perhaps a considerable portion of the beauty of these plants,

if introduced to flower-garden scenery, would depend on their being constantly attended in the removal of the decaying portions as soon as they have passed their meridian; and also in carefully affording them support against rough winds and storms, sufficient only to prevent them from being beaten down and broken.

May 30. 1844.

LIST OF NEW PLANTS.

ORCHIDÆÆ. — *Gynandria Monandria*.

Epidendrum radiatum. Allied to both *E. cochleatum* and *lanceifolium*. This pretty species is distinctly known by the round form and crisp margin of its lip, which moreover is almost notched out in the middle, and very delicately streaked with purple. Its petals too are both shorter and broader than in either of those two species. Its habit is precisely theirs; and the three, considering their constant flowering and very neat appearance, deserve a place in all collections. Besides, this species smells deliciously of cinnamon. It is a native of Mexico. — *Bot. Reg.*

LASIOPEALEÆ. — *Pentandria Monogynia*.

Corethrostylis bracteata. A greenhouse shrub from Swan River, producing long loose clusters of small pink and crimson flowers, the most remarkable part of which is the singular hairy style. It flowered last spring with Mr. Groom of the Clapham Nursery. The treatment should be assimilated with that of Cape heaths. — *Bot. Reg.*

GESNERACEÆ. — *Didynamia Angiospermia*.

Gloxinia speciosa. Four varieties raised by Mr. Carton, gardener to the Duke of Northumberland at Syon, from *G. speciosa rubra* fertilised with the pollen of *Sinningia guttata*.

1. *Magnifica*. Deep pink, with a pure white throat.
2. *Insignis*. Tube deep pink, limb white, the upper segments being shaded and veined with the colour of the tube, bluish throat.
3. *Bicolor*. Brilliant bluish purple flower, the upper segments of the limb being edged with white, light throat.
4. *Cartoni*. Large pink flower, of great substance, the margin of the limb and throat white.

The flowers give little evidence of the male parent, although the branching habit which distinguishes Nos. 1. 2. and 4. are proofs of their alliance to *Sinningia*, particularly that of *magnifica*, which has very hairy leaves and stems, and an erect growth. — *Bot. Reg.*

ORCHIDÆÆ. — *Gynandria Monandria*.

Lacæna bicolor. This fine plant was sent to the Horticultural Society, from Guatemala, by Mr. Hartweg; it produced its flowers in May, 1843, and ever since has been in such bad health that it is doubtful if it will survive. The flowers of this plant are formed in a pendulous raceme, as much as eighteen inches long; the lower part being clothed with distant short blunt

scales, which extend into bracts about half the length of the pedicles. Each raceme consists of nine or ten flowers, of a dull greenish yellow, covered externally with short hairs; their petals have three streaks of violet; their lip is downy all over the upper surface, dark purple in the middle, with two or three spots of the same colour near the point. In the centre of the lower half is a large shaggy hump. Altogether the plant bears a near resemblance to the pendent-flowering species of *Peristeria*. — *Bot. Reg.*

PROTEACEÆ. — *Tetrandria Monogynia.*

Lomatia tinctoria. A native of Van Diemen's Land, and introduced thence by the late Mr. A. Cunningham to the Royal Gardens at Kew. The plant has variable pinnatifid or bipinnatifid leaves, and the upper part of the stem runs out into a long raceme of curious sulphur-coloured flowers tipped with green, especially in the bud. The specific name was given by M. Labillardière, in consequence of the rose-coloured dye produced by the mealy dust which clothes the seeds, when infused in water. — *Bot. Mag.*

BYTTNERIACEÆ. — *Pentandria Monogynia.*

Thomasia stipulacea. A small bushy shrub from New Holland, sent by Mr. Drummond to the Royal Botanic Gardens, Kew. The leaves are large, irregularly heart-shaped; and the flowers, which are borne on a short raceme, are large and pretty, of a pinkish purple shade. — *Bot. Mag.*

ORCHIDEÆ. — *Gynandria Monandria.*

Lepanthes sanguinea. A native of the high mountains of Jamaica, whence it was sent to Kew by Mr. Purdie. It is rather a botanical curiosity than a florist's plant, and forms a striking contrast with the majority of orchideous epiphytes, both plant and flowers being very minute, the former scarcely more than an inch high, growing in tufts among moss, on trunks of trees, in its native regions. The flowers, though small, are of a beautiful purplish blood colour. — *Bot. Mag.*

ACANTHACEÆ. — *Didynamia Angiospermia.*

Barleria flava, syn. *Justicia flava*, *Dianthera flava*. A very little known plant, as it would appear, and to which other synonymes might perhaps be added. It is a native of Arabia, and has been long cultivated in the stoves at the Botanic Gardens at Kew, where it flowers in the winter months, and makes a very pretty appearance with its bright yellow flowers among the large calyces and bracts. — *Bot. Mag.*

LEGUMINOSÆ. — *Decandria Monogynia.*

Gastrolobium spinosum. Till the development of flowers in the spring of the present year afforded a chance of referring it with certainty to its proper station, this plant was cultivated and generally known as *Chorozema oppositifolia*, a mistake which most probably arose from the analogy displayed in its general features to those of the stronger-growing and larger-foliaged species of that genus. Seeds of it were imported from the Swan River colony, and distributed by Captain Mangles a few years since; and Mr. Young of the Epsom Nursery was fortunate enough to raise a number of specimens, which have been since multiplied and widely distributed. The plant is one which readily admits of being reduced to handsome proportions; has a neat habit and foliage; and produces copiously its terminal clusters of pea-shaped flowers, having an orange yellow vexillum and reddish purple wings. — *Par. Mag. Bot.*

LABIATÆ. — *Decandria Monogynia.*

Salvia prunelloides. A small blue-flowering sage, of medium habit and foliage, which seems peculiarly well suited for flower-gardening purposes,

being quite hardy, of quick growth, and an abundant bloomer, not rising more than a foot in height. We believe the merit of raising and flowering the first plants in this country is due to Mr. Moyes of Durdham Down Nursery, Bristol, who received roots from Mexico. Humboldt and Bonpland met with it on the volcanic mountain of Jorullo, where it grows in rocky situations; it has also been found in New Spain by Mocino and Sesse, and in various parts of Mexico by different individuals. — *Pax. Mag. Bot.*

TO CORRESPONDENTS.

F. H. HARVEY. — The general management of *Gesnerias* may be resolved into a period of excitement and active growth and one of decided dormancy; the latter commences about the present time, the plant itself indicating the exact period by ceasing to produce flowers. As soon as this is observed water should be gradually withheld, so that in about a month the earth in which it has been growing may be quite dry, and the tuber at rest: in this state it may be preserved through the winter on a dry shelf in the greenhouse, or turned out of the mould and kept in any situation secure from frost and moisture. About the middle of February is the beginning of the active season: a hotbed or tan-pit, having a bottom heat of about 75°, is the most appropriate place in which to plunge them after being fresh potted; here they may continue until May or June, or even till they bloom, unless the space is required for other purposes, when they should be removed to the plant stove or a warm part of the greenhouse to produce their flowers. The soil they delight in is a mixture of fibrous peat or heath-soil and well-decayed leaf-mould, in equal quantities, or leaf-mould alone, kept porous by a sufficient proportion of sand and small stones. A free drainage and a liberal supply of water, both to the roots and foliage while growing, are essential to the production of fine plants. This treatment applies equally to them all. *G. tubiflora* seems to require stopping (pinching the ends of the shoots off) once or twice during the early stages of its growth, in order to induce a more compact form.—We must apologise for the omission last month, but cannot conceive how the mistake occurred.

Mr. HAMP's seedling *Petunia*, "Inimitable," presents a very desirable feature in the colours of this favourite flower: the ground-colour is deep flesh, margined broadly with brilliant crimson lake. This is permanent, being equally strong in new or old flowers. The eye is very large, richly pencilled with marone. The form of the petal detracts from the merit of the flower by being somewhat pointed.

A SUBSCRIBER. — The seeds of *Gesneria Suttonii* require to be sown in February. Drain well an ordinary seed-pan, and fill up two thirds of it with peat broken into small lumps, leaving the interstices open; on the top of this spread about half an inch of finely sifted peat and silver sand in equal quantities. Press the surface closely and evenly all over, and strew the seed on it, without covering; sprinkle a little water from the hairs of a brush over the whole, and place the pan in a stove or frame having an average temperature of 65°. It will require to be kept constantly moist by the means employed at the first watering.

T. N. — Cuttings of *Verbenas*, if well rooted, are more easily, maintained in health through the winter than layers, the latter seldom having time to become established before the dull weather occurs.

T. C——N. — We really cannot promise to figure your seedling, although a fine thing; we are completely inundated with subjects already, which it will be impossible to publish in the required time, unless we increase the size of the work, and give two plates monthly.

A TYRO. — Yes. Grafting of all kinds may be done now with success equal to the spring months, though little or no difference will be observable in the growth of the scion through the next season.

MR. FOWLE'S seedling *Antirrhinums* are a great acquisition. We are glad to remark the attention this beautiful and useful family is at last receiving. *Lutea* is a fine, large, brilliant yellow flower. *Maculata*, white ground, covered with minute crimson spots, fine lip; a very beautiful variety. *Fowlii*, white tube, upper and lower divisions of the limb reddish purple, large chrome yellow lip; this reminds us of the old bicolor, only it is much larger and of a different colour. *Striata magna*, a decided improvement on the old striata. *Brightii*, dark reddish crimson, seemingly derived from quadricolor; a bold well formed flower. Altogether a very beautiful and distinct lot.

MR. J. SMITH, Dalston. — Your seedling *Fuchsia* Magnet is a fine large flower, long bright vermilion red tube and sepals, with a large pale bluish purple corolla. No. $\frac{23}{33}$: very large thick deep vermilion tube and sepals, and red corolla; a desirable variety.

MR. MILLER'S *Fuchsia* 240: tube and sepals bright carmine, very thick; the corolla of extra substance and size, crimson purple; a large fine flower. No. 217.: the sepals of this flower reflex so as to show the corolla to advantage, but they are not so stout or so broad as in the other, colour some shades paler; the petals are broad and expansive, but wanting substance, colour pale purple.

The seedling *Fuchsia* "Vuurberg," from Mr. FOWLE, is an excellent variety of large size, and thoroughly devoid of coarseness; tube nearly white; pale rosy sepals slightly tipped with green, beautifully contrasted with the large stout brilliant flame-coloured corolla; it appears to be a free bloomer, and of excellent habit.

"Flamingo" seems to have been obtained from tricolor; it is much larger, with a deeper rose-coloured tube and sepals, and bright red corolla; free bloomer and good habit; a desirable kind.

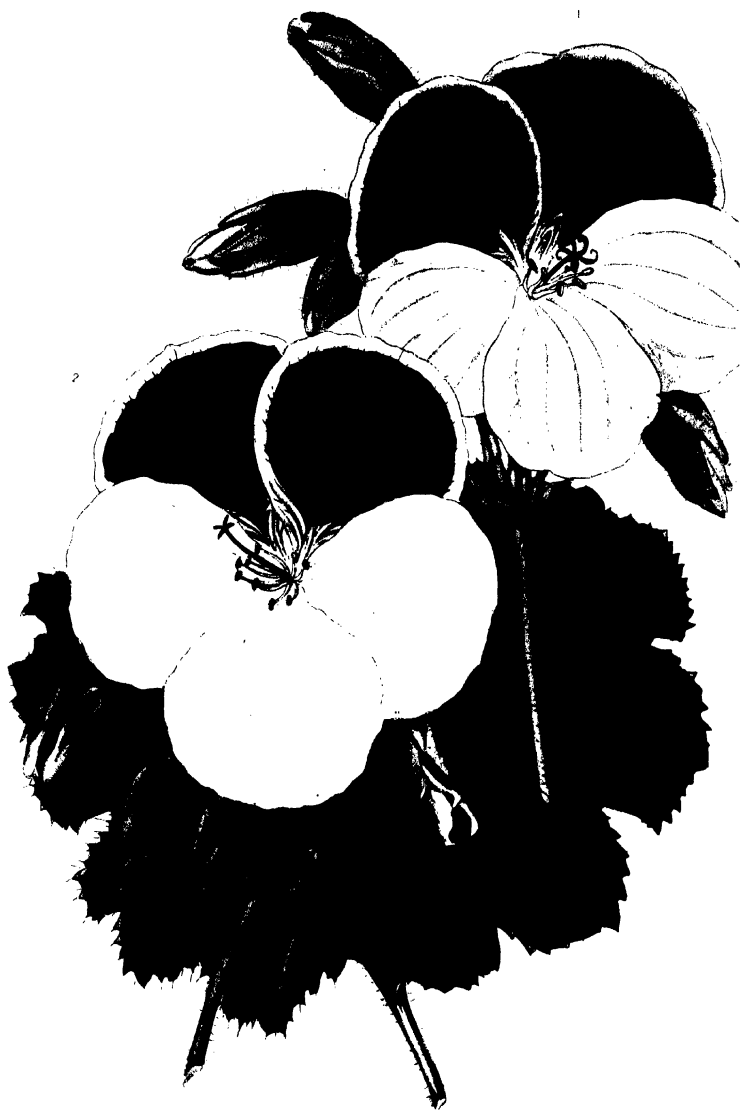
CALENDAR FOR OCTOBER.

PLANT STOVE. The remarks made last month will apply with equal force for the present month, and we therefore recommend their reperusal. The temperature should range from 65° to 70° by day, according as the weather is clear or dull; and by night it should not exceed 60°. Flowering shrubs and other plants, intended for forcing during the winter, should be brought to a state of perfect rest previously to their being excited into growth. The application of heat to such plants, for such purposes, should always be gradual and progressive.

GREENHOUSE. Here also we refer to last month's directions. The treatment required in this structure may be summed up briefly, thus:—Avoid a heated and damp atmosphere; admit light fully, and as much air as is consistent with the avoidance of an *extreme absence* of heat. The summer-bedding plants, preserved during winter on shelves in the greenhouse near the glass, and also in pits, should at this season be kept as perfectly *quiet* as possible.

FLOWER-GARDEN. There is much to be done here, if all is done that should be. There will be the removal of large plants required for spring propagation, early in the month, before injured by frost; and there will be the temporary protection of such plants as it is possible to preserve over the first autumnal frosts. Annuals and other plants past blooming will need to be removed, in order to the planting of bulbs for spring flowering. For our own parts we greatly prefer planting these bulbs in pots under partial protection, and filling the beds, too, with pots in which small shrubs have been planted: this relieves the flower-garden of much dreariness of aspect; and the bulbs are easily introduced immediately after the severe frosts of mid-winter are past, from which time they may be protected without much inconvenience. Perennial hardy herbaceous plants generally may be transplanted now; and large patches should be severely reduced. Many of the bulbous and tuberous rooted plants may be planted out, if the weather is favourable, as soon as the ground is cleared and properly prepared. Dwarf blooming plants of *Chrysanthemum* may be obtained by taking cuttings from the ends of the shoots now showing bloom, and putting them singly into small pots, and striking them in a frame with a mild bottom heat. Choice herbaceous plants in pots, including auriculas, carnations, picotees, pansies, and alpine plants, should be prevented from receiving too much water, either naturally or artificially: this, more than any other thing, will tend to their safety through the winter. An early opportunity should be taken of deciding on the arrangement of the flowers intended to be planted for spring ornament, with reference to their effect when in blossom; and next summer will not be less readily welcomed, in consequence of floral arrangements for that season having been concerted now, whilst there is leisure to have them well matured.

T. M.



LYNE'S PRINCESS ALICE 2 LYNE'S WHITE PERFECT

THE
FLORIST'S JOURNAL.

NOVEMBER, 1844.

PELARGONIUMS.

LYNE'S PRINCESS ALICE AND LYNE'S WHITE PERFECTION.

THE Pelargoniums represented in the accompanying plate are selected from a quantity of seedlings raised by P. E. Lyne, Esq., of Lipson, near Plymouth, in 1843. They have been exhibited several times during that and the present season, and have received very general admiration. The following descriptive account is sent us by Mr. W. Rendle, nurseryman, of Plymouth, who has the stock of these and other seedlings of Mr. Lyne's raising for sale.

Princess Alice. A well-formed flower of remarkably clear and bright colours, under petals, bright salmon pink; the upper petals have a large, rich, dark velvet blotch, gradually changing through bright crimson to a narrow margin of rosy vermilion, which remains quite distinct. It was exhibited at the Chiswick Fête, June 17th, 1843, and was then awarded a seedling prize; and also at the June Meeting of the Floricultural Society of London, where it received another seedling prize. The habit of the plant is very dwarf, and it is a free trusser.

White Perfection. Under petals broad and well formed, of the purest white; rich plum-coloured spot, with a distinct marginal line of pure white; excellent habit, and a most abundant bloomer. This flower is indispensable in a good collection, it being by far the best white at present known. It received the first seedling prize at Torquay, June 1843, and the gold medal at Plymouth, May 30. 1844.

ROSES IN POTS.

WHEN the cultivation of roses in pots was first proposed and prizes offered for them by the Horticultural Society of London, it created quite a "sensation" among the cultivators of this favourite flower: some decried the system altogether, while others contented themselves with a silent and intended significant shake of the head, enshrouding their opinions in the most delightful obscurity, that, like a riddle, they might be guessed at; yet a few there were who at once bestirred themselves, entered on the subject with an earnestness that would not admit of defeat, and produced the first season plants that were the wonder and admiration of all who saw them; still with this, as with all new systems, there were and are yet difficulties that stand in the way of the beginner, that only experience or an intimate knowledge of principles can obviate. To remove some of these obstacles we offered a prize for an article on the Management of Roses in Pots, which produced the very able treatise from the pen of our respected friend and correspondent Mr. T. Moore, which appeared in our last Volume.

Very lately another has been given to the public by Mr. W. Paul, nurseryman, of Cheshunt, Herts*, well known to the horticultural world as an eminent grower of roses. This little work may be called the Handbook of Pot Roses: it contains a great deal of matter relative to their management throughout the various phases of their progress from the first potting to the production of flowers; besides a selected and descriptive list of the most appropriate kinds. We extract the following remarks on the

"Advantages of growing the tender Kinds in Pots. There are many advantages when plants are grown in pots of which we are not able to avail ourselves when they are growing in the open ground. With regard to the tender varieties of roses these are very great, if we only take into consideration the facilities afforded of protecting them from heavy rains and frosts by means of pits; and it is not surprising to find they thrive so much better under glass than when exposed to all the

* Sherwood & Co., Paternoster Row.

changes and severities of the weather. Hitherto the Chinese and Tea-scented Roses have not been grown with much success in the immediate neighbourhood of London, nor in the North of England, when planted in the open ground. It is notorious that no collection however small can be complete without some portion of these roses; and it is the vexatious disappointment alone, attendant on their constant failure, that could have caused their growth in certain localities to have been given up. Doubtless, in some instances, an impure atmosphere may have caused the failing; but I humbly suggest whether, if carefully examined, the soil and situation would not often propound the difficulty. The ease then with which we can remedy these disadvantages, when the plants are grown in pots, leads me to propose their cultivation in this way to those with whom they have not hitherto succeeded: and there is good ground to believe they will succeed well in this way, and especially if grown under glass. Except for forcing, cold pits are perhaps preferable to a house, where they should be kept close to the glass, and plenty of air given. They should have the advantage of dews and soft showers — the lights in summer being merely used to protect them from cold nights and rough weather, and by help of mats or canvass from a hot sun.

“ *Transplanting and Potting.* Early in autumn, immediately after rain, is the most favourable time to remove both worked plants and others from the ground, and such as have grown moderately with well-ripened wood should be chosen. The sized pots best suited are Nos. 32. 24. 16. and 12., according to the size of the plants; and they should be well drained. In potting, the soil should be pressed firmly in the pots, watering freely afterwards, through a fine rose, to settle the soil about their roots. The cultivation of the autumnals on their own roots may be commenced at any time, as they are usually kept growing in pots. If purchased in spring, in 60-sized pots, they may be immediately shifted into 48s, then plunged, and watered continually, as required.

“ *Our aim being to get the plants strong, they should not be suffered to flower;* and we should endeavour through the growing season to bring them to form a few vigorous shoots in preference to a greater number of weak ones. To accomplish this it is advisable to rub out some of the buds when first pushed,

keeping in view the handsome formation of the plant. The plants may be shifted on through the season, and in the following season we shall probably find them in 16 or 12-sized pots preparing for a vigorous growth and bloom.

“*Soil.* The soil in which I have them succeed well and have generally used, is two parts fresh turfy loam broken up, but not sifted; two parts manure (road gatherings laid by for a season, or the remains of a hotbed not too far decomposed); and one part burnt earth. This compost should be thrown up in a heap in autumn, and turned two or three times during winter, and a little newly slaked lime scattered throughout to destroy worms and grubs. This is the soil used for the mass; but for the delicate varieties (Chinese, &c.) it may be improved by the addition of one part leaf-mould or well pulverised manure.

“*Pruning.* About the middle of November pruning may be performed, in order to effect an early bloom. It is a difficult matter to lay down any precise rules with regard to pruning; upon the judicious adaptation of which depends not only the well-forming of the plant, but, in a great measure, the perfection of bloom also. In order to prune roses with certainty of success, we ought to know the character of each plant we are about to operate on, for roses of the same class oftentimes require very different pruning. The best criterion we can offer is, perhaps, habit of growth. Among the Hybrid Chinese, the two favourite old roses *Brennus* and *Fulgens*, both vigorous growers, frequently occasion great disappointment by not blooming. The failure will probably be found to arise from the method of pruning. These roses and others of like habit should be well thinned out, but the shoots which are left for flowering shortened but little. Others of the same class (Hybrid Chinese), that are weak growers, may be shortened in close, such as *General Allard* and *Lady Stuart*. There are also varieties of intermediate growth which may be pruned in proportion. The classes *Gallica*, *Provence*, and *Moss* may be pruned closer than the Hybrid Chinese. The autumnal roses there is but little fear of pruning out of bloom; early or late they are sure to flower. One point, too, should be in mind, that roses, when grown in pots, may be pruned closer than when grown in the open garden.”

We may probably return to this book of Mr. Paul's.

EDITOR.

DESCRIPTIVE NOTES ON A FEW SELECT
CARNATIONS AND PICOTEES.

SIR,—In accordance with your wishes, I send you a few notes on Carnations and Picotees, which may perhaps be useful to some of your readers, as this is the season for procuring plants to bloom next summer.

SCARLET BIZARRES.

The *furor* that was excited by *Twichett's Don John* a couple of years ago, has subsided, and notwithstanding that the raiser has obtained all the prizes in its class within this year at Cambridge, I consider it a very uncertain flower, having seen many blooms of it this year, and hardly one perfect one. Shading does not suit it, for then the petals do not expand sufficiently; and if in the sun, its very brilliant colour is apt to run. It is, however, a variety worth possessing, and may perhaps get more steady as it grows older.

Martin's Splendid, in colour a rich brownish scarlet, deserves the name; but its growth is very bad, not rising more than 18 inches in the flower stem, and the foliage scanty and dwarf. Hence perhaps it maintains its high price longer than other varieties.

Ely's Lord Pollington. Pod good, colour good also, and, like all of Ely's flowers, opens well and flat.

Smith's Duke of Wellington. A large bright-coloured flower, pod good, luxuriant in its growth, and a very desirable variety.

To these may be added, Ramsforth's Game Boy, and Fletcher's Duke of Devonshire.

CRIMSON BIZARRES.

Puxley's Prince Albert. An uncertain flower, rather faint in colour, but large, and a desirable variety, though eclipsed, I think, by that fine old variety,

Cartwright's Rainbow. A good flower, bright in colour, but rather hard to grow well.

Wood's William IV. I have had blooms on this root, which I have not seen equalled by any other. The guard petals are

large, round, and well shaped; the stripes good, the white clean, and altogether it is with me a favourite flower.

Gregory's King Alfred, Holmes' Count Paulini, and Ely's Lord Milton, will complete a very good half dozen.

PURPLE FLAKES.

In this, as well as in the other classes of flakes, I cannot speak from actual examination, not growing many; but the following may be relied on.

Ely's Mango. This I grow; it is a fine, richly coloured, well-podded flower; but comes very early into bloom, and it will require some skill to keep it back for its fellows.

Leighton's Bellerophon. This I grow also; an old variety, but very good. It was in the winning stand at "The Coppice" this year.

Brabbin's Squire Meynell, ex. ex.

Mansley's Beauty of Woodhouse. A very fine flower; can hardly be beaten in its class.

Pollard's First Rate, is first-rate, and with *Sharp's Esther,* will complete a half dozen that cannot be beaten.

SCARLET FLAKES.

Six good ones. Chadwick's Brilliant, Bucknall's Ulysses, Addenbrook's Lydia (old but good), Wilson's William IV., Wigg's Earl of Leicester, and Toone's Ringleader.

ROSE FLAKES.

Ely's Lovely Anne, Ely's Lady Ely, Brook's Flora's Garland, Greasley's Village Maid, Tomlyne's Briseis, and Wilson's Harriet.

PICOTEES.

Here I can better give my opinion, as they are greater favourites with me than carnations; and any observations I may make on them may be relied on, as far as they go, for they are unprejudiced, here (Dublin) there is no contention about midland, northern, or southern flowers. We pick and cull from all; and while we think some of the Lancashire flowers absurdly thin, we do not deny but that many of the London flowers have too much stuff. Beautiful flowers, no doubt, come from both places, and I trust they will yet outdo all they have

effected, great as that undoubtedly is, not that I agree with a taste too prevalent here of classing large-sized flowers first. Shape I consider a far greater point — large, well-formed, guard leaves, and the others imbricated regularly on them, with a good crown.

HEAVY-EDGED, RED.

Barraud's Cornelius. Undoubtedly a noble flower. The edging is very high-coloured, a brilliant red; the petals large and well shaped, the white pure, and the colour keeping well to the edge. The habit of the plant is good; but, to my taste, the flower is a *little* too thin, as it does not crown well: still it is a very fine flower, and indispensable to a grower of this lovely tribe.

Brook's Duchess of Cambridge. A pretty flower, novel in colour, a bright red, white good, opens well, and altogether a neat flower.

Gidden's Sir R. Peel. A very striking flower, the colour an intense red, almost black. The habit of the plant is not good, nor do I think it a first rate flower, though worth growing for contrast's sake.

Brinklow's Masterpiece. Mr. Dickson, of Brixton, the eminent grower of carnations and picotees (to whom I would recommend all persons desirous of being well treated, and liberally and fairly dealt with, as they are sure of having fine, strong, healthy plants true to name, and every advantage given them), says in this year's catalogue, as published in the *Gardener's Gazette*, that this variety is the same as Gidden's Teazer. I cannot think he is right. Teazer has always been here a difficult plant to grow, whereas Masterpiece is a very free grower. The colour of the latter, too, is higher, and the flower fuller. I may be wrong, but this is my view of the matter.

Sharpe's Duke of Wellington, were it not for its pudding-shaped pod, which makes it very liable to burst, this would be the best heavy red out, as it is, if caught, a very pretty flower, round in its shape, good in its colour, and deserving a place in any collection.

Mitchell's *alias* Mansley's *Nulli secundus*, a northern flower, consequently thin, but deserving of its name, possessing as it does, all that constitutes a first-rate show flower; white good, edging heavy and well defined, and the shape excellent. A

few more petals would be decidedly an advantage and improvement, but altogether it is really *Nulli secundus*.

Sharpe's Invincible. Another ex. ex. flower, with more stuff than the last-named. Though perhaps not quite equalling it in other respects, still a desirable variety.

PURPLE-EDGED, LIGHT.

Brinklow's Purple Perfection. A first-rate flower. Mr. Dickson says, the best in its class, and he is no mean authority. The pod is rather short, but the flower altogether is a first-rater.

Brinklow's Lady Chesterfield. A very pretty flower; the edging very light and delicate, the white pure, and shape good. Its habit is rather delicate, but a most desirable variety in other respects.

Gidden's Vespasian. Another most excellent flower, deserving of a place in the smallest collection, possessing nearly every property of a first-rate flower.

John's Prince Albert. Decidedly, to my taste, the best in its class I have yet seen. The edging is not very light, the shape is good, the white beautifully pure — habit good, and altogether a superb flower.

Wilson's Pluperfect. An old flower, but a good one; the edging light and delicate, white good, rather difficult to increase, as its habit is not robust.

Wood's Lord Hinchinbrook. A good variety, well worth growing, pod good, white pure, shape ex.

ROSE-EDGED, HEAVY.

Green's Queen Victoria. This, and the two varieties next named, are most beautiful flowers possessing most of the qualities desired to constitute a first-rate flower. They are sorts that, no one who grows this (to my mind the most beautiful of all the classes of picotees) class, can possibly do without. The one first named is, however, decidedly the best of the lot, and nothing in the whole range of picotees can exceed a well-bloomed, clean-grown flower of Green's Queen Victoria.

Kirtland's Squire Annesley. Another most beautiful flower; its growth is its only fault, and that arising from its great luxuriance.

Lovegrove's Seedling, No. 5. Another fine flower, apt to burst its pod; but if this is watched, will well repay any care bestowed on it.

Twitchett's Fair Rosamond. A fine flower, wants a few more small petals to make a better crown; but, with all this, it is a sweet variety.

Wilson's Miss Fanny Irby. A pretty scarlet-edged flower, raised by the Hon. and Rev. Robert Wilson, raiser of Harriet, Pluperfect, &c.

Syhes' Eliza. A fine flower, old, but possessed of qualities deserving of its being continued as a favourite. Well and judiciously opened, it is equal to any of the reds in cultivation, being a large, full, and well-shaped flower.

Wildman's Isabella. A very splendid flower, the colour a bright cherry-red, the white most pure, the petals large and well shaped, not too full, opens well, and is most distinct. A variety that ought to be grown in every collection.

Orson's Adelaide and *Jessop's Sir William Middleton*, I do not know, though they have been in the winning stands about London this year; so suppose they must be good.

LIGHT-EDGED, RED.

Brinklow's Duchess. A tolerably good flower, but with a disposition to bar, and I hope the day is not far off when we shall get flowers that keep their colour well to the edge. As flowers go now, this is an acquisition to any collection.

Burrough's Joan of Arc. A large, full, good-looking flower, not exactly a first rate show flower, the edges not being quite even, still a variety that must please.

Burrough's Mrs. Bevan. A first rate show flower.

Kirtland's Duke of Wellington. Pod good, white clean, and the colour well confined to the edge; a first rate show flower, and, like most of this raiser's, has plenty of stuff.

Sharpe's Hector. Another good flower; the white is waxy, edging good, and the habit of the plant most luxuriant. Should be grown by every one who has even only a small collection.

Wood's Queen Victoria. An old variety; but, in my opinion, very superior to many now in cultivation. It possesses many of the properties of a first-rate flower, and I was glad to see it taking its place in the winning stands at the great Coppice show this year.

HEAVY-EDGED, PURPLE.

Crash's Queen Victoria. I put this first in this class; for, though rather thin, there are few, if any, that come up to it. The white is pure as snow, the purple good, and belts the edges well, not running down into the petals at all. Being a thinnish flower, it opens well too. The petals are large and well shaped, and in many points it cannot be excelled.

Dickson's Trip to Cambridge. A very fine variety; would be better if the guard leaves were larger; as it is, however, it is a very fine flower. There are other flowers sold under the name, so I would advise amateurs to go to head quarters for it — Dickson, Acre Lane, Brixton.

Gidden's Miss Hennell. A very tall young lady she must be, for the plant throws up a flower stem nearly 4 feet high, which is decidedly a disadvantage. The foliage is not pleasing, the flower is, however, a good one, not equal to the two already named, but still a good variety.

Kirtland's Princess Augusta. A flower in its growth the very opposite of the preceding, being more like a pink, so short and small is it. It is however a variety deserving attention.

LIGHT-EDGED ROSE.

Barnard's Mrs. Barnard. The finest light-edged rose in cultivation, the merits of this flower and its relative value to two other fine varieties *Dickson's Bride*, and *Lady Alice Peel*, are so well described in your August number that I will not record my own, as I believe those of your correspondent were true; there are some new flowers in this class, but I must confess to not having seen them, so my observations would be of no service.

Waine's Queen Victoria, a pretty flower, but has a pudding-shaped pod that prevents its opening well, but of those that I have seen, it is not the worst.

With these observations I now conclude; my time is so much occupied in my professional pursuits, that I have been unable to forward this before, and even now it goes forth in a crude and hasty form, wishing your excellent little periodical every success.

I am, Sir, your obedient Servant,

H. H. D.

Bray, Ireland, 1844.

ON THE RANUNCULUS.

SIR, — Being an ardent admirer, but rather unsuccessful cultivator of that lovely flower the Ranunculus, allow me to tender my best thanks to Clericus for his hint respecting the preparation of beds for them in the last Number of the Journal. I have at once acted on the advice, and my beds are now ready.

Here, however, I must beg to inquire, what is the difference supposed to exist in the employment of thoroughly decomposed or more recent manure? this inquiry is made, not in a spirit of controversy, but from a desire (like many others of your readers doubtless) to know which is best: Tyso and Lightbody both eminent growers, recommend the manure to be well rotted, while at Lockhart's, a grower of equal extent and standing, I have seen it applied in quite a new state, both cowdung and the ordinary stable litter. The difference may not appear of much moment to an experienced cultivator, who is aware of the probable effects of either form, and is consequently able to encourage or counteract as the case may require, but to a tyro it is at the least somewhat puzzling. I imagine a loss of the nutritive properties of the manure must occur while arriving at a decomposed state, before it is applied, which would be imparted to the soil if used fresh; however I am not writing to express my own opinion, but to solicit that of others.

T.—

LIST OF ORCHIDÆ.

(Continued from page 200.)

244. *Odontoglossum constrictum*. Plant pseudo-bulbous; bulbs 3 in. long, flattish, and of a shining pale green; leaves in pairs, 18 in. long and 1 in. broad; the flowers are produced on an upright spike. The plant requires pot cultivation in a mixture of turfy peat sphagnum and small potsherds, with a liberal watering during its growth. The temperature at that time should range from 60° to 70° or 75°; when at rest from 50° to 60°. — *Native of Guatemala.*

245. *Odontoglossum membranaceum*. Plant pseudo-bulbous; bulbs 2 in. long, tapering to the summit; its leaves are produced singly, 4 in. long, of a lanceolate acute form. The flowers are produced on a short slender spike. It may either be grown in pots, or on small billets of wood covered with sphagnum; if on the latter, a liberal supply of water will be required while growing, with the same temperature as the other. — *Native of Guatemala.*

246. *Odontoglossum Lindleyanum*. Plant pseudo-bulbous; bulbs 4 in. long, rather flat, and grooved a little; leaves in pairs, 1 ft. long and better than 1 in. broad. This plant, both in habit and manner of flowering, approaches closely to *O. constrictum*; it also requires the same treatment and temperature.— *I believe a Native of Mexico.*

247. *Odontoglossum maculatum*. Plant pseudo-bulbous; bulbs 3 in. long, and smooth; its leaves are produced singly, 9 in. long and 2 in. broad, of a pale green; the ribs of the leaf are longitudinal, and of a darker green. The flower spike is near a foot in length. It succeeds with the same treatment and temperature as recommended for the others.— *Native of Mexico.*

248. *Odontoglossum pulchellum*. Plant pseudo-bulbous; bulbs 2 in. long and 1 in. broad, tapering a little to the summit; leaves in pairs, 1 foot long and half an inch broad. The flowers are white, with a blotch of yellow in the throat of the labellum. They are produced on a spike about 1 ft. long. It requires the same temperature as the others.— *Native of Guatemala.*

249. *Odontoglossum citrosimum*. Plant pseudo-bulbous; bulbs 3 in. long and 2 in. broad, of a shining green; leaves dark green. The flowers are produced on a spike from 12 in. to 18 in. long, of a snow white, and pale rose colour, exhaling a delicate smell of lemons. The same treatment and temperature as the others.— *Native of Mexico.*

250. *Odontoglossum grande*. Plant pseudo-bulbous; bulbs 3 in. long and rather more than 2 in. broad; leaves in pairs, 8 in. long and about 2 in. broad, somewhat undulated; the flowers are produced on a spike, 18 in. to 20 in. in length; sepals 3 in. long, the ground colour pale yellowish green barred with brown; petals same length as the sepals, brown half the length from the base, where it joins the column, and the remaining part fine yellow; column deep yellow; labellum at the breast projecting outwards in the form of a tooth (from which circumstance the generic name is derived, tooth tongue), of a deep yellow with a few small blotches of brown, the remaining part of the labellum white, with a few blotches of pale brown. This also requires the same treatment and temperature.— *Native of Guatemala.*

251. *Odontoglossum Insleayanum*. The general aspect of this plant is very similar to *O. grande*, and it may also be treated in the same manner.— *Native of Oaxaca.*

252. *Odontoglossum Rossii*. This is of a dwarf habit, its pseudo-bulbs being only 1 in. long and the same broad, of a dark green; the leaves are solitary, 3 in. long and 1 in. broad. Its habit of flowering is the same as that of *O. membranaceum*. It should be grown on small billets of wood, covered with sphagnum, and receive a liberal supply of water while growing. Temperature the same as for the others.— *Native of Guatemala.*

253. *Odontoglossum leve*. Plant pseudo-bulbous; bulbs 5 in. long and 2 in. broad; leaves in pairs, 18 in. long and a little above 1 in. broad; the flowers are produced on a spike 2 ft. long; the sepals and petals are an inch in length and extremely narrow, the ground colour pale green banded across with brown; the column is pinkish white, and the labellum narrow, though upwards of an inch long, with a deep stain of purple at the base, where it joins the column, gradually diminishing to a pure white at the apex. It requires the treatment and temperature recommended for *O. constrictum*.— *Native of Guatemala.*

254. *Oncidium Suttonii*. Plant pseudo-bulbous; bulbs 2 in. long and rather more than an inch broad, tapering a little to the summit; leaves in twos and threes, but mostly the former, 1 ft. long and 1 in. broad; the

flowers are produced on a slender spike, 2 ft. long; sepals and petals brown, striped with yellow at the apex; column yellow; labellum yellow, blotched with brown in the breast, the crested part of the latter being white. It requires pot cultivation, in a mixture of equal parts of turfy peat and sphagnum, with a few small potsherds, and a moderate supply of water while growing, in a temperature of 60° to 70°; this should be reduced when at rest to 50° or 60°. — *Native of Guatemala.*

J. HENSHALL.

(*To be continued.*)

THE WARDIAN CASE.

WE are asked by a correspondent (Mr. C. Runcy, of Aberdeen) to describe this useful adjunct to the management of window-plants, and we comply with readiness, from a desire to extend the pleasure derivable from the culture of these objects of nature's especial bounty, in districts that preclude the possibility of enjoying that most delightful of all scenes—a good garden.

In crowded cities and large towns, flowers are, if possible, more highly esteemed than in suburban or country places, and any thing which promises to render their preservation easy or attainable in such naturally adverse situations, is certainly deserving the most favourable attention.

As a first step towards so desirable an end, the Wardian Case must be viewed, as a great and decided acquisition, facilitating as it does their management by protecting the plants from the hitherto unconquerable obstacles presented in the accumulation of dust, draughts, and the effects of impure air; but it is only as a preservative of this extent that it can be regarded; we mention this because we are aware of instances in which disappointment has ensued, from expectations being formed that, through its means, plants of many and various genera might be reared together, and brought to maturity; a very little reflection however would have prevented this.

The first and most important point in the management of plants under these circumstances, is to form an appropriate selection; the description is of little moment, and must depend on the taste of the owner, but it is absolutely necessary to a successful result, that all the plants employed, possess a kindred character, they should collectively grow, produce their blossoms, and become dormant, at the same seasons. They may be composed

of Cacti, of Ericaceous plants, of Ferns, or of any other natural family, and while each is kept separate, either will succeed, but when a heterogeneous jumble of the whole is collected, placed together in a small box, and of course subject to the same influences, it is unreasonable to expect aught else than disappointment.

One of the most appropriate and promising groups for the purpose that we are acquainted with is *Gesneraceæ*, these we strongly recommend. A case filled with gesnerias, gloxinias, achimenes, and other members of the family, would certainly present a most charming appearance, their several shades of blue, scarlet, white, and purple, contrasting together, and relieved by the rich velvety foliage, cannot fail to please, and for the guidance of amateurs we subjoin a list of such as we deem most suitable.

Where only a small case, and a constantly green aspect is required, ferns or the globular cacti should be selected, these occasion less trouble than any others, but they present less change, and but few colours.

It must be borne in mind that whatever description of plants are chosen, the treatment is to be assimilated as nearly as possible to their ordinary culture when grown in the usual plant structures, except that air need be admitted only when necessary to dry the atmosphere or reduce the temperature, as for the preservation of flowers, or for resting the plants, at all other times the proper temperature must be maintained by keeping the case closely shut, and if that is not sufficient, by the application of heat externally, either by means of a fire in the room or by exposure to the sun's rays.

An occasional supply of water is at times requisite though not frequently, as from the construction of the case, and its being usually shut up, but little moisture can escape, that which condenses on the glass returning again to the soil.

The size and form of the case must be determined by the convenience and taste of the possessor, the bottom should be formed of a trough or box, at least eight inches deep, to contain the soil, and we have seen some, having in addition a metal tray, to slide under the bed of earth, for the purpose of supplying bottom heat, by filling the tray with hot water; a door at each end, or one in the middle is necessary for the convenience of

tending the plants, and a circular roof is greatly preferable to a plain one, not only for appearance sake, but because it conducts the moisture as soon as condensed, down the sides, instead of allowing it to fall among the plants, thus preventing the "drip" that is constantly occurring from a roof of straight lines; the frame work should be as light as is consistent with a proper regard to strength, and the panes of glass as large as possible.

The following are selected gesneraceous plants sufficient for a Wardian case six feet long, three feet six inches wide, and three feet high.

		ft. in.
Gesneria Suttonii,	Scarlet,	2 0 high.
splendens,	ditto,	2 6
tubiflora,	White,	3 0
faucialis,	Scarlet,	2 6
Gloxinia speciosa,	Blue,	0 8
rubra,	Rosy crimson,	0 8
Cartonii,	Pink,	0 8
candida,	White,	0 6
violacea,	Violet,	0 8
speciosa alba,	Blue and white,	0 6
Achimenes longiflora,	Blue,	1 6
grandiflora,	Rosy purple,	2 0
picta,	Scarlet spotted,	2 0
rosea,	Rose colour,	1 0
Sinningia guttata,	Cream spotted,	1 0
Drymonia punctata,	White ditto,	creeper.

Two or three neatly growing climbers, such as *Tropæolum Jarrattii* or *Convolvulus pentanthus* may be introduced to fill the upper part, and add variety to the whole.

EDITOR.

CULTURE OF THE ORANGE.

THE *Citrus Aurantium*, or common Orange, once the most fashionable and prevailing ornament of the greenhouse and conservatory, is still, though so much neglected, well deserving the little skill and attention necessary to its growth. Its beauties are known to every one at all conversant with horticulture, and therefore they require no encomium, though were it only for the pleasing associations so intimately connected with the plant, room should be found for it in every suitable plant structure of the least pretensions. "It is," as Loudon has observed, "one of the most striking of fruit-bearing trees, and must have attracted the notice of aboriginal man long before

other fruits of less brilliancy, though of more nutriment or flavour."

The first requisite to the culture of this noble plant is a strong rich soil, composed chiefly of friable loam from a common or pasture, with the addition of about a third of old hotbed manure and a rather less quantity of peat or clean sand, these thoroughly incorporated, afford a highly nutritious medium for the roots. The only other point of consequence in their management is to provide an agreeable temperature and some slight shade while the new wood is being formed: the usual greenhouse treatment will preserve them in excellent health at all other times, but *then* they require, and must have, if luxuriant plants are desired, a close humid atmosphere, with a temperature of about 60°, and protection from the sun's rays until the new growth is completed.

Very little pruning is best for them, only just to keep them in order and proper form, except in the case of old trees that have become naked and unsightly; these are much benefited by severely cutting back, being at the same time repotted and placed in heat, to induce them the more readily to form a new and luxuriant growth.

Orange trees are frequently infested with two troublesome insects, the scale and mealy bug. The most effectual remedy for them is, spunging all over the plant with warm soap suds, and afterwards cleaning with the syringe, attention to the above and the usual routine, watering, &c. with an occasional supply of liquid manure, will insure handsome healthy plants, and plenty of fruit.

W.

LIST OF NEW PLANTS.

ORCHIDACEÆ. — *Gynandria Monandria*.

Epidendrum verrucosum. This beautiful and fragrant plant has been obtained from Mexico by Messrs. Loddiges, with whom it flowered in July last. It is not very nearly related to any kinds hitherto discovered; belongs to the same set as *E. tessellatum* and *Candolli*, from all which its stems and flower-stalks, closely covered with minute asperities; and its rich crimson flowers, which are as much as three inches in diameter, readily distinguish it. Its closest affinity is perhaps with *E. phæniceum*, a native of Cuba, and *E. Hanburii*; but both those plants have the middle division of the lip two-lobed; and they are not, that we are aware of, fragrant. — *Bot. Reg.*

ROSACEÆ. — *Icosandria Di-Pentagynia*.

Cratægus crenulata. This plant is the *Pyracantha* of the Indian mountains

and rivals that of the Caucasus in its rich scarlet haws, which are, however, of a peculiar vermilion tint, and of a very depressed figure. Their flavour, too, is by no means ungrateful. The shrub is a native of Nepaul, whence it was received by Dr. Roxburgh, of the Calcutta Botanic Garden, where he says it has grown to the height of from six to eight feet in eight years: it would have been better for us had he found it unkeepable. In the garden of the Horticultural Society it has survived several winters, trained against a south wall. It is a fine hardy evergreen shrub, attaining about the same size as the common *Pyracantha*, and requiring the same kind of treatment. It grows freely in any good loamy soil, and rather dry situation, flowering abundantly in June, and producing its fine clusters of bright red berries in September. — *Bot. Reg.*

E. — *Gynandria Monandria.*

Dendrobium compressum. This singular species was discovered in the island of Ceylon by Mr. Nightingale, and by that gentleman sent to his Grace the Duke of Northumberland in 1840, in whose collection at Syon it flowered in 1842. The curious flattened stems are not more than three or four inches long, and resemble those of no species hitherto discovered. The singular form of the labellum, which is that of a wedge drawn out at the point, and furrowed along the middle, distinguishes this plant independently of its habit. The flowers are small and yellow — not at all handsome. — *Bot. Reg.*

BIGNONIACEÆ. — *Didynamia Angiospermia.*

Bignonia Carolina. All that we know of this charming plant is that it flowered with the Earl of Ilchester, at Melbury, in 1842, and again in May, 1844. It is a most desirable plant for conservatories; because, in addition to the beauty of its snow-white flowers, which the plant pours forth with exuberant luxuriance, they are sweet-scented, an unusual circumstance with Bignonias. We presume it to be a Buenos Ayres species. — *Bot. Reg.*

MELASTOMACEÆ. — *Octandria Monogynia.*

Osbeckia stellata var. A green-house plant of strong habit, producing large flowers of a crimson lilac hue. The species is found in Nepaul. Dr. Royle mentions it as one of those Melastomaceous plants which advance farthest to the north, in the valleys near Massorec, and on the banks of the Ghiree River. This variety was flowered in the garden of H. T. Hope, Esq., of the Deep Dene, near Dorking, in September last. — *Bot. Reg.*

RHAMNACEÆ. — *Pentandria Monogynia.*

Cryptandra suavis. The *Cryptandras* are little New Holland shrubs, with the aspect of heaths found on barren hills and rocky places, or in light sandy land. In a wild state they often become spiny, but in cultivation, when they are kept in a moist atmosphere, they much lose this tendency. The present species is a native of the Swan River; its flowers are very sweet smelling, like hawthorn; and though small, they render the plant attractive from the profusion in which they are produced all over the branches. Mrs. Wray, of Oakfield, has had the good fortune to raise it from seed. It requires about the same treatment as Cape heaths. — *Bot. Reg.*

CACTEÆ. — *Icosandria Monogynia.*

Echinocactus concinnus. A very neat little plant, about two inches high and three or three and a half inches in diameter, globose, but remarkably depressed at the top, and even convex there, and crowded with mammillæ, with their woolly and spinous areolæ, sending out in a stellated direction eight or ten slender spines, with one longer and stronger, but still slender,

which is curved downwards. The flowers (one or two) proceed generally from the border of the depressed vertex or summit, are large and handsome; the numerous spreading petals are yellow, with a dark red streak down the centre. It is supposed to be identical with the *E. orthocanthus* of Pfeiffer's "Enumeratio." — *Bot. Mag.*

COMPOSITÆ. — *Syngenesia Æqualis.*

Chabræa runcinata, syn. *Leucheria runcinata*. An herbaceous annual from Chile, whence it was introduced by Mr. Bridges. The plant attains a height of about a foot or a foot and a half, branching from the root, and again above, sparingly clothed with oblong pinnatifid leaves. The flowers are white and, occasionally, rose-coloured; in general appearance closely approaching those of the double-flowering *Senecios*. — *Bot. Mag.*

PEDALINEÆ. — *Didynamia Angiospermia.*

Pterodiscus speciosus. For a knowledge of this splendid new genus of plants the botanical world is indebted to the Right Hon. the Earl of Derby. It was collected in Macalisberg by Mr. Burke, while engaged in procuring animals and plants for that distinguished nobleman in the interior of Southern Africa. It flowered in the stove at Knowesly in May, 1844, and rarely has a more desirable plant been introduced to our collections. The tuberous root is large, solitary, quite globose, the upper part elevated above the earth, and producing from its summit a stem, which soon divides into several erect, rather stout, succulent branches, bearing opposite leaves and large handsome red-purple flowers in the axils of those leaves — nearly as large, and quite as showy, as those of an *Hibiscus*. — *Bot. Mag.*

SOLANACEÆ. — *Pentandria Monogynia.*

Juanulloa parasitica. It will surprise many of our readers perhaps to be told that this fine plant, known in our stoves, we believe, for four or five years, and pretty widely dispersed under the name of *Brugmansia parviflora* and *B. floribunda*, has nothing to do with that genus, and is, in fact, one of the rarest of plants (speaking botanically). A reference to the figure, in the "Flora Peruviana," of *Juanulloa parasitica* will convince any one that the so-called *Brugmansia* can be no other than that remarkable "parasite" (or rather, I apprehend, an epiphyte) upon the trunks of trees in woods near Pozuzo and San Antonio de Playa Grande in Peru. It was there discovered by the authors of that fine work, and well figured by them. — *Bot. Mag.*

EPACRIDACEÆ — *Pentandria Monogynia.*

Epacris autumnalis. A very beautiful hybrid of robust habit, producing dense spikes of large flowers, of which the tube is rich crimson, and the limb pure white. Unlike most of its kindred, it commences blooming towards the end of October or beginning of November, and continues to flower through the winter till April. This feature, which is not the least interesting or useful, has suggested the specific name. It has flowered in the nursery of Mr. Low of Clapton. — *Pax. Mag. Bot.*

GESNERACEÆ. — *Didynamia Angiospermia.*

Gloxinia speciosa, seedling vars. No. 1. *Cerina*, a hybrid, between *G. rubra* and *Sinningia guttata*, of a pale rose-colour, obtained by Messrs. Mountjoy and Son, who describe it as of robust habit and free habit of flowering. No. 2. *Superba*, a large flower of a deep rich violet hue, obtained by Messrs. Henderson, of the Pine-apple Nursery, about two years ago. — *Pax. Mag. Bot.*

TO CORRESPONDENTS.

A SUBSCRIBER, Forest Hill, will find some remarks on the general treatment of *Gesnerias* in our last; the management of *G. zebrina* differs only in continuing the period of activity through the winter, the plant being naturally a late flowerer. We imagine your plant to be in too cold a temperature — this would cause the buds to fall off. Place it in a heat of from 55° to 65°, and you will soon have a fine display of flowers. *Erythrina Crista-galli* is an accommodating plant, it may be grown either in a stove, a common greenhouse, or even in the open air. Like the *Gesnerias*, it should have a season of rest, which may commence now. Keep the plant quite dry until the middle of next March, then repot it; and if you wish for early flowers, place it in heat to start; but if you are content to wait until the natural season, the plant will grow stronger, and the flowers have a deeper colour, if kept in the greenhouse, with such treatment as is usual for plants in the same situation. Planted in the open ground, it merely requires to be cut down in the winter, and a little rubbish thrown over the crown, to defend it from severe frosts; and it then produces strong stems and dense spikes of flowers throughout the autumn. We have before expressed our opinion of the unfitness of guano for plants in pots; to others growing in the borders of the garden it is better to apply in a liquid state, but even then it is uncertain in its effects.

T. BARTY, Esq. — Unfortunately the specimens sent both of insects and flowers were completely dried up when we received them, so much so that we could distinguish nothing but a few particles of earth in the quill. A little damp moss in a tin box is the best preservative for flowers, and would probably have retained some moisture about the insects.

M. J.—The following are twelve good *Ranunculuses*, the prices of which we cannot give. Your other request is answered in an article on oranges, p. 227.

Magellan.	Talisman.
Spheroid.	Sir James Graham.
Leonidas.	Brilliant.
Laura.	Saai.
Major Laing.	Mona.
Boz.	Flora M'Ivor.

CALENDAR FOR NOVEMBER.

PLANT STOVE. What plants require now, and for some time forward, might be compressed into two words—healthy repose. Comparative dryness both in the atmosphere and the soil, and a low temperature by day, will secure repose; and a still lower degree of heat at night, the removal of dead leaves, and of any decaying matters, and fresh air admitted in small portions, so as not to produce a chill in the plants, will go far to preserve every thing in a healthy state. A temperature of 60° or 65°

by day, is quite high enough, and 3° or 5° lower at night should be insisted on.

GREENHOUSE. In a cultural point of view, the remarks used above, will apply here also. In conjunction with cleanliness and atmospheric dryness, the simple exclusion of frost will be sufficient at this season. Use no artificial heat, beyond what is necessary to effect this. In fine weather the arrangement of greenhouse plants, in frames and pits, should be attended to, so as to present the readiest means of protection from frosts.

FLOWER-GARDEN. All the dying and decaying portions of summer plants and annuals, which are not removed, should be speedily taken away. In cases where it can be done, and the weather is dry and favourable, all the flower beds should be prepared early in the month, by removing part of the old soil, and adding fresh compost, which should be placed so as to profit most by atmospheric changes. Ranunculuses and other bulbs, which are intended to be planted before the spring should be put in early in the month, choosing dry and mild weather for the operation; and the beds in flower-gardens should be planted as they are intended to remain during the winter if the soil cannot be renovated, and the beds left bare, which may sometimes be done in detached spots. The stock plants intended for next year, must be carefully preserved from frosts and damp; attention to guard against the latter will render them far less susceptible of injury from the former. The less damp plants of all kinds have about their foliage, and the more equable the moisture maintained at their roots, the more likely they will be to survive the winter without injury; many hardy and half-hardy plants, may be very simply and efficiently protected, by attending to these two considerations.

Proceed with tulip-planting: offsets and weak roots should be got in first. Carnations, picotees, and auriculas require some care through this and the following month, to preserve them uninjured; the chief danger is to be apprehended from an excess of moisture; allow them to receive as large a quantity of fresh air as the state of the weather will permit. Dahlia roots should be taken up, dried, and stored away for the winter.

T. M.



DIPLADENIA GRASSINODA

THE
FLORIST'S JOURNAL.

DECEMBER, 1844.



DIPLADENIA CRASSINODA.

WITH AN ENGRAVING.

THE genus *Echites* is an extensive group of plants, well known to cultivators as eminently beautiful ornaments of the stove, and as such has received attention through some of its members for a lengthened period. Lately, however, some additions have been made, which promise to out-rival all the species previously known, and among them is our present subject.

This plant is a native of Brazil, where, we believe, it was originally discovered by Mr. Gardner, who described it as *E. crassinoda*. It was some time afterwards introduced to this country by Mr. Makoy of Liege, who sent it to Mr. Low, nurseryman, of Clapton, under the name of *E. carrasa*, and by that name it has become pretty generally known. But on the occasion of its blooming an opportunity for examining was presented, when it was found to belong to a section of the original genus, separated by the younger De Candolle, and distinguished by him through the name of *Dipladenia*, a word derived from the Greek *diplos*, double, and *aden*, a gland, in allusion to the glandular appendages to the nodes.

The plant produced flowers for the first time in England in August last at Wallington Lodge, Surrey, the seat of R.G. Loraine, Esq., to whose kindness and obliging attention we are indebted for our figure.

The usual culture of *Echites* is generally known to gardeners, and we presume that of *Dipladenia* must be assimilated to it. Mr. Loraine informs us his plant is "grown in a strong moist

heat, in a compost of one-third loam and two-thirds leaf mould, and being placed on a tank it has the advantage of gentle bottom heat." The latter feature in its treatment may probably be adduced as the principal cause of the early development of blossoms which occurred, for the plant appeared to be comparatively an infant; now it is well known the contrary is usual with plants of this description, a long period of time frequently elapsing before it can be ascertained if the trouble bestowed is likely to meet an equivalent return; should it, however, be proved, as we imagine it will, that the gentle bottom heat was conducive to the production of flowers, some years of attention may in future be spared.

It must not be thought that this treatment bears the least resemblance to "forcing" a plant; on the contrary, the bottom heat is described as gentle, so that, instead of becoming enervated, the plant must be accumulating vigour, and we should also remember this group of climbers being natives of very warm latitudes, must constitutionally require some such stimulant. It does appear somewhat strange truly, that a circumstance which, when pointed out, seems no more than a common sense view of the case, should never before have arrested our attention; however, we are glad that the application of bottom heat to tropical plants, and its beneficial effects, are beginning to be understood and properly appreciated by cultivators generally, and we trust it will be yet more extensively adopted.—EDITOR.

A SELECT LIST OF PICOTEEES.

SIR,—Thinking a selection of the names of some of the very best show flowers might prove useful to those of your readers who are purchasing this season, I enclose the following, all of which I have proved to be first rate. There are some other new ones about which report speaks most favourably, but I have not grown them yet, so cannot speak from my own knowledge of them.

Heavy-edged Rose.

Green's Queen.

Wilmer's Princess Royal.

Brinkler's Beauty.

Twitchet's Fair Rosamond.
 Kirtland's Mr. Annersley.
 Wilson's Fanny Irby.

Light-edged Rose.

Barnard's Mrs. Barnard.
 Garratt's Lady Dacre.
 Burroughs's Lady Alice Peel.
 Waine's Queen Victoria.
 Dickson's Bride.

Heavy-edged Red.

Jessop's Sir William Middleton.
 Wildman's Isabella.
 Sharpe's Duke of Wellington.
 Gidden's Teazer.
 Barraud's Cornelius.
 Brinkler's Rising Sun.

Light-edged Red.

Sharpe's Gem.
 Sharpe's Countess De Grey.
 Sharpe's Hector.
 Burroughs's Mrs. Bevan.
 Kirtland's Princess Royal.
 Sharpe's La Delicate.

Light-edged Purple.

Robinson's Nottingham Hero.
 Ely's Favourite.
 Gidden's Vespasian.
 Sharpe's Invincible.
 Brinkler's Purple Perfection.
 Brinkler's Lady Chesterfield.

Heavy-edged Purple.

Sharpe's Agitator.
 Wilmer's Prince Royal.
 Headley's Nannette.
 Ely's Field-Marshal.
 Dickson's Trip to Cambridge.
 Mitchell's Nulli Secundus.

C. EMBLETON, *Brixton.*

HORTICULTURAL ESSAYS,

By the Members of the Regent's Park Gardeners' Society.

ERICA ; ITS MANAGEMENT AND CULTURE.

BY MR. C. MOORE.

AMONG the numerous families which compose the vegetable kingdom, few surpass the *Ericaceæ* in the variety and beauty of their flowers; and especially their long continuance in the flowering state. The geographical distribution of *Erica* is confined to Europe and Africa, but extends to the most northern point of the former, and to the most southern of the latter; the most easterly point to which they extend is the Mauritius, where some of Salisbury's genus, *Salaxis*, are found. The Linnæan genus *Erica* has been subdivided into 22 genera, by Don; but who, it would appear, considered it only as an attempt to elucidate their characters more clearly, as will be found by a quotation from his own work on the subject:—"As happens in other natural families, the characters of the general groups of *Ericaceæ* are not so strongly marked as in those that are less so; but we are not on that account to give up the idea of dividing them, and to retain four or five hundred species in one genus, as has been done in the case of *Erica*, which we have attempted to subdivide into a number of minor groups; and, whatever opinion may be formed of their title and rank as separate genera, the arrangement of the species will, we trust, be found more natural than any hitherto proposed." Thus it will be seen that he questioned the propriety of what he had done. De Candolle, in his celebrated Prodrômus, has adopted two or three of Don's genera, but has retained the greater number of the species under the original genus *Erica*, which, however, he separates into four sub-genera, including forty-nine sectional divisions: this answers the same purpose, and is by far the easiest and most preferable system. Having thus briefly stated some facts connected with the history of the Heath, we will now enter on its propagation and culture. To render the sub-

ject as subservient to practical purposes as possible, each operation will be treated of under a distinct heading.

PROPAGATION. — *By Seed.* This should be sown about the beginning of August, or the latter end of February : the former period, however, is preferable for this reason, that with ordinary success the seedlings will be sufficiently strong to stand the winter, and will be ready to pot off by the following spring ; whilst by the latter, the plants will not be strong enough to pot off before the autumn, when it is dangerous to touch them ; and by leaving them too long in the seed pot they are apt to get drawn, and are likely, therefore, during unfavourable weather, to damp off. A great error is frequently committed in covering the seed too thickly with soil : the many cases of failure are mainly attributable to this cause alone ; because the seeds being small, their power of growth must consequently be feeble, and they are unable to remove the mass which is placed over them. The most desirable method to follow is to drain a pot well with potsherds, over which put some rough siftings of peat, or other fibrous mixture ; then add the soil, which should be sandy peat, rather finely sifted ; fill up with this to within half an inch of the rim, and, after being gently pressed down, leaving a level surface, sow thickly : finally, shake a small portion of silver sand over all, and, after watering with a fine-rosed pot, cover the mouth of the pot with a piece of common window glass, and place it in any cool situation near the glass. Such is the method I have followed, and which has been attended with the greatest success.

By Cuttings. This method of increasing stock has many advantages very superior to that by seed — for this reason, that plants raised in this manner are more precocious, more hardy, and less succulent in their growth ; they partake of the same nature, and are as mature in every part as those from which they were taken. Thus we find that young plants from cuttings, when once properly established, are frequently covered with bloom at their regular flowering season ; while some years must pass before the same degree of maturity will be arrived at by plants from seed. To increase this genus by seed is therefore seldom resorted to without novelties be the object in view : it is, however, a singular fact connected with this subject, and one sufficiently demonstrated by every-day practice, that a cutting

from a seedling plant will sooner arrive at a flowering state than the parent plant itself. After thus briefly dilating upon this interesting operation, I will now, as succinctly as possible, state the method of raising from cuttings.

Probably in no part of the world are there so many heaths propagated, or so soon ready for sale, as in the neighbourhood of London. To those unacquainted with the practice, the rapidity with which a young stock is got up would surprise them. I speak more especially with reference to the free growing sorts. About the beginning of February, and sometimes sooner, young and healthy plants are taken into a house and placed near a glass, the average heat being from 50° to 55° (Fahrenheit): this will be sufficient to excite them rapidly into growth. When the young shoots are about half an inch in length, they should be taken off as near to the place from whence they commenced growing as possible; then with the propagating scissors, remove the leaves close to the stem, from about one half of the cutting, and with a sharp knife cut the base smoothly off, and immediately insert it in the pot ready prepared to receive it. In performing this operation great care must be taken that the cutting is not bruised, for being forced wood, it is very susceptible of injury. After being watered, and as soon as the leaves are dry, place the bell glass on, and plunge the pot to within two inches of the rim in half-spent tan, or any thing which will produce a steady but not too strong a degree of heat; cuttings treated in this manner will strike freely in the course of three weeks or a month. I may here observe that many persons before putting the *vestitæ* in the forcing-house, completely strip them of their foliage to cause them to break more freely; but healthy young plants, when excited, will produce plenty of young wood without resorting to the above. The most common, and decidedly the most sure, method to pursue with regard to heaths, is to take the cuttings from plants grown in the usual manner, but let the wood be as young as possible; treat the cuttings as detailed above, with this exception, that instead of plunging the pot in any warm material, plunge it in coal ashes or sand, but in a house where there is a higher degree of temperature than that from which the cutting was taken. It is a good thing with the more difficult sorts to set a small 60 or thumb-pot in the middle

of the pot, and place the cuttings around the rim; they are found to root with greater certainty by this means; and as soon as they are struck, take the pot out, and fill up the place with peat; the young plants will then gain strength, and can be potted off with more safety.

Perfect drainage is a necessary requisite for all cuttings, but especially for the heath. I would therefore recommend another small 60 or thumb-pot to be inverted in that in which the cuttings are placed, on all occasions; then with broken potsherds fill the pot more than half full, over which a thin layer of rough siftings from peat, then with soil composed of three quarters of silver sand, and one quarter of peat, well mixed together; fill almost to the rim, and over all put a thin coat of well sweetened silver sand; after a gentle watering, the cuttings may be inserted. The neatest manner to put them is in rows, taking especial care they do not touch each other: this is done to prevent any cutting which may damp off from communicating it to another. All this tribe should be "glassed" until struck. The best kind of bell-glass to use is the domed or conical sort, as the moisture given off from the soil in the state of vapour, being condensed on coming in contact with the surface of the glass, returns down the sides back to the soil, while in the flat-topped glasses, it is apt to deposit itself on the top, and drop from thence on to the cuttings, thereby causing damp; thus obviating the necessity of wiping the glass, which should never be done but in extreme cases, as practice has proved that such a proceeding is quite unnecessary. Nothing can be more injurious to cuttings of this tribe than wetting the foliage; the custom, therefore, of taking off the glass to water is in the highest degree reprehensible, because, as sand is a conductor of moisture as well as heat, the thin layer of it on the top is put there for the purpose of becoming a subservient agent for disseminating the water equally over the surface; it should be given when required with a fine-rosed watering-pot, but without removing the glass.

As soon as the cuttings are struck, the glass should be tilted up a small way, so as to harden them off by degrees, until they can be removed to a colder house, where, after standing a few days, they may be freely exposed: if struck early in the season, they may be potted off any time during the summer, and will consequently be well established plants by the following spring;

but if, on the other hand, it be autumn before such is the case, it is better to leave them in the cutting pot during the winter, and pot off early in the ensuing spring. They require to be potted rather firmly at first, either singly or three in a small 60-pot; after which, place them in a frame near the glass, keep it closed and shaded for a few days, and admit air gradually. With ordinary success, they can be shifted a second time during the season; that is, if potted off early in the spring.

CULTIVATION. — *Soil and Potting.* Peat or bog earth, and silver sand, are the principal constituent ingredients for growing heaths. When for very young plants, it should be broken up rather fine and somewhat sandy; but for general purposes, the rougher it is the better; in fact, it cannot well be too rough. In order to keep it as open and pervious as possible, mix with it a quantity of charcoal broken up into good-sized pieces, some freestone, or, what is as good, plenty of pebbles, with abundance of silver sand, the latter being a powerful agent as a conductor of heat and moisture, and consequently very essential in the above composition: thoroughly incorporate the whole before using it. Peat of a naturally sandy nature is not so desirable for growing plants in, as that which is less so; though certainly preferable for the purpose of propagating: but where luxuriance of growth is the object, a soil composed of decayed vegetable matter, full of fibre, and which will bear handling without crumbling to pieces: such as this, if prepared in the manner above recommended, will be found to possess more fertilising properties than any other. The best soils frequently become useless in consequence of injudicious potting and subsequent bad management; in whatever manner the former is done, it has no small share in the ulterior results: it is therefore of the first importance that such an operation should be properly attended to, both with regard to the manner in which it is performed, and the size of the pot. Some good growers have strongly recommended the "one-shift system" for the free-growing sorts, and some tolerable plants have been already produced on this principle, but no decided ultimatum has as yet been arrived at in respect to it; for whilst we find some pursuing it with success, we, on the other hand, find there have been tremendous failures, and with some of its strongest supporters. This only proves that whatever qualities the system

may have, it is as yet generally but little understood; the idea, however, of growing on this principle ought not, before its capabilities are better tested, to be entirely repudiated. My impression is, that though a plant may succeed for a time by this method, yet that it will be of short duration, and its beauty but transient; because a plant shifted from a 60-sized pot to that of 16, will, with ordinary success, grow rapidly, and its roots reach to the side of the pot horizontally, from whence they first emanated, it being seldom, if ever, found that the roots of potted plants penetrate perpendicularly, there being nothing to attract in that direction. Pots, being composed of a porous substance, imbibe the carbon of the air, which, being a principal constituent of the food of plants, the spongioles are attracted thither; it is by these alone that food is supplied, and if so, we must presume that the nutritive principle which the soil contains, and which is imbibed by the spongioles, must be soon exhausted in that portion of the soil near to the side of the pot, where invariably the roots are in the greatest abundance, and where they will soon form a thickly interwoven mass if kept long in the same pot. A plant, however, will not long continue vigorous if it be only supplied with food in a gaseous state, though it may *exist* for a considerable time; and this explains why plants will continue growing, but weakly, even though left for a very long time in one pot; but when taken out, their roots will be found in an exceedingly matted state around the side, without one particle of soil amongst them; by removing a portion of this entangled mass, the soil appears. When large shifts have been given, the soil in the centre appears quite in a recent state, and completely destitute of radiculæ. We may therefore naturally infer, that plants shifted from a very small to a very large pot, cannot long continue in a healthy condition, as the fertilising constituents are extracted from one portion of the soil only; that a quantity of inert matter remains in the centre, and this, if not removed for a length of time, will become soured, and ultimately kill the plant. To grow such heaths as are intended to be kept for years, the safest and most certain principle to work upon is the progressive system. However, let it not be understood that I here recommend very small shifts; in too many instances this not only injures plants, but is a waste of time. I therefore

prefer the intermediate course ; viz. from a 60 to 32, or from a 48 to 24, and so on accordingly. I here only allude to strong healthy plants ; a sickly plant can never be improved by getting a larger shift. The plan to be adopted in this case is to reduce the ball, and replot it, in rather fine sandy soil, and place it in a shady close situation, until it recovers.

It has been strongly insisted upon, by some cultivators, that heaths should be raised in the centre of the pot. From this the most absurd errors have been committed by many who were endeavouring to follow the advice, without at all exercising their own judgment ; the result has been that some collections have been comparatively destroyed, and many splendid plants lost, through this alone. The principle may be good to a certain extent ; but the extreme is attended with danger, and therefore ought to be avoided, because during the summer the sun's rays must act powerfully on the elevated part : the soil being sandy, will soon become dry and impermeable to water, and, in the endeavour to keep this sufficiently moist, watering is resorted to, the main roots become denuded, and the spongioles subjected to too great a quantity of that element. Two such opposite conditions, acting on the system of a plant at the same time, will soon destroy life, and thus many valuable species are lost by over kindness and attention. Such are my objections to highly elevated heaths in potting. The only necessary thing to be attended to in this operation is to insure a good and perfect drainage, putting plenty of broken potsherds, or charcoal, at the bottom, and over the drainage some of the most fibrous and roughest of the soil : pot firmly, and as high as possible, without elevating them prominently. It may be done at any time, from January to October, care being taken that the frost does not reach them immediately after ; indeed, if it be early when they are potted, a little fire-heat will do them very essential service. About the beginning of April, syringe over head every fine morning ; and, as the season advances, partially shade from the mid-day sun.

Exposure and Watering. As soon as they can with safety be fully exposed, the youngest plants should be plunged in some cool material in frames, freely exposing them in dull weather ; but when the sun is powerful they should be syringed every morning, and the lights put on, tilting them up at each end as

high as possible, with a slight shading; remove the lights and shade about three o'clock, and leave them perfectly open as before: pursue the same course till the end of July, when they may be placed in any cool but not shady situation, so that the wood may have sufficient time to ripen, before they are placed in their winter-quarters. With the large specimen plants a safe and more easy plan should be adopted: in a somewhat exposed situation, erect a temporary span roof, sufficiently large to cover the space the plants intended to be put out will occupy, and also strong enough to support rollers covered with thin canvas, such as is generally used for shading; but it is not for this purpose alone that the rollers will be of service: they will, when let down, afford a sufficient protection from heavy rains. Before placing the plants, put plenty of material down to insure a good drainage; on this, plunge the plants nearly to the rim, in coal-ashes, or any similar material, putting the largest plants in the centre, and gradually sloping them to the front. In this situation, they will stand during the summer with safety; they can be shaded or exposed at pleasure, and are as safe from heavy rains, comparatively speaking, as if they were kept in a house, which in general is injurious to this tribe, as there are few structures whose means of admitting air is sufficient to keep them from "drawing." The same routine of management should be followed with these as previously described for the younger plants, viz. syringing and shading during the summer growth; subsequently allowing the sun to have full action upon them. To make the plants grow dwarf and bushy, they should be frequently "stopped," by means of pinching off the tops of the leading shoots: examine the roots two or three times in the season, to see they are not suffering for want of pot room. When a heath is growing luxuriantly there is little fear of over-watering it, and therefore by no means allow it to suffer for want of that element. During winter, however, there is some nicety required in watering, and great care must be taken lest they are given too much. When necessary, at this season, they ought to get a good watering, and as seldom as possible. The most evil consequences arise by watering these often, and but a little at a time, because the small quantity given will not penetrate through one third of the soil, and the bottom becomes quite dry whilst the top is saturated. More plants are injured by this

very cause than from any other I am acquainted with.* Where they are kept during the summer in houses, a good practice is to put the pot into a larger one, filling the empty space with sand or moss, which, when kept moist, answers the same purpose as plunging out of doors. The advantages are manifest; it secures the radiculae against the danger of suffering from the action of the sun on the pot, around the side of which the greatest number of spongioles, or, in other words, feeders, are, and if at all injured, the other parts of the plant must suffer. I therefore hold it to be exceedingly wrong to stand them out without protecting their roots in some way or other from the sun's scorching rays, and keeping a moist and cool body where it is most requisite.

Structures. The best kind of structure for heaths is one having a loose span roof, with the top lights running down half way on each side; and where the side and end sashes can be let wholly down when required, so that, if necessary, air can be admitted at every point, and the house nearly thrown open. They will succeed as well, if not better, in pits, provided they stand on a dry bottom;—a pit constructed in a similar manner to that just recommended for the house, with this exception, that, instead of the side sashes there should be brick work about $2\frac{1}{2}$ feet high, intersected with plenty of frame-work where air can be admitted at pleasure, the lights fastened at the roof by means of hinges, and means provided for tilting them up when required. Where such as this cannot be had, common brick pits are the best; but wherever they are placed, they should have abundance of air when the weather will permit; a cool and dry situation where the frost cannot reach should be their winter-quarters.

Diseases. The only disease heaths are subject to is the mildew; the cause of which I conceive to be, as a late writer on the subject has observed, "the want of a balance of moisture in the composition of the soil and the atmosphere, rather than, as is commonly supposed, to an excess of it in the former. The

* An experiment which has been attended with decided success, has been made here this season; and as I am not aware that any thing similar has ever been tried before with the heath, I will here mention it. Some strong and healthy plants were selected from amongst others of a similar kind; these were watered once a fortnight with limpid guano water. The improvement caused by this treatment was so distinguishable, that the most superficial observer could not pass without remarking it.

remedy consists in avoiding, as far as possible, an irregular composition of the atmosphere as regards heat and moisture; and also an excess or deficiency of moisture in the soil, so that each may be in a condition to exert its proper influence on the constitution and development of the plants."

For the guidance of those who are unacquainted with the more rare and beautiful species of *Erica*, a select list and the shape of the flower will be given.

Before closing this subject, one which has lately excited considerable emulation amongst cultivators, I have only to observe that what has been stated is from actual practical experience: each operation has been treated of in as graphic and comprehensible a manner as possible; and should the course of management be adopted as has been here recommended, there can be but little doubt of ultimate success.

LIST OF NEW PLANTS.

ARISTOLOCHIÆ. — *Gynandria Hexandria*.

Aristolochia ornithocephala. There are few plants which present more striking peculiarities of form and structure in their blossoms than the various individuals of the genus to which the present plant belongs, which is a most remarkable one of the group. It is a large climbing plant with petiolated large leaves, in shape between cordate and reniform; the flowers are solitary, the perianth very large, dingy yellow, the tube at the base $2\frac{3}{4}$ inches long, obovate, inflated, marked with large black-purple reticulations; at the upper end this tube suddenly contracts, and is bent down at an angle; and this may be considered the base of the limb, which now becomes two-lipped. The upper lip is 5 inches long (resembling, with the inflated tube, a bird's head and beak): the lower lip has a narrow stalk, 2 inches long, which suddenly expands into an immense, reniform, beautifully reticulated, waved lamina, 4 inches long and 6 inches broad, the reticulations finely marked with deep purple on a pale yellow ground. It was raised in the Glasgow Botanic Garden from seeds gathered near Crato, Brazil, by Mr. Gardner, in September, 1838. — *Bot. Mag.*

GESNERIACÆ. — *Didynamia Angiospermia*.

Gesneria Gardneri. Discovered by Mr. Gardner, on the Organ Mountains of Brazil, in March, 1841, and raised from seeds at the College Botanic Garden, Dublin, where it bloomed in July, 1844. It is very distinct from any species hitherto described, and remarkable for the thick fleshy leaves, shaped not unlike those of the elm, pale coloured and with prominent nerves beneath. The flowers are solitary, of a pleasing carmine tint, proceeding from the axils of the leaves. — *Bot. Mag.*

BORAGINÆ. — *Pentandria Monogynia*.

Myosotis azorica. This beautiful *Forget-me-not* is found about waterfalls and on wet rocks with a north-east aspect, in the islands of Corvo and

Flores, the most westerly of the Azores. Its proper habitat appears to be on the mountains; though it comes down nearly to the sea-shore, following the course of rocky mountain streams, where the atmosphere is kept humid by the spray of the water. The deep rich indigo-blue of its numerous flowers, and their long succession from the lateral branches, combine to render this species well deserving of cultivation, provided it can be brought to flourish in the drier climate of our gardens. It will require a loose, peaty or sandy soil, careful shading from the mid-day sun, frequent sprinkling with water, and to be covered with a glass in hot, dry weather. It will bear some frost, but may likely prove more impatient of cold than our native species of the genus. In a Wardian case it would probably succeed very well. — *Bot. Mag.*

ORCHIDACEÆ. — *Gynandria Monandria.*

Ancatochilus setaceus. One of the most exquisitely beautiful of all plants in the hue and marking of its leaves, not to be imitated by art. Their colour is a rich velvety green, tinged with copper, and over that appears to be laid an exquisite golden network: the under side is quite different, of a reddish tinge, with obscure yellow veins, but all that is most beautiful is exposed to view. It is a native of damp shady woods in Ceylon, Amboyna, and Java, and probably of the Indian islands generally. It requires to be grown in a stove, kept constantly moist, and covered with a bell glass. — *Bot. Mag.*

PLUMBAGINÆ. — *Pentandria Pentagynia.*

Statice macrophylla. This splendid plant was introduced, we understand, from the Canary Islands by Mr. Smith, of the Botanic Garden of Hull; and it is now much dispersed among the gardens of this country, where, grown in a large pot, and kept in the greenhouse, it bears its large panicles of purple and white flowers during the month of April. — *Bot. Mag.*

CONVOLVULACEÆ. — *Pentandria Monogynia.*

Ipomœa Hardingii. An hybrid, raised by Mr. Harding, gardener to H. Bevan, Esq., of Glynn Garth, Beaumaris, between *I. rubro-carulea* and *I. Horsfallii*: the flowers appear to be intermediate; but the foliage differs very much from that of either of those species. — *Pax. Mag. Bot.*

CYRTANDRACEÆ. — *Didynamia Angiospermia.*

Chirita sinensis. This charming little greenhouse plant is one of the first results of any importance from the voyage to China by Mr. Fortune on account of the Horticultural Society. It was sent home in a wooden case, and its beautiful, large, lilac, fox-glove-like flowers were open when it arrived. It appears the plant belongs to the genus *Chirita*, distinguished from *Didymocarpus* by its stigma, having the upper lip abortive, and the lower two-lobed. Those who see what this is, may judge how desirable it would be to obtain from India the other species of the genus, among which are some still finer; and they are all so easily cultivated that they are just the things to introduce into gardens. Anybody who can grow a *Gloxinia* can manage a *Chirita*. — *Bot. Reg.*

ORCHIDACEÆ, § VANDEÆ, || MAXILLARIDÆ. — *Gynandria Monandria.*

Anguloa uniflora. This new species of the long lost genus *Anguloa* was flowered by Mr. Barker, of Birmingham, in April last. We believe he received it among Linden's collection in Columbia; according to Ruiz and Pavon it is found in precipitous places about Muna and Chincao in Peru, and profusely in the woods of Tarma, where it is called *Carpales*. It is a sweet-scented plant, with large white flowers, slightly tinged with yellow, and the whole habit of a *Lycaste*, to which genus this approaches very nearly. — *Bot. Reg.*



1. HOYLES TITUS - 2 HOYLES CHAMPION

ON PELARGONIUMS.

WITH AN ENGRAVING OF H. LYNCE'S TITUS AND HOYLE'S
CHAMPION.

THE present being the season when cultivators of this favourite flower are making inquiry for new varieties to add to their collections, in order to compete successfully next summer, we have thought it better to publish our figures now, while they may be useful to purchasers, than to reserve them for the next volume, when much of their interest would have passed away.

Our plate last month contained two seedlings raised by that successful cultivator, P. E. Lync, Esq.; the present are the production of the equally eminent raiser, G. W. Hoyle, Esq., of Guernsey; they are now in the possession of Mr. W. Miller, nurseryman, of Ramsgate, who, we believe, has a very healthy stock of the plants, Lync's White Titus and Princess Alice, Hoyle's Champion, and Beck's Zanzummin, are six that will be found in the best the season has produced.

While on this subject, we should like to call the attention of our friends who are growers of Pelargoniums to that inexplicable and destructive disease known commonly as the "spot;" we have many and conflicting accounts of it, in some instances resulting, or appearing to do so, from an excess of moisture; in other cases the contrary treatment has prevailed, and yet the plants have been equally subject to its ravages. We are desirous of doing something towards the suppression of this pest, and as the best means of deriving a correct opinion as to its origin, we invite those interested to send us a statement of its first appearance with them, and under what circumstances it seems to extend with the greatest rapidity, and if any and what remedy has been applied, together with the result.

It is generally regarded as the work of either a parasitical fungus or some extremely minute insect; but we are fearful the primary cause will be found an inbred constitutional weakness, caused by the very high breeding the plant has been subject to, for we have never been cognizant of an attack of the same nature on any of the old kinds, which retain their original

robustness in nearly all situations. The Pelargonium "spot" may, however, be found of the same origin as that which infests to so lamentable a degree the Carnation, which has been attributed to a continental importation. This will probably be determined by the data we request.—EDITOR.

LIST OF CARNATIONS AND PICOTEES.

SOME misconception having arisen with regard to the descriptive list written by me, in last month's "Florists' Journal," I beg to state that I did not intend it as a list of *all* the best in cultivation, but an account of a few good ones I had either grown myself or seen in cultivation. Some errors crept in in the course of printing: "Wildman's Isabella," "Orson's Adelaide," and "Jessop's Sir William Middleton," are inserted under heavy-edged *rose* picotees, instead of heavy-edged *reds*; and "Sykes' Eliza" is said to be one of the best *reds*, instead of one of the best *roses*.

H. H. D.

CALENDAR FOR DECEMBER.

IT cannot be too often repeated, that the present season of the year is that in which the principal feats which are intended to be achieved during the following season should be planned and arranged; the requisite appliances should subsequently be provided at the most favourable opportunities, and then little or no delay will be experienced at the time of action.

PLANT STOVE. The ordinary stove plants should be still maintained in a state of rest; the temperature may be 65° by day, 60° by night, maintained as evenly as the opposing force of the external elements will admit. Keep not only the plants, but the pots and surface of the soil, free from filth of any kind, by prompt corrective operations: this is of much importance to their health, and ministers in no small degree to the pleasure of inspecting them. Plants which were excited for early flowering

last month should be gradually submitted to a higher temperature, but not exceeding 70° of artificial heat; others to succeed them should be "forwarded a stage."

GREENHOUSE. Keep a cool dry atmosphere, if the health of a general collection is studied, and the flowers are required at their natural seasons; if otherwise, a little extra heat must be applied. In ordinary cases, 45° is sufficient, with plenty of light, and also of air, when the latter is not too keen. Avoid draughts, or currents of air, or any thing which would rapidly dry up the moisture in the soil, and render a fresh application of it often necessary; for this reason a preponderance of *top air*, and a less proportion admitted directly about the pots, is preferable. In the pits and frames, the main objects are to exclude frost securely, admit light and air abundantly, and apply water sparingly.

FLOWER-GARDEN. The protection of all kinds of plants that need it, some from extreme or suberabundant wet, and others from cold, should be attended to. Florists' flowers, and bulbs generally, require the former more than the latter; and such is likewise the case with many herbaceous plants. In all cases, too, it should be the first step in affording protection against cold. But little else can be done to the plants; and advantage should therefore be taken of all spare time to prepare composts, flower sticks, labels, and such other articles of use as are likely to be in requisition during the ensuing season.

We have now had the pleasure of directing the attention of the amateur cultivator to the principal features which should regulate his gardening operations during one entire season; in doing this, we have all along referred more directly to the principles which should overrule his operations, than to the details of the operations themselves, since these latter will be found to vary almost in every case, whilst the former, if true, are immutable. In closing this brief acquaintance, we cannot do better than recommend the motto, "Science with Practice;" let practice be always guided by correct scientific rules, and it will be — it must be, improved.

T. M.

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