THE

EXOTIC GARDENER;

IN WHICH

THE MANAGEMENT OF THE

Hot-House, Green-House, and Conservatory,

Is fully and clearly delineated, according to Modern Practice;

WITH AN APPENDIX,

CONTAINING

OBSERVATIONS ON THE SOILS

SUITABLE TO

TENDER EXOTICS:

TOGETHER

WITH A TABLE,

Shewing the particular Soil proper for each Genus, and a Calendarium Florum, for every Month in the Year;

Containing all the Species known to be cultivated in the above Departments.

BY J. CUSHING,

FOREMAN TO MESSRS. LEE & KENNEDY, OF HAMMERSMITH.

SECOND EDITION, MUCH IMPROVED.

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1814.

TO THE RIGHT HONOURABLE

SIR JOSEPH BANKS, BART.

PRESIDENT OF THE ROYAL SOCIETY,
&c. &c. &c.

SIR,

THE allowance, to so humble an Individual, to place Your Name to this Work, will for ever be a proof, that your Love of Science and useful Knowledge is confined to no rank of Society. Such kind conduct, and liberal encouragement, to men in my situation, stimulates their exertions, and makes labour light.

I am, SIR,
Very respectfully,
Your most obedient
and obliged Servant,
JOHN CUSHING.

Hammersmith,
Nov. 1, 1814.

INTRODUCTION.

Such is the force of natural habit throughout the universe, that even vegetables, natives of the warmer climes, between or near the tropics, cannot exist when transported to the more Northern latitudes, unless art steps forward to their assistance; thence necessarily proceed the numerous glass erections throughout our Islands, under the denominations of Hot and Green-houses, &c. &c.

In the general acceptance of the term Hot-house, it is understood to mean a department, solely appropriated to the reception of those plants indiscriminately, which for the greater part of the Year require the aid of artificial heat to preserve,

or bring them to a certain degree of perfection in our Northern regions; but convenience has rendered it necessary, to have separate houses for many of them; epecially such as are cultivated for their fruit, which is generally wanted in quantity; a circumstance which has urged the researches of man so forcibly forward, that the cultivation of these plants is pretty generally known at the present day. Therefore, in speaking of the management of Hot-houses, I must not be understood to mean those which are used as Pine stoves, or Forcing-houses, the operations peculiar to these having been already so frequently, and so ably discussed: my purpose being to confine myself merely to those in which tender flowering shrubs, and other ornamental plants are cultivated; which are for the most part intended, for the instruction, or amusement of the proprietor.

At a period when the other branches of Horticulture are making such rapid strides

towards perfection, it is time to attempt something in the form of a regular system for this, and I hope it will not be thought less deserving of a detached treatise, than many of the others that have been thus treated of, though it is much to be lamented, that the task should have been left to my feeble efforts; especially when it is considered, that the uncouth manner, in which a practical man is generally obliged to explain his ideas, never fails to operate strongly against his doctrine.

That the lives of Plants in general are as uncertain as those of animals, is I conceive an indisputable fact; the Proprietor must therefore be prepared, to witness some of his most valuable ones, decline, and die occasionally, through mere old age, or some casual infirmity; and when the expense, risk, and trouble, (without which few collections are acquired,) are taken into consideration; it can be an object of no small importance with Gentlemen, to have theirs kept as near to a state

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of perfection as the nature of the subject will admit; that is, to have their grown Plants managed in such manner, as to produce their flowers and fruit in abundance and of good quality; and also a proper supply of healthy, young Plants, for the purpose of filling up any occasional vacancies which may occur, by the others becoming unsightly, or dying through any unforeseen cause.

To enable gardeners to compass the above objects, is the purpose of the present work; for which reason I shall as concisely and explicitly as in my power, lay down the practice which I myself have followed, in the cultivation, and management of Plants in general; by the regular observance of which, I have always found myself plentifully repaid, by the result of my labours, and the satisfaction of my employers. A practice, which I by no means wish to offer the Public as merely the result of my own experience, but one that I am convinced will be no less favour-

ably received, when it is known to be that which is adopted by men, so very eminent in their profession, as my much respected employers, Messrs. Lee and Kennedy of Hammersmith; and several others of the principal cultivators of Plants in the neighbourhood of London.

In arranging the work, I have endeavoured to follow the seasons as closely as possible; whereby, the reader can refer to the operations of any specified time, with as much ease as in the most regular Calendar; each of the Parts, being divided into Chapters, &c. wherever the nature of the subject would admit of such convenience.

The first part treats solely of the Hot-House division, beginning with the *propagation*, by seeds, cuttings, layers &c. &c.; and then proceeds, in the following divisions, to the *general cultivation* of Tropical Plants: in doing which, I have endeavoured to be as explicit as possible, and at the same time to avoid that tiresome

prolixity so frequently met with in works of this nature, consistent with the necessary detail of the business.

The second, and third Parts, contain the operations of the Green-House, and Conservatory, in which the same method is regularly observed; in addition to which, is an Appendix, containing a few brief observations on Soils, and their subsequent preparation for use; with two Tables, the first shewing the most proper soil for each particular genus, and the other a complete Calendar of Flowers for every month in the year, regulated into quarterly divisions; so that any Lady or Gentleman can with ease, form a list of those Plants they may want to flower in any particular month, throughout the year.

It is presumed the short but comprehensive Index added to the present edition, will make it more acceptable.

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EXOTIC GARDENER.

PART FIRST.

OF

THE HOT-HOUSE.

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SECTION I.

Although most frequently the first effort of a collector is to supply himself with a stock of grown plants from the nursery, yet they are no sooner in his possession, than he thinks of applying himself to their propagation; and indeed in all probability, may have a quantity of seeds by him; which few gentlemen are without the means of procuring either from their friends in

foreign settlements, or at home: in which case, there is no time to be lost; as tropical seeds in general, are so very liable to lose their powers of vegetation by reason of the transition from warm to cold climates, combined with the length of time which commonly intervenes between their gathering, and arrival with us, especially if they have been exposed to damps; on that account they should be sown as soon as they arrive, at least a part of each parcel. Much depends on the state of the seeds when received; East and West India seeds generally arrive with the regular fleets, as indeed do those from the Cape of Good Hope, and all the South Sea Islands, for the most part by the Eastern and China ships; so that one may in general be prepared against their arrival. As early spring is undoubtedly the best time for sowing, a few weeks delay may in some instances be adviseable. If received late in October, or November, I should certainly wait until January, or perhaps February, unless it evidently appeared they would not keep out of the earth so long a time in a vegetative state; such as can be sown before August have a good chance, to acquire sufficient strength of growth to carry them through the winter

months, so adverse to the general efforts of young vegetable life.

It may be very well supposed that every gardener will have in readiness his stock of the different sorts of mould necessary to be used in this business; such as loam, peat, well rotted dung, vegetable mould, sand, &c.; all of which intended for this purpose, should be finely sifted, and kept separate until wanted for use. A quantity of pots should also be prepared by *cleaning*, if they have been before occupied, but I should prefer new, and if what is commonly called the old fashioned or flat pot be neatly made, that is, to be something wider at the rim than deep, and contracted to about two-thirds of its depth, in width at bottom, inside measure; it is I think the best for this use; because the young seedlings not having a body of roots, sufficient to exhaust the quantity of moisture which might be retained, in the large portion of earth necessary to fill the perpendicular sided pots, it would in consequence be liable to become sour and coagulated; and thereby become extremely injurious to the young plants, by producing moss, and other filth, and also occasioning the tender fibres to rot whenever they

begin to penetrate into it. At all events, be the pots new or old, it is of importance to have them *perfectly dry and clean;* they must be filled about one-third with tiles, or old pots, broken small for that purpose, having previously covered the bottom hole with one of the largest, the concave side, if any, turned downward. As it will be necessary to have some of the mould sifted much finer than the rest, for the purpose of surfacing and covering the pots intended for the smaller seeds, it may now be done, (having previously well mixed together its component parts,) and about an inch of the siftings of it put over the tiles, which will prevent the finer mould working down through them, and prove of infinite benefit to the young plants—the pots should then be filled with that kind of compost which is observed to be most congenial to the species of plant of which the seed intended to be sown, has been produced; for which see Table of Genera; let it be pressed down to about a third, or half an inch below the edge of the rim, according to the size of the seeds; if they are small, or light sorts, it will be necessary to press it pretty tight, and to add a little of the very fine sifted mould on which to deposit the

seed, previously smoothing it with a bit of thin flat wood, bent so as to lie on it level. Being thus prepared, let the seed be sown regularly on the surface, and cover it from about an eighth, to a quarter of an inch, according to the size of the seed as before, with the same sort of fine mould. But if the seed is of the largest sorts, as for instance, the nut, or stone kind, no more is necessary than to press them into the earth with the finger, and covered somewhat thicker than is recommended for the others. In either case, the covering should be pressed moderately on the seed with the hand: which is indeed, in my opinion, a most necessary caution in sowing seeds of any description whatever. My reason for remarking on this is, because I have witnessed, in many of the nurseries, as well as gardens, seeds sown and left not only without being pressed in as above directed, but almost uncovered; the evil tendency of which in places that should set the example, at least in sowing seed, must be evident to the commonest observer. No gardener should ever neglect to put the name or number to each species as they are sown.

I have sometimes practised with success, a method recommended by many eminent men of

my profession, in order to ensure the vegetation of hard or very tough shelled seeds: which is, to have them soaked in water for a few days; say a week; or even ten days for such as happen to be very dry, previous to sowing: a shallow pan placed on the coolest part of the flue in the hot-house, is the readiest and safest article to receive them for this purpose; they should be examined daily, and sown the moment any sign of swelling or growth appears:—this process, however, I can by no means sanction for general use, as it is fraught with danger to many of the lighter, and smaller sorts.

The sowing being finished, the pots must be set on a level spot, and gently but thoroughly watered with a pot the rose of which has been made particularly fine, for this and other such uses; and immediately plunged in a strong heat, without which they will not be likely to vegetate: if a close dung hot-bed the better. A regular but moderate watering, steady heat, and occasional weeding, should any such appear, is all they will now require until they are fit to be removed into separate pots; which may be done as soon as they have attained a few inches growth above their cotyledons, or seed leaves:

to perform which, ample directions will be given when I come to treat more largely, under the head of cuttings, on that subject.

There are some fruit, such as Nelumbium, whose exterior coat is so very hard, that the embryo plants are not able to burst through; at least with us; to remedy which, the knife is not unfrequently used to pare them thin, even to making a hole in them, but not too near the eye or part where they sprout, with good effect.

If the business of seed-sowing is performed in spring, or early in summer, which I would prefer to later seasons, the smaller sorts may be expected to vegetate in the course of five or six weeks at farthest; whereas, the larger boney kinds will sometimes remain dormant in the earth for the space perhaps of twelve months: this must be attended to, else one might think them beyond a chance of growing, and perhaps throw them away without examination. Whenever there is any doubt of their vegetating, let some of them be taken up and opened with a knife; when they will at once discover whether they are sound or not. If sound, they must be still kept in a strong heat and regularly watered as before: for want of this simple precaution, I

have sometimes seen valuable seeds carelessly thrown on the rubbish heap, when just bursting their shell or embryo; and not unfrequently, by that accidental check, so materially injured as to prevent more than one half of them vegetating again; if they have been at all so fortunate as to be noticed and resowed.

SECTION II.

Laying, and inarching, are also convenient methods of propagation; but are rarely practised on hot-house plants. However, there are some that do not produce roots freely by cuttings, which may be done pretty successfully by these methods; and though the operations requisite to the proper execution of them be pretty well known by most gardeners, yet I hope it will not be considered unnecessary for me to give a few additional hints on the subject.

In laying, choice should be made of the young tender shoots of the present year; the soft bark of which will sooner form a callosity, and produce roots, than that of any of the preceding years growth. It is particularly necessary to observe, whether the plant intended to be layed

is of a brittle nature or not; for if it is, it will be necessary that the shoots be pegged gently down to the surface previous to laying, and thus left, until their tops naturally acquire a perpendicular direction, which they will do in a few days; without this precaution it would be extremely difficult to tongue them without cracking, or breaking them off; but if treated in this manner, the most brittle may be layed without danger.

By tonguing, is meant the operation of cutting a small longitudinal scalp about half an inch in length, on the inner side of the heel or bend which is to be inserted into the earth; about one-third of it should be cut off in a transverse direction; it being so placed, that the transverse cut may be immediately on or below the joint: but by no means is the whole of it to be cut away, as practised by some, it being the part which in most instances produces the first fibres. Having the layer thus prepared, the earth must be opened with the hand about three or four inches deep, and in the direction of the shoot, into which opening, it would be adviseable to put a little fresh loam or sand for the immediate reception of the layer; which should be fixed

therein at least three inches under the surface, the tongue should be gently twisted sideways so as to prevent its resting within the heel or bend, and the mould immediately closed tight over it; as many layers as are wanted being thus made, let the whole have a moderate watering to settle the mould, and be set or plunged in a good growing heat; as it is of considerable importance to keep the parent plant in a free thriving state.

There are many plants which produce roots so freely, that should a branch even touch the surface of the ground, they strike almost immediately; these every gardener will soon become acquainted with by their natural efforts, and therefore, will find it sufficient for their increase merely to insert them in the mould: noting however, that a slight twist on the part inserted will considerably promote their rooting.

It is a conclusion drawn from several experiments, that the layer, which is inserted to a proper depth, roots sooner and better than that which is layed near the surface; the self-evident reason of which is, that the deeper they are the air is better excluded, and there is a more regular degree of moisture for the nourishment of

the young fibres, when they make their appearance. I must also observe, that no part of the shoot should on any pretence be covered with the mould, except that which is meant to produce roots, as the covering the whole, renders it extremely liable to rot: and therefore, if any particularly tender plant should happen to be thus treated, it would evidently endanger the whole stool. This may seem an unnecessary observation to some, but I can assure such, that I have seen layers, made by people, who thought themselves extremely clever, where none of the parent stool was left in sight, except the tops of each individual layer: what was the consequence? in a few months one half at least of the stools, without the least spark of life remaining; and of the rest which were so fortunate as to survive, perhaps not one tenth of the shoots layed, produced plants.

Inarching is a species of grafting differing from it in these particulars, that whereas in grafting, the scion is at once totally separated from its parent plant, and the head of the stock is cut clear off before the splicing takes place; here, on the contrary, neither the scion is separated from its parent, nor the head of the stock

cut away, until the union becomes so far complete that the first is unnecessary, and the latter injurious. It is in consequence, much preferable to the common grafting, for evergreens in particular; it is principally practised as the best means of multiplying all the double varieties of Camellia and plants of similar habits; because their strong leaves, if only for a few days deprived of their regular support, by being cut clear from the mother stock, if not covered closely with a glass will be certain to wither and fall off; after which, there will be but very slender chance of the scion's completing an union: it is performed as follows.

Having provided a stock, which should always be some of the coarser, free kinds, of the same genus of plants, and nearly of the same diameter as the shoot which is intended for inarching; cut a thin slip, from two to three inches long, and about one third or something better of the whole thickness, smoothly off from each of them, in the clearest part of the stem with a small sharp knife; (a most necessary instrument for this business,) the bark of each must then be fitted together in the exactest manner, at least on one side, and tied perfectly tight with good

matting; they must be clayed in the same manner as grafts; and as being within doors in a warm house will occasion the clay to become over dry, and in consequence liable to crack, they should, at least in dry weather, receive two or three times a week, some water from the rose of a water pot, or by means of a syringe, to preserve it in a moist proper state, observing to do it in the evening lest the leaves should get scorched by the rays of the sun: a little moss tied neatly round each ball of clay will prevent the water being so frequently necessary: which is in my opinion very desirable. Eight or ten weeks will in general be found sufficient time for them to unite; at all events, by that time, I think, they may be partially separated from the parent plant by cutting the inarched shoots better than half way through; and if, on trial, they are found to be united, and bear that operation well, they may in a few days afterwards be entirely cut off and placed in a shady part of the house, where they must be kept moderately syringed as before, and some additional shade given according to the state of the weather for two or three weeks; during which time, they may be untied, and the top of the stock cut off in a

neat manner; and also any unnecessary part of the bottom of the scion that may remain: let a little clay be again applied, that these fresh wounds may have sufficient time to become properly healed, which they will in a few weeks. In this manner have I succeeded with Myrtus Pimento, and other plants allied to it, which are particularly difficult to strike or propagate, by any other means, on the common myrtle with tolerable success; and also many other plants of the same description upon their kind.

SECTION III.

I believe that it may be safely averred, that as seeds are so difficult to procure in a good state, none of the above methods of cultivation are so certain as that by cuttings for a general supply; I shall therefore speak more at large on that head, and also give some additional hints concerning the management of the others, when arrived to the state of Plants.

Besides the usual supply of the different sorts of earth, &c. there is another article necessary to be provided before we begin the business of making cuttings; which is, a few dozen of

small bell glasses, (the white glass is best,) of as many different sizes, as are the pots in which the cuttings are intended to be planted; they should be fitted to the pot so as to rest on the inner side of it, about an inch below the rim, by observing which circumstance, when the pot is filled with earth, the glass will have room sufficient to sink a little into it, so as to perfectly exclude the external air: which is of very essential importance to the cutting while in a dormant state, that is, from the time they are put in, until they begin to grow.

The cuttings of Hot-house plants may, with pretty tolerable success, be made almost every season of the year; yet, the months of April, May, and June, are certainly the most proper; as the plants are at that season plentifully supplied with young wood, which in most species, that I am acquainted with, produce roots when made into cuttings, much sooner than the old wood will if used in the same manner. When the day is fixed upon for this business, let a quantity of pots of the proper size be prepared; I seldom use larger than those of one shilling, or for the largest cuttings, those at one shilling and six-pence per dozen, or as they are generally called forties, and forty-eights. They must be

drained in the manner already directed for seeds, for the purpose of keeping the bottom of the pot as free from stagnated water as possible; and then, as wanted, about half filled with the compost best suited to the plant intended to be propagated, to grow in for a few weeks, when first struck, (see Table of Genera,) and the remaining, part with the best loam that can be procured, to insert the cutting in when ready. On the purity, and clearness of the loam, I think, depends in a great measure the success of many of the tenderer kinds of cuttings; particularly those which are obliged to be kept in moist heat, as it is, when contaminated with other composts, very liable in these situations to cause damp and rottenness, by the particles of putrifying matter generally contained in mixed earths; and the properties of which are put in motion, by the application of heat. As an exception to this rule, may be adduced sand; which is of very great utility to mix with the loam, should it happen to be rather stiff for the nature of the cutting: but then, the sand proper for this use is of so pure a nature in itself, that it is evident, it cannot have the effect noticed above in regard to mixed soils.

In the choice of cuttings, preference should

be given to the firmest wood of the same years growth; and of these, only such whose leaves have attained their full size, and proper colour, which are generally to be selected from the lateral shoots: as the upright leading ones are mostly too luxuriant to make good cuttings. I have observed that the cuttings of many plants, if taken from the lateral shoots, never become proper erect stems; but are inclined at all times to form an irregular, bushy, weak head: this is not of small importance to such collectors as cultivate plants *merely* for the flower; as such heads generally produce them sooner than luxuriant leaders. To the lovers of handsome erect plants I would however recommend to choose their cuttings from the upright shoots, early in the season, before they acquire that luxuriance of growth so unfit for the purposes of propagation. The tops of the shoots are to be preferred, unless they happen to flag before used. To prepare them for insertion, most of the leaves must be trimmed off close to the stem, leaving only a few at the top, to allow a free respiration of the air necessary to the life of the plant. This is a most essential article in the art of making cuttings, particularly those of

evergreens; for if they are deprived entirely of their leaves, or that they otherwise flag, or occasionally fall off soon after they are put in, there will be little or no chance of their growing. The reason is obvious, because the inherent sap of the cutting, being deprived of these organs of respiration that kept it in motion, and the cutting having no roots by the efforts of which to produce new leaves, the sap, consequently, becomes stagnated in the pores of the wood; which, like the stagnation of the blood in animals, will in all likelihood prove mortal, by occasioning an immediate mortification.

In shortening each cutting to the most convenient length, care must be taken to do it with a clean cut, in a transverse direction; and by no means should they be left exposed, or to lie any considerable time before planted. In planting, a small dibble or other convenient instrument should be used to press the loam sufficiently tight, to the base of the cutting, as that is the principal part to be made fast, as soon as the whole are inserted and the surface of the mould made level and a little firm, give them a gentle watering to settle them; they should be left to soak about a quarter of an hour, and

then covered with the bell glass, which should be pressed pretty tight so as perfectly to exclude the outward air.* If there are several cuttings of the same sort, they may be all put in one pot, unless they happen to be very large, or curious sorts; but I would advise to have each species kept in a separate one, on account of the difference in time that some of them require to strike roots; and also, that any scarce, or valuable kind should be put only one in a small pot, as they then are not liable to be injured so much by damp; neither do they require to go through the precarious operation of separate potting, so soon after being struck.

Should it be requisite to have a considerable quantity of cuttings made at the same time, it would be proper to have a one-light box, with close glasses, (such as are used for raising

* Here a curious circumstance offers itself to the philosophic eye, viz. that the cutting should be more certain of growing, by being enclosed within a glass, like the receiver of an air pump: which proves, the necessity it is under of living (as I may say) on itself until rooted: the atmospheric air being prevented by the glass from exhaling any of its juices, all its powers are forced downward to produce those roots, and they will soon prove their existence by producing young leaves and branches.

early cucumbers,) placed on a moderate hot-bed ready to receive them. It should be covered with saw dust, or clean tan, about a foot deep, in which to plunge the pots: but if there are only a few done, they may be plunged in any frame among other things, provided there is a moderate heat.

They will now require the most particular attention as to watering and shading. The water must be given twice or thrice very moderately until the earth becomes sufficiently moist, which, if once so, will retain the moisture for a length of time, by being covered with the glass: but the shading is the principal care whenever the sun's rays fall on the glasses, as nothing will create rottenness sooner than letting the leaves flag, and lie upon each other, which will be the positive consequence of a neglect of shade. The most advisable method to do it, is, in my opinion, to have a few large sheets of strong paper, to lay over the glasses within the frame; which at the same time that it shades the cuttings, does not prevent the sun's rays from entering the frame and clearing off any damps that may be accumulated therein: whereas if matts are laid on the

outside of the frame light, it is evident they will tend to have the direct contrary effect. However, in the course of a week or fortnight, they will be able to withstand a little of the rays of the morning and evening sun.

While in an inactive state, they should be kept rather dry, but not let to an extreme; else the bark will become shrivelled and occasion a very smart falling off amongst them; on the other hand, should they be kept in an over moist state, the consequence, would not be less disagreeable on account of the damp, occasioned by the air being so closely confined under the glasses; in this case it would be of infinite service, to have the glasses wiped with a dry cloth about once a week, which is quite sufficient for hot-house cuttings, as they are not so liable to suffer from this cause, as those of green-house plants.

As the heat of the bed declines, it will be necessary to have another properly tempered ready, in which to plunge them, when requisite; or otherwise, let the old one be renovated with linings of fresh warm dung; but in such manner, as to avoid creating any violent degree of heat or strong rank steam in the bed; as it

is better to do it often and but slightly at a time, it being but a trifling encrease of labour, compared with the probable consequences. By this management one may expect to have some of the free growing kinds well rooted, and making rapid progress, in the course of a very few weeks; when such is the case, it will be necessary to give them a little air by taking off the bell glasses at night, and to keep them a little moister than before. If they endure this pretty well for a few days, the glasses may be left off entirely; which will harden and prepare them by the time in which it may be thought convenient to part and pot them separately.

In taking the bell glasses off at night, it is necessary to observe that from their closeness they sometimes occasion the cuttings, more frequently the harder sorts, to produce young leaves and even shoots, before they have sufficient roots: if at any time these should be mistaken for well rooted plants, and their glasses taken off accordingly, in a few hours they may be perceived by their leaves beginning to flag; in which case the glasses must be immediately replaced; otherwise, if neglected, these tender shoots will be utterly spoiled, and it will

be a very great chance whether the cutting will ever produce more or not.

Should the above circumstance happen, they will be observed to be more impatient of damp afterwards: as indeed will all those be which are growing; the glasses should therefore be more frequently dried, and kept off until the leaves, &c. which were under them become dry by evaporation; lest we risk their success, I may say perhaps, their existence, by rotting the first weak efforts towards active life.

The rooted cuttings being thus prepared, they may be occasionally taken out of the frame and set in more exposed airy situations, in the hot-house: but as some kinds require a much longer time to produce roots than others, it will be necessary to keep such still in the frame, shading and watering them when requisite, as already directed. Thus may they be treated until the autumn; when, if any yet remain in the cutting state, it will be adviseable, (when the plants have been settled in the stove for the winter,) to have them taken there also; previously clearing them from any damps, moss, or weeds that may have grown amongst them, and renewing the surface with a little fresh

loam. If a warm corner of the pit can be solely appropriated to them, without deranging the contour appearance of the house, so much the better; if not, they may be plunged along the front of the pit, in the interstices which are left between the plants. Here they will require the same care as when in the frame, except that as the influence of the sun decreases, so must the shading in proportion; using it only for two or three hours in the middle of the day, if at all requisite: and indeed it is necessary here to observe, that in the winter, and early spring months, they must not be shaded on any account, nor watered except when absolute necessity requires it: neither should the cuttings that may be occasionally made at these seasons, receive any water when first put in, as directed for those made in summer, as the mould will be found in general sufficiently moist, in itself; and as there is not that quick principle of vegetation at this season, the water might prove materially injurious, by promoting damp and rottenness. It is even necessary in some instances, should the cutting be of a succulent plant, or in any degree approaching that nature, to provide loam rather dry, than moist; in

which they must be planted and left without water, until they have completely formed their callosities,* and the wounds are healed: however in either case, those fresh put in must be partially shaded for a few days, should the weather happen to be clear and sunny. It will be also necessary, to dry the inside of the bell glasses more frequently in the *winter months;* as there is generally a stronger heat kept in the tan pit, which gives rise to an encreased evaporation; and damp at this season, should be more particularly avoided than at any other. In the ensuing spring those put in early, as well as what have remained since the preceding summer, will in general make an effort to grow; as soon as they are observed in this state, let them be managed in the same manner as those already rooted have been.

In regard to parting and potting the rooted cuttings or seedlings separately, the greatest nicety should be observed; first in turning them out of the pots without lacerating the roots; and secondly in shaking and working the earth from amongst them, until they can

* A swelling or first effort towards rooting formed at the base of each cutting.

be readily parted without breaking: if any of the mould can be conveniently preserved to them, so much the better; but the preservation of the roots should be the principal object. They must be immediately potted in their proper soil, in pots suited to the size of the cuttings, and neatly tied up if necessary; let them be then well watered with a rose pot moderately fine, but by no means should they be flooded, or slushed with it as too many are apt to do, but let it be given gently, and time allowed for it to soak regularly into the mould. They will require a brisk heat and close shading for a few days, until they have established themselves in the fresh mould; and though some of them may require a longer time, the generality will be fit to remove in a few weeks and set amongst the other plants.

Thus may, in most instances, be procured a stock of young plants of those kinds, of which it is difficult to procure seeds; as hot-house, or tropical plants in general, are not free in ripening their seeds in our climate, and when received from abroad, are seldom worth much for the reasons already noticed.

It may not be amiss here to remark that there

are several plants which may be propagated by the leaves only, such as many of the Messembryanthemums, Aloes, and other succulents; also some woody plants, as the Xylophylla; the leaf of which when put in as a cutting, will actually put forth branches, and become itself the stem: though I believe they are never known to produce them while on the parent plan.—Bryophyllum will, from the crenulations of its leaf when detached from the parent plant, produce both roots and stems; each of which becomes a distinct plant; so that one leaf may produce six, eight, or ten plants: and that without any particular care more than to be laid on the surface of any pot of mould in the hot house, in the position in which it naturally grows.—There are several others that will root freely, by the leaf, but require to have the bud at their base detached along with them, otherwise they will never become plants; though they may fill their pots with roots: instances of which I have frequently witnessed: as in Camellia, Hoya, &c. &c.

There are some plants which are only to be encreased by parting the crown of the roots with a knife, such as Strelitzia for instance, in

which operation particular care must be taken to preserve the fibres, and to have a portion of them attached to each division. The Scitaminæ, or ginger-like plants, are readily encreased in this way, as are herbaceous plants in general. Others, as in Dracontium, which produce fibres along the stem in the free air, almost immedately become distinct plants by its being cut into lengths and planted. Palms, a very magnificent family of plants, are to be encreased by offsets or seeds, and the Bounapartia, a genus from South America by Cavanille, an eminent Spanish Botanist, is, I fear, to be done by seeds only, as I have tried several experiments on it, but hitherto without success.

Many bulbous plants that rarely produce offsets, and which have thick coats like an onion, may be encreased most abundantly by slicing them transversely a little above the middle: an accident which happened to *Hæmanthus pubescens*, first taught us this practice, and it has since been practised on several of the rarer *Ornithogalums* with success. The young bulbs form abundantly near the margin of the outer coat.

CHAPTER II.

SECTION I.

HAVING in the preceding chapter dwelt pretty largely on the different methods of propagation, I shall now endeavour to explain my collected ideas on the general treatment and cultivation of tropical plants; to attain a perfection in which, as far as may be, the principal objects to which one should direct his attention, are, assiduity in keeping up the stock by propagation; a careful nicety in potting, and shifting in the proper season: a regularity in watering when requisite: a thorough knowledge of the temperature necessary to be kept in the house: and a steady attention to the cleanliness, and habits of the plants in general: objects for which ample directions will be found in the following pages.

The business of shifting, (as it is termed by gardeners,) or refreshing the roots of plants with earth properly prepared for that purpose, and transplanting them into larger pots than they before occupied, is one of the most neces-

sary operations required to keep them in a good state of growth; I mean those only which are cultivated in pots. The quantity of earth contained in a flower pot being in comparison so small, to that which is requisite to the support of the generality of plants, it must be supposed that unless it is changed or augmented in due season, they will soon exhaust every particle of vegetative matter contained therein, though frequently assisted by proper water, which doubtless contains a large portion of the food of vegetables—The consequence of which is to the weaker growing, and tender kinds, that its salts being dissolved, and the sandy particles which kept it in a free open state washed away by the frequent and long continued ablutions, it becomes, as noticed in the case of ill-drained pots for seeds, sour and coagulated; and the plant, being no longer able to draw its proper nourishment from it, must inevitably decline, and at last becomes a nuisance to the collection, by breeding insects and filthiness: to the stronger sorts, though in a different manner, it will be no less pernicious, by starving them, and thereby occasioning them to dwindle into naked stems, and awkward unsightly forms.

The season which I think most proper for shifting hot-house plants, is about the middle or end of April; at which time I have always made it a rule to begin that operation, with the plants under my care; having found it conduce far more to their advantage, than if done much earlier or later.

If done earlier (though some hot-house plants may be said to be in a state of growth for the greater part of the year) the generality of them will be found dormant; and therefore will not have the power, to establish themselves sufficiently in the fresh earth to prevent a great part of their leaves falling off, and the whole plant acquiring a sickly appearance; and on the other hand if done much later, most of them will be in a vigorous state, and it will require infinite care, and encrease of labour to keep them properly shaded, else the intense influence of the sun on them, at an advanced season, will have, though a different cause, nearly the same effect; and reduce them to fully as disagreeable a state as the former case. But if taken, soon after they have made the first effort for the seasons' growth, the fibres being set in motion, and not having a top full of young tender

leaves to support, they soon find their way into the fresh mould; and the plants, by being thus taken in time, and when done, placed in a brisk bottom heat to assist them, will in the space of three or four days at farthest be well recovered, and in general, able to support themselves against the strongest rays we may reasonably expect at that season; without much danger to their leaves.

It may not be unnecessary to premise, that as in other cases, before this operation is attempted to be carried into execution, there are a few preparations absolutely necessary; first, a proper situation should be provided, such as a close shed, where the plants will be secure from wind and sun, while they are out of the hot-house; secondly, as much as may be thought sufficient for the purpose, of the different sorts of mould mentioned in page 2, each to be kept separate, so that the operator may have it in his power to mix any two, or more of them, as may be deemed requisite to the nature of the different plants when shifting them; lastly, a sufficient number of the different sized pots to be cleaned, and drained as in other cases, only observing, that as grown plants are

provided with a quantity of roots, they do not require so much draining as is necessary for seedlings or cuttings: I think from a half to one inch a good medium, and in the smallest size pots something less; merely to keep the bottom open, and give free passage to any superabundant moisture, that might otherwise do considerable injury to the plants by stagnating about, and rotting the ends of the tender fibres.

The mildest weather should also be chosen, else in moving the plants from the house to the shed, if any of those strong sharp winds, which are sometimes known to blow at this season, should happen to prevail, they would be in danger of suffering by it materially; but if it is mild and serene, they may be removed with the greatest safety, especially if the shed happens to stand contiguous to the stove.

SECTION II.

Being fully prepared for the removal of the plants, let a part only of them be taken to the shed together, that they may be no longer than necessary out of the stove; and while these are

shifting, the remainder may be taken out of the tan, and set on any of the shelves, or benches that are over the flues, so as to allow sufficient room to have it forked up and turned; and should it be sunk considerably below the desired height, some fresh well dried tan should be added, and mixed well with the old in turning; when done, let it be made pretty level with a rake that the plants may be conveniently, and regularly set on the surface when shifted.

Where tan is scarce there are other materials which answer as excellent substitutes; fresh gathered leaves, for instance: hot stable dung well prepared as for the common hot bed, with a covering of tan or saw dust sufficiently deep to receive the pots: in Bedfordshire there is a species of peat earth, which, when collected into large masses, heats so strongly as to prevent all vegetation on the top; and this heat continues for several months, and I have no doubt would answer well for forcing and in hot-houses.

In shifting the plant, the greatest nicety should be used not to injure the roots; because, if the roots, from a multiplicity of wounds, (which are more frequently lacerated

than cleanly cut), once become cankered, or contaminated in any manner, the branches must also be expected to suffer and decay.

It may not be amiss here, to notice an old but erroneous practice followed by many; I mean that of *paring off* the best* part of the roots with a knife; (which they seldom fail to have ready for that purpose;) then, without ever loosening the remaining part of the ball, set it in the new pot with a little fresh earth thrown loosely about it: as a matter of course, they think it must then be completely drenched or flooded from the water-pot; and lastly, to crown the whole, perhaps set it immediately in a pan of water: when, if they only took time to consider the mutilated state, to which they have reduced the roots, it is impossible they could ever conceive them to be in a state fit to undergo such treatment with any kind of advantage: but it is the misfortune of many, who will not for a moment hesitate to undertake the care of tender and curious plants, as a matter easily understood; yet will not take the

* I say the best, as the tips or ends of the fibres are undoubtedly the active agents in collecting the food for the stem &c., the whole of which are generally destroyed, as they for the most part form the exterior coat of the ball.

trouble of judging for themselves, to follow the old track of cutting and watering, the same as they may have before seen practised on the hardiest geraniums, or myrtles.

The above method I hope to see ere long entirely exploded; for, though it may not seem to hurt some few kinds of strong free growing plants; yet it never can be allowed as a proper mode of treatment for all plants indiscriminately, because they may happen to have a good portion of roots. I think I may venture to assert, that there have been more plants destroyed by this practice, than by any other particular part of the system of mismanagement which some so blindly follow.

There are instances however wherein a knife is necessary, to the roots, as well as the branches, viz.; when they become rotten, or otherwise contaminated; and also to such as are propagated by *cuttings* of the roots, as most species of geranium may be, some mimosæ also, and indeed any that are observed to produce what we gardeners term suckers, or a multiplicity of young stems around the parent: in all which cases, they should be taken off with precision and a sufficiency left to support the parent, if considered worth preserving.

The practice here recommended I by no means set down, as the sole result of my own experience, but that, which several of the most intelligent gardeners, as well as myself, have studiously followed, and which, through a most extended business, I have never seen an instance of its being injurious. It is as follows.

Let the plant be carefully turned out of its pot, in doing which, observe if the roots have perforated it in any part, so as to render it impossible to part them without breaking the one, or lacerating the other; in which case, I should prefer the former as the slightest damage; however, when the ball of roots is divested of its pot, let the broken tiles, or whatever substance may have been used as draining, be carefully picked out without tearing off the roots that may have grown amongst them; also any caked or mossy substance on the surface, which will come easily off with the fingers. Then proceed to loosen the earth and matted roots, by gently patting them on the side of the ball, with the hand; or otherwise by pressing it, so as to open the pores of the earth, without cracking the roots; shake off any loose earth, and having a proper sized pot, ready prepared,

put in a quantity of the fresh mould sufficient to raise the crown of the roots, to about half an inch below the rim of the pot, on which set the plant; and add more earth, lightly shaking it in, among the fibres; let the whole be pressed moderately light, but not so as to render it hard in the least degree, nor by any means using a stick for this purpose: another never failing attendant on the former practice, by which the roots are extremely liable to be torn, or bruised; add mould sufficient to raise the surface, level with the rim, as it will settle to a proper depth with watering, and smooth the whole off neatly with the hand.

I have been more particular on this head, being convinced that the careful performance of the operation, is most essential to the future health of the plants.

It will be found necessary, where there is much of this work to be done, to have two or three assistants, one of which to be employed in supplying pots, and other necessaries; the others in washing and cleaning from insects, &c., any plants that may happen to stand in need, before shifted; and in tying them up properly to their sticks afterwards. I would

recommend new sticks, at least once a year, to hot-house plants in particular; as the old ones very often harbour more or less of the several pestiferous insects, which infest these departments. This done, let the plants be set on a level spot, together, and moderately watered with a fine rose pot, held at a distance above their tops so as to give the leaves a good rincing; but observe to give no more water than is sufficient to settle the fresh mould to the roots, and by no means to slush, or give the surface that puddled appearance, so very disagreeable to be observed in departments, where neatness should be the uniform and leading principle.

Having thus finished the first division, let them be immediately taken to the stove, to be set on the fresh turned tan for the present, and those, that remained there, taken to the shed to be shifted and treated in the same manner as the others.

When the whole are shifted, they may be regulated according to height, and partially plunged for a few days; setting the pot about half its depth loosely into the tan, to avoid the danger that attends too violent a heat arising in the pit; which is frequently the case, when

it has been recently turned, or augmented. However, there must be a pretty brisk fire heat kept up in the house, until the plants recover from their inactive state, the unavoidable consequence of their roots being so recently disturbed.

They will be much benefited at this time by a moderate use of the hand syringe, in the morning before the sun has begun to act upon them with force; also by raising a strong steam in the house, to be done by throwing water on the tops, and sides of the warm flues. But I must observe, that when they are freely treated in this manner, they require but little from the water-pot; as over watering is very pernicious to plants in general, and at no time is it more particularly so, than when they have been lately shifted. However this must unavoidably depend on the judgment of him, in whose care they are placed; as some of them will require considerably more than others.

In a few days when the danger of a violent heat is over, the plants may be plunged neatly in the tan, up to the rim; but observe that it is not left scattered on the surface of the pots, as it would give the work an extreme slovenly

appearance : I would strongly recommend the practice of having a few inches of clean sawdust laid over the tan for the purpose of plunging the pots in, it being so much more cleanly; a very desirable object where neatness is required, which, in most gardens, is a particularly essential part of the curator's conduct.

All the plants, which require the aid of tan heat, being properly plunged, and the remaining ones regulated on the different benches, shelves, or kirb-stones; let the place be well cleaned out, when little more will be necessary for a few weeks, than watering when requisite, squirting, steaming, and attention to the degree of heat necessary to be kept in the house, at this season. This should in general be about sixty degrees, of Fahrenheit. If it is kept much lower, it will considerably retard the plants in recovering their vigour; and if many degrees higher, the free growing kinds will soon overtop, and materially injure the weak and more tardy sorts, unless prevented; besides themselves becoming unsightly, the consequence of being drawn, or forced into long weak ungainly stems.

But the best means of avoiding the above

dilemma, is where there are two, or more houses, to appropriate one of them entirely to the reception of the most tender, and weak growing kinds, where a degree of heat may be kept up, suitable to their nature; or in other words, as near as possible to that of the country in which they grow spontaneously: a part of natural knowledge which every gardener should endeavour to possess, before he undertakes the management of these departments; particularly, if he but for a moment considers, how intimately his credit in his profession is connected with the well being of the articles placed under his care.

SECTION III.

In course of the next and following months, (May and June), the plants will in general grow very luxuriantly; and some of them may perhaps be found extending their roots into the tan, through the bottom hole of the pots; particularly the free growing sorts; if any symptom of this appears, it may be easily remedied by lifting the pot up out of the tan, and setting it on the surface for a few days; this gives

them a gentle check, and effectually prevents their over-luxuriant growth. These super-abundant roots may also with safety be cut away, but should not be torn off, as many will do, sooner than have the troubie of procuring a knife.

As the heat encreases with the advancing season, the different species of insects, to which these departments are liable, will multiply incredibly; therefore, it will be particularly necessary to attend to this circumstance, and to be actively bent on their destruction, when, and as often as convenience will admit, otherwise, if they are allowed to harbour on any plant, or place, and to complete their ovaria, or nests, they are of so amazingly prolific a nature, that they will soon over-run all the plants in the house, and infallibly despoil them of a considerable share of their beauty; indeed in many instances utterly destroy the plant, by extracting the whole of those juices which constitute its necessary support: besides creating a tiresome, and almost endless labour to eradicate them, when allowed to arrive at maturity; but when once mastered they may by an unremitting attention, be easily kept under.

The insects, which seem to make the greatest havoc amongst plants, in the hot-house, are, viz.; the green fly, the thrips, the meally white bug, the great scaly bug, the small scale, which is, I believe, generally termed the pine bug, and the red spider; which, although the smallest, is by far the most destructive of any of the species that exist in these departments.

There has been much said with regard to these insects, and the manner of destroying them; each thinking he did nothing in the business, unless he broached some new scheme, and employed a variety of powerful, and corrosive medicines: however, I believe the simpler the method, as in many other cases, the surer its effect. Therefore, as my chief desire is not so much to acquire the name of an innovator, as to recommend to the public a practice, which, though perhaps it will be termed old, and therefore unfit for use, is in my opinion the most simple, effectual, and less likely to be injurious to the plants, than any of those complicated methods, which have acquired so much fame for their inventors, I shall set myself down without attributing any thing of difficulty, or novelty, to the means, which I have followed in order to

rid myself of these troublesome visitors, satisfied of its effect, and that it is attended with but a very trifling expense.

For the first and second of these species above mentioned, there is no process which seems to take so much effect on them, as a strong fumigation of tobacco; repeated twice, or thrice according to the strength the insects may have attained. Few gardeners are unacquained with the means of producing the above, yet, on account of those who may not be quite so well informed, I shall take the liberty of suggesting the readiest means of accomplishing the object sought for.

Having procured a quantity of the cheapest tobacco, which will be found in general the strongest, and best for this purpose, let as much of it as may be necessary for present use, be well sprinkled with water, to prevent its burning too quick; then provide a middling sized flower-pot, in the side of which, a hole must be bored in the most convenient manner, near the bottom; a few lighted coals being then put in the pot, the moistened tobacco may be shaken lightly over them; when, by blowing with a pair of common bellows at the hole in the side,

smoke, sufficient to fill the house, may be procured in the space of ten or fifteen minutes; unless it happens to be very extensive; in which case, it will require a proportional increase of time, to do the business as it should be. Note, that, if the insects are strong and numerous, it will be necessary to repeat the operation at least twice successively: the calmest weather should be chosen for this work, and it is also necessary, to examine the house with care, lest there should be any holes, or cracks in the glass, or elsewhere, through which the smoke might evaporate too freely; otherwise, it cannot be reasonably expected to have the desired effect.

For the third, fourth, and fifth species, I am of opinion, that there is none of the several expensive methods mentioned in different authors so effectual, as simply picking them off: this may be said to be tedious, but then it has surety to plead; besides, that the plants are in no manner disfigured by the operation; but unless regularity be observed in looking for them, examining plant by plant, and leaf by leaf, from top to bottom, and also any incisions, or cracks that may be in the bark of the stem, &c. there

will be a constant, and tiresome employment; on the contrary, if regularly done, one operation will be of more service, than five if executed in a careless inattentive manner.

As each individual plant is picked it should be carefully washed with a strong lixivium of soft soap and water; which will have a powerful effect on their remains or young ovaria, which are in general sufficiently small to elude the eye, or perhaps so situated within the young buds, that they cannot be got at without materially injuring the future growth; the wash will, however, penetrate into these secret holds, and in general be fully adequate to their destruction.

When the plants are out of the houses in summer, every part of it should be well washed with strong soap suds, in which a little of the same tobacco, as used for fumigating, has been infused; in particular, all the joints of the woodwork, and also whatever nail-holes, or other crevices may happen to be therein; as in these places, some of the species, more especially the white meally bug, is much inclined to secrete itself for breeding. This operation will however, if performed in Spring and

Autumn, be a great means of their extinction, and will tend in a great degree to check the multiplication of the others.

The last, and most pernicious of the species mentioned, viz. the red spider, is to be overcome neither by fumigation, nor picking; several are the methods, which have been invented, to eradicate this insect from our hothouses, but I believe, most of them have been found inadequate to the task, should they be once allowed to establish themselves on the plants. They may be brushed off, but this is trifling, and in many instances injurious to the plants; because, the insects being left alive, they soon find their way back to their former station; likewise, the young tender leaves are liable to be scratched by the brush, in consequence of which, they ever after make but a very unsightly appearance on the plants. Mixtures of sulphur, and such like materials are are equally disagreeable yet may be occasionally used: a gentleman of the first authority assures me of the efficacy of the following. Half a pound of flour of brimstone mixed with a little whitewash and laid on the flue where it is moderately warm, will destroy all the red

spiders in a house of a 100 feet long, which he has proved by repeated experiments. Neither can I recommend the use of *mercurial* medicines. If we but for a moment consider the natural habit of the insect, and the situations in which it is generally to be found in greatest abundance, we may readily perceive, that an arid dryness, in the enclosed air of the house, accompanied with a greater or less degree of heat, is evidently the most congenial to its animal faculties; therefore, we must necessarily conclude, that the opposite extreme must prove fatal to its existence.

To accomplish this, there is nothing necessary more than the free, but well directed use, of common water; either by steam, or with the hand-syringe. The steam, by creating a fine dew in the house, prevents the insects from extending its slender web from leaf to leaf, and thus checks its progress; while the syringe, by superior force, breaks the ligaments of those already made, and in most instances washes the insects to the ground; where, although it may recover its fall for the first, or second application, it is in the end sure to perish.

They will sometimes however, elude the

greatest diligence, for a while, by collecting under large horizontal leaves, which serve them as citadels against the attacks of the water; but here they will soon betray themselves, by extracting the fluid substance of the leaf for their support; in consequence of which it loses its verdure, and becomes conspicuous; this when found, should be picked off, and taken out of the house immediately; for if left any where among the plants, they will, in a little time, establish themselves on others. If they happen to be discovered before the leaf has lost its beauty, they may be rubbed off with the hand on a sheet of paper, and expelled the premises.

Thus must a continual warfare be kept up with these intruders, otherwise the plants will neither do credit to the gardener, nor contribute much to the pleasure of his employer; circumstances, which should be the first objects of consideration with every man, who wishes to procure, through his industry, a comfortable subsistence for himself or family.

Note, if at any time the quantity of water necessary to be used in these operations, should occasion the earth to become over-wet, in those pots particularly, which are plunged in the

bark-bed; the syringing must be omitted, and use made of the steam only, until they again become reasonably dry. Neither should it be performed when the sun acts freely upon the plants, lest their leaves become in consequence disfigured. For such is the law of nature, that the water forms itself into little spherules, the surfaces of which collect the rays of the sun, in a greater or less degree according to their convexity; and thereby the leaves are disfigured by being burned in the focus of each spherule, and consequently prove very disagreeable to the eye.

SECTION IV.

As the season advances, it will become necessary to admit a reasonable portion of air on all fine sunny days; and also to decrease the strength of the fires at night: but in these particulars, the only criterions, to be guided by, are experience, and observations on the weather, the variations in which render it utterly impossible to lay down any certain rule to act by, further than the admonitions of the Thermometer; observing to keep it pretty near the points already specified, in Chap. 2. Sect. 2.

About the beginning, or middle of May at farthest, I would advise the omission of fires entirely; as the natural heat of the season united to that of the bark-bed, will in general be found sufficient to keep the mercury up to the above mentioned point.

Towards the latter end of June, the plants by this treatment will generally be in a very luxuriant free state of growth; it will be therefore requisite, to raise the pots quite out of the tan-bed, to check and harden them a little, so as to be able to bear the air of the greenhouse for a few weeks, which will be of considerable advantage to them the ensuing winter.

Should any of them remain of a sickly appearance, (and that a few may be in that state, in large collections must be reasonably expected;) or any particular tender sorts among them, they must be removed to a separate house as already hinted, where the tan being previously forked up, and otherwise properly prepared for their reception, they must be immediately replunged: if no such house is convenient, a large deep hot bed frame, set on a good bed of well prepared dung, will answer nearly as well for this purpose; having nine or

ten inches of rotten tan or saw-dust, spread regularly over the bed, within the frame, in which the pots are to be plunged.

It is necessary to observe, that, when the bed has been got ready, a few days should elapse before the plants are set in it; that the steam, and violent heat, may have sufficient time to evaporate. At the expiration of five, or six days however, the plants in their pots may be set on the surface; where they should remain a little time longer without being plunged; but particular care is necessary, that the frame at this time may not be kept too close, which would occasion the heat to ascend more rapidly than the plants could well bear; to avoid this, give plenty of air in the day time, and also a little at night, with a matt hung before it to prevent the sharp air entering into the frame. When the heat of the bed has attained a proper temperature, so that there may be no danger of the roots being burned, or otherwise injured, let the plants be plunged; and afterwards treated in the same manner as if they were still in the hot-house: only observing to keep those, that are in a weak state, rather dry; as nothing can be more injurious to

a sickly plant, than too much moisture, by reason of its inability to imbibe the usual quantity through want of vigour.

The plants which remain, intended to be set in the green-house, must now have a considerable encrease of fresh air, on all fine days; and also,(the pots being quite out of the tan,) they will require a greater portion of water, than has been usually given them when plunged.

As soon as the weather becomes settled, and the night perfectly free from all chillness, and frost, which is seldom much before the middle of July; the plants may with safety be removed from the stove to the green-house; and set regularly, on the benches lately occupied by the green-house plants; which they will ornament very much, during the time the latter are set in clumps in the open air.

The stove may, in this interval, be furnished with a few of each of the different tender annuals; to give it something of a gay, lively appearance. They will likewise in some measure serve as a kind of natural trap for the spider, &c.; as they will, should there be any of them left in the house, immediately attack the

soft tender leaves of these plants; in which case, as soon as they are observed to be collected in force, upon any individual plant; it should be removed to some of the quarters of the flower garden, without loss of time, and another substituted in its room; this practice will contribute towards subduing this formidable enemy, so that, combined with other exertions, by the time it becomes necessary to have the hot-house plants reinstated in the bark-bed, the house should, I think, be pretty free from them.

These being now in the green-house, will require a little attention to preserve their verdure, such as keeping the glasses close at night, and admitting air only on fine days; thus to exclude any chilling, or strong winds, that may happen to prevail; which would occasion the leaves to contract a languid, yellowish appearance; however, in course of a week or ten days, they will be able to withstand any weather that may in reason be expected, at this season; unless it happens to be unusually violent; in which case it must be guarded against accordingly.

The principal care they will require now for about a month, or so, is to be regularly cleaned

from insects, weeds, and dead leaves, whenever they appear; also casually tying up any that may want it, and watering, in which last article, it must be observed, that as they now stand upon dry boards, and the air acting freely on every side of the pot, they must consequently be allowed an encrease of water to counterbalance its effect.

The evening is the most proper time for watering at this season, as well as syringing, particularly when dry and warm; for if administered in the morning, the rising heat of the sun exhales it, before it has time to descend to the lower roots; and unless replenished frequently in course of the succeeding day, they are liable to much injury, by being left in an exhausted state until the following morning, and which, it is probable, may not prove more fortunate. Whereas, if administered in the evening, it refreshes them after the preceding days drought, and having sufficient time to penetrate to the roots, they have the night to recruit themselves against the following day. Besides, in syringing, there is much more danger of having the leaves scorched by the sun's rays, if done in the morning, than if done as here recommended:

but as either extreme is dangerous, care must be taken to use no more water than is evidently necessary, for the health of the plants: for if used to that degree, that the earth becomes sour, and deprived of its vegetative powers, the consequences may be rather unpleasant.

By thus setting the plants in the greenhouse, it tends to prevent the encrease of insects; also their too luxuriant growth during the summer months; and by hardening, and ripening the wood, renders them strong and firm, and therefore more likely to bloom; which is, in these ornamental plants, the principal object of the cultivator; besides, that they are not so liable to be injured by the severities of the succeeding winter.

SECTION V.

Towards the latter end of August, the natural heat of the atmosphere will be on the decline; therefore, except on particular fine days, when a small portion of air may be given, the lights must be kept perfectly close; but more especially so at night: as we have frequently at this season heavy chilling dews, and are also,

often surprised with unexpected showers of rain, or hail; to admit either of which, might be very injurious to the plants; however, by shutting up the house before the sun has withdrawn its influence entirely from it, and thereby warming the enclosed air, they may safely stand here some days longer.

As soon as the month of September commences, it is time to think of getting the stoves ready for their reception; and that this business may be regularly proceeded with, I shall mention a few particulars, which may be occasionally varied as time or circumstances require: first a quantity of fresh tan should be provided, sufficient to raise the bed at least six inches, above the kirb, or wall of the pit, in conjunction with the best of the old, already there; which is to be extracted by sifting. Let the new tan be spread out to dry in ridges, upon some clean, airy spot, or convenient yard, for two or three days; where it should be regularly turned twice or thrice a day, and heaped up, and covered with matts at night; while this is preparing, let the flues of the house be well cleaned, and the walls white-washed; an operation necessary to be done every year in

these departments, where strong fires are kept for such a length of time; likewise, let the old tan be sifted in the common way, with a pretty coarse sieve or riddle: some gardeners throw it entirely away, but I prefer sifting, or at least, if this is considered too much labour, to have some of the best and warmest preserved, which, by being mixed with the new, prevents its heating so violently as it otherwise would, when first put in; it also tends to preserve a more regular heat in the other, longer than it naturally would, if used by itself; as it would be very violent at first, and consequently, like most other things, that are worked up above their pitch, liable to be the sooner exhausted, in proportion to the first fermentation.

Having sifted and got away all the refuse of the old tan, let the fresh, if well dried, be immediately carried in, and both well mixed together in the pit; still adding, until the bed is raised to the proper height; this done, let the wood and glass work, kirbs, passages, &c. &c. in short every part of the house, be diligently washed; for the two-fold purpose of endeavouring to clear it as much as possible from insects, as well as to give it a cleanly appearance:

being thus prepared, the plants may be removed from the greenhouse, observing, to examine each of them diligently, lest any of those plagues so often mentioned, should find their way back to the stove.

The pots must not, by any means, be plunged in the tan at first; as well, on account of the danger of the violent heat injuring the roots, as because this early plunging might start them into a fresh growth; which, at this late season, would not be at all to their advantage. They must therefore be set, on the surface of the tan, in regular order; where they may stand twelve or fifteen days, or perhaps longer; being guided in this particular, by the state of the atmosphere abroad, as well as the internal temperature of the heat in the pit: however, I would not advise their being left out longer than the first week in October; as the heat of the external air will be by that time considerably abated, and that in the pit, I should think sufficiently moderate.

The time for plunging being fixed on, observe to have it done in the most exact manner, placing the tall plants towards the back, or centre, and the lower ones to the front, or sides

of the pit, in regular order; according to the fashion of the house. If sawdust is used, as recommended in Chap. 2, Sect. 2 of this work, it will contribute much to their cleanliness, and also make a more agreeable appearance than the tan.

The tenderer sorts being all plunged, let the hardier kinds, which do not positively require the aid of tan-heat to preserve them, be ranged in regular order on the shelves and benches, which may be over the flues, or elsewhere within the house: these situations will more particularly suit the tender succulent species, a dry heat being more congenial to their nature; and also, some of them, the furthest from the entrance of the fire, will be found both necessary, and convenient to set any of the tenderer greenhouse plants on them, when the severity of the winter renders it adviseable, likewise, those of them which may want forcing in the spring, for cuttings, or flowers. All these places being set to rights, and the passages &c. swept clean; give the plants a good syringing to wash off whatever dust they may have acquired during their removal; which will complete the business for this time.

The principal care afterwards, for a few weeks, is to give them a reasonable share of fresh air, and water, according to the temperature of the weather; but note, it is more proper to perform the watering, syringing, and steaming, from this time, to the beginning or middle of May, in the forenoon; observing to do it while the rays of the sun fall so obliquely, as to ensure the plants from being injured by it: should it be done in the evening, the air in the house would unavoidably get chilled, especially in frosty weather. It is even necessary that the water, used for this purpose, should be nearly of the same temperature as the air in the house, therefore, should it happen that there is no cistern within the house, for the purpose of containing a regular supply of water, it will be requisite, as soon as the severe weather sets in, to place a few water pots filled along side the flues over night; which will be warm enough by morn to mix with a quantity of cold, and bring it to the proper degree of heat for use.

About the middle of October, it will be necessary to add a little fire heat at night; beginning with slow fires at first, and regularly encreasing them as the severities of the wea-

ther encrease. It would doubtless be deemed folly, should I lose time in directing how these fires are to be made, as I never knew any who had the least pretensions to gardening incapable of it; I shall therefore be silent on that head. However, it may not be amiss to remark, that a slow, steady, regular fire, will be much more advantageous, than violent irregular ones would be. Thus far has coals, or turf, the advantage of sticks; but even these may be made too strong; the consequence of which, is not unfrequently setting fire to the soot in the flues, and thereby overheating the air in the house; to remedy which, should it at any time happen, cold water should be poured on the flues in great quantities, and a little air given at the top of the house, if imperiously required, and the weather permits: this will soon reduce the air to its proper state. The Thermometer will then be the best guide, when to shut up the house, and when the fire will be again necessary.

Although a circulation of fresh air is at all times requisite to the health of plants, yet the heat of the external atmosphere will at this season, be so much diminished, that it will not

be found convenient to admit it, in any considerable quantity; in fact none should be given, except on particular fine days; when the front, or end lights, may be opened a few inches. However, they should be shut early in the day, seldom permitting them to remain open longer than one o'clock; thereby giving the sun time to warm the fresh admitted air, before the chill of the night commences. Even this little indulgence cannot be allowed, from about the end of this month, (October,) until the beginning of April: as the strong cold winds which generally blow during the winter months, find of themselves but too many entrances.

As to watering in the winter, I would entirely discontinue it to those plants plunged in the pit; as the moisture of the tan, added to that which proceeds from the syringe, will, I think, be found quite sufficient for them; on the contrary, those over the flues, or on the shelves, or kirbs, near the fires, will require an additional portion on account of the strong fires necessary to be kept, when the weather happens to be severe. The use of the syringe, and steam must also be stopped in the severest frosts;

lest by that means the house should get over chilled: however, they may both be used freely, when the weather proves moderately mild, and fine; but by no means is it to be understood, from what has been here advanced, that the house, at this time, is to be kept in a continual mist; or on the other hand, that the plants are not to be carefully examined, as usual, and watered liberally when in want of it.

It is necessary to notice, that those plants, which are inclined to be deciduous, and also some of the more tender ones, will be occasionally dropping part of their leaves; these should be picked off as soon as they appear; otherwise, they will have rather a disagreeable appearance among the plants.

SECTION VI.

About the middle or end of December, it will be necessary to have the tan in the pit turned, and renovated with a little fresh well dried bark to enliven the heat, as the severest part of the season is still to be expected; however, in performing this work, great care is required that the plants are not chilled, or injured by being

removed out of the tan bed at this cold season: therefore, the mildest weather must be chosen, any green-house plants, or other hardy things, that may have been placed there either to force or preserve, should in the first place be removed to the green-house; so that the benches, &c. which they occupied, may serve to set the tender sorts on: those may then be removed out of the tan, and set in the most convenient manner so as to be out of the way for the moment.

The pit being cleared, immediately proceed to turn over and mix the old and new tan well together, in which, as soon as it is completed and levelled fit to receive the pots, they may be plunged without delay; as there is not that certain danger of a burning heat ascending now, as in the summer months, in which season, the powerful action of the sun occasions it to ascend more violently.

Should it not be convenient to have the whole plunged the same day, those left will require to be set on the surface of the tan during the night; lest by being left near the glass, or extreme parts of the house, they might be severely injured ere the morning, by the cold air. As it is therefore advisable to keep them as short a

time as possible out of the tan, at this season, they should without fail be plunged the next, or following day at farthest; regulating them in the same manner in which they stood before, or otherwise, as it suits convenience: it will be also requisite, to keep a pretty brisk fire heat in the house, while the plants are out of the tan, and until the bottom heat in the pit becomes sufficiently strong; else they will be liable thereby to droop, and lose many of their leaves in consequence of being checked at this season.

However, should it happen, (which is seldom the case,) that a series of clear, fine weather, follows this operation, the action of the sun may possibly occasion the heat to rise rather violent, in course of a few days after being renewed: to this particular attention must be paid, and if any such symptom should appear, it must be immediately remedied by lifting the pots out of their places, and throwing into the holes a small quantity of the surface tan; on which the pots may be again set in a loose manner; thus, by permitting the heat to pass freely off by the sides of the pots, it prevents its burning the earth, or roots, which would be certain death to the plants. When its violence

has subsided, let the pit be levelled, and pots properly replunged; but unless the weather, as already noticed, happens to be particularly clear, and sun shine, in all likelihood this labour will not be encountered.

They will require, from this time, until about the beginning of March, nothing more than the usual care of watering, when necessary, and cleaning them from all dirt, or insects as soon as they appear; also to keep the temperature of the enclosed air, as near to its regular pitch, as possible. To assist in compassing this object, when the weather sets in severe, it will be proper, to use either shutters of canvas, or bass matts, to cover all the lower parts of the house; and in particular those, at the greatest distance from the entrance of the fires, every night; otherwise the frost will easily enter these remote parts, and chill the air through the whole house; the consequence of which may be very injurious: on the other hand, if these precautions are not attended to, there will be a necessity of keeping up a very strong fire heat, which will likewise be attended with pernicious effects.

It is in these intervals that that destructive

insect the red spider makes the most rapid progress; on account of the necessity there exists, of keeping the houses close, and supporting a dry, warm air; both of which circumstances are particularly congenial to its nature; therefore, on all fine, mild mornings, observe to raise a powerful steam in the house, as already directed; by the frequent repetition of which, there will be a possibility of keeping them under controul.

As the internal strength, and heat of the tan, will now be much on the decline, in consequence of the length of time it has been in use, it will be requisite to turn it more frequently; so that about the beginning of March, I would advise its being again stirred, to at least half its depth; which will afford a temperate heat, until the time in which the plants are usually shifted, when it is generally renewed.

Some gardeners make it a practice, to have merely the upper half of their tan pits stirred, at any time, throughout the year, when the heat happens to be on the decline: this is certainly a very proper method, where there is plenty of time, and hands to perform it; as there is no danger of a burning heat arising; but it requires

to be done so much the oftener, such heat seldom lasting above a month, or six weeks; it consequently will not answer, where these conveniences are not to be had. The plants being regulated in proper order as before, let them have the usual treatment until the time of shifting; to perform which, ample directions have been already given. In all cases where tan is mentioned as a necessary assistant in supporting the internal air of the house, let it be understood, that leaves, or very well prepared dung, will be a good substitute where that article happens to be difficult or expensive to procure: there should, however, be a sufficient depth of saw dust, or tan, on the surface to plunge the pots in.

Thus, having gone through a regular series of work, necessary to be done in the Hot-house throughout the year; I shall next proceed, to that requisite to be followed in the Green-house department; in doing which, I shall endeavour to follow the same explicit plan, which has been hitherto observed.

PART SECOND.

OF

THE GREEN-HOUSE.

CHAPTER I.

SECTION I.

THE various methods by which green-house plants may be propagated with success, renders it extremely difficult to reduce them under one head; or on the other hand, to say that this, or that, is the one to be preferred. Therefore, my object here shall be merely to arrange, and exemplify a process, that I am sensible will be found as productive as any other; and which through, a most extensive practice, I have uniformly followed to advantage.

The propagation by seeds being that which

nature points out to us, and many green-house plants bringing theirs to perfection in this country, besides large quantities that are daily imported from the milder regions abroad, I shall proceed with them first; and give a few general rules, which I think necessary to be observed in sowing them, and their subsequent management when grown, until they arrive at maturity, when they may be afterwards treated in the same manner as directed for the general stock, for which see, Chap. 2. of this Second Part.

It must be by this time needless, to repeat the necessity of being provided with a stock of prepared pots, and earths of different sorts, and their preparation; suffice it to say, that whatever mould is wanted for this purpose, should be moderately dry, and finely sifted before used: the sifting should be performed with two sieves, one of which must be particularly fine, to procure surfacing, and covering mould, for the finer seeds.

The month of February seems to be the most proper season for sowing these seeds; as they soon vegetate at this time, and make strong handsome plants, by the latter end of

the ensuing summer; which is an objeet of the first consideration in this business: for when sowed later, the greater part, and more especially the tenderer species, will be too weak to part into separate pots; and therefore are liable to suffer by damps, and rottenness, during the winter following, by being left in the seed pots; and should they be attempted to be removed, at this late season, which some will do sooner than suffer them to take their chance as they are, they seldom prove more fortunate. Whereas those sown about the latter end of January, or any time in the following month, will for the greater part be fit to pot separately in May, or June; and therefore have the whole summer to establish themselves; and even such of them as are more slow, will have at least sufficient strength, and woodiness to withstand the casualties of winter, should they be left in the seed pots, much better than the soft herb-like produce of later sowings.

As an exception to the above rule, may be mentioned *Ericæ*, and such like seeds which are at first slow of growth, and produce firm, woody, though perhaps small stems: these,

from their nature not being so liable to suffer from damp as gross, quick growing articles, may be sown with every prospect of success in the Autumn. Indeed for heaths, I prefer a September sowing, towards the end of the month. If the seeds are good, they soon vegetate, and will acquire sufficient strength to carry them through the winter; and being so small, they stand more detached; therefore they dont damp or rot each other: whereas if they are sown in Spring, they are not fit for potting off until it is too late in the Autumn to attempt it, and consequently they are left for the winter in their seed-pots: when, from their encreased size, they will have become so close as to inevitably injure each other, perhaps, even to the destruction of the whole crop. Those sown in the Autumn are not of sufficient size to be potted off until July or August in the ensuing year.

The day being resolved on, let a quantity of the different sized pots be filled in the precise manner directed for Tropical seeds; Chap. I. Sect. I. in the preceding part of this work; with the mould best suited to the nature of the seed to be sown; as on other similar occasions, it must be pressed down pretty tight to about

half an inch below the rim of the pot, adding more if requisite; on this may be sown, any of the coarse large seeds, which should in general be covered one fourth, or half an inch, according to their size; but if the seeds are small and curious kinds, such as heath, &c. a little more nicety is required. For these, the pots must be surfaced with some very fine mould, in depth about a quarter of an inch, which will raise it to the same distance below the rim; on this, it being made perfectly level, and firm, let the seeds be sown neatly, and even; then with the same fine machine, sift a very light covering over them, and press it gently down with the hand. If the parcels of seed are small, two, three, or more kinds, may be sown distinctly in the same pot, distinguishing each by a small painted stick, to be set perpendicular in the centre of the pot with the name or number inscribed thereon.

The sowing being finished, give the pots a gentle watering with the finest rose water-pot, to be repeated three or four times, until the mould therein becomes sufficiently moist for vegetation; let them be then set in the most convenient, dry, airy part of the green-house,

where they can be regularly attended, as to watering and weeding. Watering they will require at least once a day, in a greater or less degree; for if they are not kept properly moist, the seeds will not by any means vegetate freely, if at all; however, the other extreme is to be studiously avoided. The weeds should be regularly pulled out before they attain any size; else, besides the top smothering the young seedlings, which may have started, the roots, in getting them out afterwards, not only disturb them, but also the remaining seeds that may be perhaps on the point of bursting their embryo; by which means, it not unfrequently happens in places where this strict attention is not paid, that the greater part of the crop is thereby destroyed.

As the spring advances, it will be necessary to lay a few sheets of strong paper over the pots, for two, or three hours in the middle of the day, if the weather happens to be clear, and the sun acts forcibly on them; particularly those in which the finer seeds are sown, in order to prevent the surface getting over dry, and powder like; or otherwise, if the mould happens to be pretty moist, it is liable to form

a mossy crust, which might be particularly injurious, by preventing the young seedling ushering itself into the light, from penetrating through it with that ease which is requisite.

It is not advisable to keep these small kinds of seed too long unsown, therefore, foreign seed should for the most part be sown as soon as received, on account of the length of time they are in general on their passage home; yet there are some, such as heath, and other firm, hard seeds, which will keep very well for a year, or two; a part of which may generally be reserved for future sowings.

In this manner must they be managed until the beginning or middle of June, at which season the green-house will in general be found to be too drying a situation for them; they must therefore be removed, particularly the larger kinds of seed, to some shady border, where they can be plunged nearly up to the rim in coal ashes, or sand; which will greatly assist to keep them in a proper moist state: here, all the care they will require is to be kept clear from weeds, and regularly watered, morning and evening if requisite; but never when the sun shines strong upon them, lest the

tender leaves of the young plants should get scorched; it will be also necessary to have a careful eye, daily for slugs, worms, &c. otherwise they will be liable to suffer much from the depredations of these insects, particularly in the evenings. Should there be any fine, light covered seeds, such as heaths, &c. they must be set in such manner, that they may be covered with a common hot-bed frame, in a moderately exposed situation, so that in case of sudden or heavy showers which might otherwise wash the seeds out of the pots, they may be occasionally covered to preserve them from such violence; yet they may be exposed to gentle rains at times, but never long together, lest they become over wet, which would soon perish them in this tender state. They will likewise require to be shaded with a mat in clear weather, or even a double mat, in the very hottest season.

Early in July, many of them will be growing pretty fast, and will require to be potted off into separate pots; as it is much preferable to do this while they are young, and small, before their roots become matted together, than it is afterwards; besides, that they have a con-

siderable portion of the growing season before them to establish themselves, before the winter stops their career.

In performing this work, care should be taken to match the pot to the size of the plants, and nature of the species to be potted; as over-potting these small seedlings might be of the worst consequence. The largest size pots I would recommend for this use, (unless the plants are particularly strong) are what are generally called small sixties, or halfpenny-pots: but for heaths, and such like very small articles, a still less size is to be provided; these are known by the very appropriate name of thimble pots, on account of their diminutive size.

Being provided with a quantity of these, and the different sorts of mould properly prepared, that may be requisite for the kinds to be done, proceed to part the plants; in doing which, let the nicest care be taken to preserve as much roots, and earth to each plant, as can possibly be done without injuring the others; let them be neatly potted in the proper mould, which must be gently pressed to the roots, that they may the sooner incorporate themselves with it.

In this manner, pot as many as may be thought sufficient for the present purpose, at the same time allowing a few for mischances. They must then be well watered, in the manner already directed for seedlings, and set in a cool frame, on coal ashes well rolled, or any other hard substance that will prevent the worms getting so freely into them, as they otherwise would. The lights must be kept constantly on, and close, for a few days, more or less, as circumstances may require; and it will be also necessary to shade them very secure from the strong rays of the sun at first; however in a little time, the lights may be taken off at night, if fine, having them on, and shading in the day, until by degrees, the plants are so hardened as to be able to withstand the full power of the sun; thus in the space of a fortnight or so, they will be fit to be set in the clumps along with the other plants.

This business should not be undertaken later than the middle of August; for if executed at a more advanced season, the plants will not have time to establish themselves, and consequently will not succeed to the wishes of the proprietor; therefore, any that may remain in

the pots, not strong enough to be parted, by that period, should be removed into the green-house early in September, and there placed in their proper situation in that department until the spring following. Indeed there are some seeds, which absolutely require to be kept for that term before they will vegetate; whereby it becomes necessary, to examine with care when removing them to the green-house, whatever pots have not by that time, shown any signs of vegetation, and those which are found alive must be saved, and treated in the same manner as fresh sown seeds, those which have failed should be emptied, and taken to their proper place at once.

The pots set in the house will require nearly the same treatment as usual, viz.; to be kept perfectly clear from weeds, and regularly watered. Water should now be given in the morning only, as any damps it may occasion, will have time sufficient to evaporate in course of the ensuing day; whereas, if given in the evening, it causes a chillness about their tender leaves, and from the necessary closeness of the house at night, not having free exhalation, it may do a material injury; not only to the seed-

lings themselves, but likewise to the adjacent plants by tending to encrease the general damp of the house.

When first housed, if the weather prove clear, they must be shaded for two, or three hours at mid-day; but this practice must not be followed too closely, as the influence of the sun is but seldom too powerful for them at this season, and during the winter months, the more sun they receive the better: it is also necessary to be particular, in observing that no slugs, snails, or any other insect, harbour about them; as before mentioned; otherwise, they may perhaps destroy all the hopes of the season, in one night; which is to them, as well as to most other insects, and animals of prey, a convenient time for their depredations.

By a careful attention to the above rules, adapting them as place, time, or circumstance will permit, one may expect in the ensuing spring, to see their remaining seeds of last season's sowing, begin to vegetate very fast; that is, such of them as still have the germ of life sound, which can at any time be easily ascertained. They will, when grown to a proper size, require to be parted, and potted separately

in the manner I have before directed; but as it is there noticed, they must not be permitted to grow too large before this operation is performed, on account of the roots being liable to interweave with each other, and by that means, render it more difficult to be well executed; besides, it may be injurious in another manner; by occasioning the plants unavoidably to harbour damps, and slugs, &c., the evil tendency of which has been already, I presume, sufficiently explained.

There is one thing necessary to be remarked before I have done with this article, which is, that those seeds received from New South Wales in general, as well as many others of the South Sea Islands, and also several, particularly of the larger sorts, from the interior parts of the Cape of Good Hope, from the warmer countries of temperate America, and in short, any of the climes in, or approaching the same latitudes, although the plants when grown will flourish and come to perfection in the Green-house, yet the seeds will require the aid of a hot-bed when first sown, to set them in vegetation, and until they are parted and established in their separate pots, then to be

hardened by degrees to the open air; from which time, they may be treated as directed for the more hardy and common sorts of seedlings.

SECTION II.

To propagate green-house plants by cuttings, there are various methods, some preferring old wood, some young, and others differing with regard to seasons; however, the following, I presume, will be found as practicable, and productive as most.

As the principles of vegetation are more early in action in plants cultivated in these departments, than in those exposed to the influence of our climate, this work may begin sooner in proportion; and thus are we enabled, to have our young plants strong and vigorous, before the decline of the year. I think that about the middle, or end of January, is the most proper time to commence; by removing to the stove any curious, or scarce plants that may be wanted, or worth having in quantity, to forward their growth; as young tender shoots will strike very freely, in about a month hence: the chief reason of this being necessary, is that by

the treatment recommended for green-house plants in this work, they are kept as hardy and free from early growth as possible, for the purpose of checking any unseemly luxuriance they might otherwise produce.

The plants which particularly require to be assisted in the above manner, are all of the soft wooded, tender, pithy kinds; such as curious geraniums, Indigoferas, Crotolarias, Polygalas, Houstonia, Chironias, &c. &c.; and indeed any of the more woody sorts that may be wanted: though these will strike freely at a more advanced season, when perhaps there is more leisure time; yet they do not produce roots so soon, as if forced in the above manner: few plants requiring more than five, or six weeks, to perfect themselves and be fit for separate potting; but there are some, as for instance heaths, that cannot well bear the closeness and heat of the stove; at all events, those plants that are chosen to be forced for cuttings, should be some of the most shabby, and unsightly specimens in the green-house; such that can be very well spared; as they are generally, disfigured by the operation, and are for the most part good for nothing afterwards; therefore, any

curious, scarce plant necessary to be treated in this manner, should be moderately forced, and moderately cut, to preserve it in passable condition.

It is almost superfluous to remark here, that all plants intended for forcing, should be inured by degrees to the heat necessary to produce the desired effect; as nothing is more likely to produce disappointment, than a sudden transition from one extreme to the other; therefore, plants to be forced, in stoves, where, on account of the proper tenants, the heat must be kept regular, and cannot be lowered to accommodate these intruders, they should be at first set, in the most remote, cool parts of the house, and afterwards moved in due time to the warmer situations: they will also require a considerable encrease of water when forcing for cuttings, as well as for flowers.

Being provided (as in the case of hot-house cuttings), with a sufficient quantity of bell-glasses, and also some good yellow loam, sand, peat, and well rotted dung, or otherwise good vegetable mould, each sifted fine, and kept separate, to be used at discretion; let a few different sized pots be also got in readiness, and

then if the young shoots are grown to a proper length, that is, from one inch, to two, three, or four, according to the nature of their growth, which they will be, in general, about the latter end of February, and from that to any time in March, proceed to cut and dress them neatly with a sharp penknife, taking off all the leaves close to the stem as possible without wounding it, except a few at the top, to be left for the free respiration of the cutting: this observation, should be particularly attended to in making cuttings of evergreens in general, whether hardy, or tender: let them be cut off at bottom with a clean horizontal cut, and immediately inserted in their proper pot. To have these properly prepared is a very necessary part of the business; being well drained, they should be rather more than half filled with the mould, or compost best suited to the nature of the plant, and afterwards filled with good loam or sand, which ever may be thought more adviseable to insert the cutting in: if sand is used, it should be previously well watered, otherwise, it cannot be sufficiently tightened to the base of the cutting; a most essential point to be observed: however, it should have time to be well drained

off from the pot, before the cuttings are put in; as they, being so tender, are extremely liable to damp at this season; than which nothing is more injurious. The loam will in general be found sufficiently moist of itself: and should it be of a fine sandy nature so much the better, but if not, a third, or fourth part of fine sand should be added, and well mixed previous to its being used.

Being properly planted, let them be covered immediately with the proper glass, well fitted, and pressed moderately on the mould; so as perfectly to exclude the air. They should then be plunged in the front of the bark pit, along with the tender stove cuttings; or otherwise in a hot-bed frame made up for that purpose; (the pit is the most preferable situation.) The inside of the glasses should be regularly wiped, with a dry cloth, every morning; and any of them that happen to damp, carefully taken away before they contaminate the rest. If the sun happens to be unclouded, they must be shaded for a few days moderately, with strong paper, or some such article; but by no means is it to be left on too late in the afternoon, as the cuttings beingo so soft, and tender,

are extremely susceptible of injury by over shading.

In the space of ten days or a fortnight, some of the free rooting kinds will be making efforts of growth; as soon as this is noticed, it will be necessary to give them a little air, by taking the glasses off every evening, when the sun is quite receded from them, and putting them on again early the following morning; until they are by that means hardened, so as to be able to bear the full power of the sun without the glass, when it is to be entirely discontinued. If any of them should droop their heads when this operation is first performed, it is proper to refrain from moving the glasses, until they have gained more strength. The shading is also to be decreased by degrees, but not so much as to be entirely done away while there remains any of them under glasses. In this manner is the business to be followed, at different intervals, according as the cuttings are ready during the next, and following month of March, and April.

From the latter end of March, to the middle or end of July, cuttings of all the common kinds of geranium may be put in with success, let a moderate hot-bed be made up, and

surfaced with some old tan; when it is of a proper temperature, let the cuttings be made, and put in some nice rich loam; plunge the pots to the rim on the bed, and shade them for a day or two but no longer. Pick off any damping leaves that may appear, water them occasionally; and observe to pot them off in due time by which means, they will be stout plants by the end of Autumn: the more curious kinds are in general done by cuttings of the thick fleshy roots, which they produce in abundance: as many of these as can be spared with safety, being taken off carefully from each plant, and a few of the finer fibres attached to them and neatly potted in small pots leaving the crown of each about one fourth of an inch over the surface, watered and set on a moderate heat, will in a few weeks make excellent plants: one, two, or more stems which they in general produce, being left to form the plant according to the fancy of the proprietor.

May and June, I think, is the most proper time for propagating most or all of the woody, shrub-like plants; such as myrtles, oranges, metrosideros, Banksias, &c. and more particularly heaths, as the young wood will by that

time be in general pretty far advanced. The propagation of this numerous and beautiful genus being so little known to the generality of gardeners in this, as well as the sister kingdom, I trust I shall be excused, if I am a little more particular on that head, than I have hitherto been with regard to others; especially as the general treatment of them, when put in, is the most proper for all those hard wooded plants, done at the same time.

The branches of heaths, and bark thereof, are of such a thin wiry nature, when old, that it is nearly impossible to strike them in that state, hence the many failures by people not aware of this circumstance, who most probably, were in the habit of leaving more or less old wood, to cuttings of every description; and these, they very naturally concluded, were to be put into the soil the grown plant flourished best in; so that except by mere chance, when they happened to put in a cutting moderately young, which sometimes vegetated, they found it a thing so precarious, and of such difficulty, as to be induced to abandon the trial altogether. Others more persevering, endeavoured to remedy these defects by a change of soil;

substituting loam and younger cuttings; but here a fresh difficulty arose, by the cold nature of so strong a soil, rotting the tender cuttings, in many instances before they had time to vegetate; as well as the young fibres of such, as lived to produce them; unless transplanted at an age, in which it was otherwise unadvisable to move them; by which many were also lost.

But to those who delight in following nature through all her various ways, and assisting her by the timely exertions of genius, every obstacle is but a fresh stimulus to their industry to collect the smallest occurrences, which tend to improve their former ideas on the subject contemplated; thus by a series of observations it was found, that the old wood of these, as well as many other plants, was by no means calculated to produce roots; that the one soil was too light and unsubstantial to support the tender green wood while devoid of roots, and the other too cold and stiff for their nature to flourish in afterwards; therefore, having proved that the young wood succeeded best as cuttings, the only thing to be looked for was a warm, open, yet partially retentive medium, best calculated to obviate the above defects. A know-

ledge of the nature of soils led to the adoption of sand; as being at least possessed of *part* of these qualities; therefore the most proper for this purpose; which has by its effect proved the correctness of the hypothesis.

Who it was that first applied sand to this use I know not, but this I am certain of, that for the improvements made in its use, we are highly indebted to the enlightened proprietors of the Hammersmith Nursery; they having in their extensive collection, carried the use of it to the highest pitch; as well in the propagation of various other plants, as of heaths, particularly those of New South Wales.

A good deal depends, in my opinion, on the choice of sand for this purpose; many prefer the whitest and finest they can procure; at all events pit-sand is the most proper; but from recent observations, I am inclined to think, that its goodness does not depend so much on the colour, as the texture, a lively vegetating sand being, in my opinion, preferable to that of a dead, fine, binding nature, be it ever so white; but it should be a pure sand, untainted with any mixture whatever.

The manner of using it, is to have the pot

well drained as usual for cuttings, and then filled with sandy peat, within an inch of the rim; which must be pressed pretty light, so as not to sink much afterwards; let the remainder be filled with the sand and well levelled at top, being also pressed tight; the whole should then get a good watering to settle it before the cuttings are inserted; then proceed to make the necessary quantity of cuttings to fill it, and the sand will be soaked sufficiently, and fit to receive them by the time they are ready.

To have these from such parts of the plant as are most likely to produce roots, a preference is to be given to the young tender wood, of the same season's growth; as before noticed, but strong, luxuriant, or leading shoots, are not to be chosen, as from their redundancy of sap, they are exceedingly liable to damps; the ends of the lateral, or side shoots, are by experience proved to answer infinitely better, when selected with judgment, so as care is taken to reject any that have in the least degree attained a hard woodiness of substance, or that cut wiry, and tough. They need not exceed an inch in length, two thirds of which is to be divested of

its leaves, and finished by a clean horizontal cut at bottom ; but in taking the leaves off, it is necessary to be careful not to injure the bark of the cuttings, by paring them too close, but rather to leave a part of the footstalk attached to it.

When a sufficient number is ready, let them be immediately inserted in the sand with a small neat dibber, something about the shape, and size of a goose quill; they should be pretty well tightened in the sand, and have a moderate sprinkle of water to settle it about their stems. A proper glass being previously chosen, when they have stood about half an hour to drain, and settle, it should be set on ; pressing it gently on the surface so as to make it perfectly close.

If this business is begun in June, which is early enough, they must, with the other cuttings (on account of the encreased heat of the season,) be plunged in some cool shady situation where they can be conveniently shaded when requisite: an exhausted hot-bed, with a frame, and good lights on it, will answer very well; or otherwise, the north side of any low wall or hedge where they will be a little shel-

tered from the noon-day sun, and have the benefit of it morning and evening; in either place, the pots must be plunged up to the rim in old tan, or saw-dust;* and in the latter, they will also require to be covered with large cap glasses over the small ones; as well mixed cuttings, as heaths: except a few of the herbaceous sorts, such as Arctotis, Calendula, &c., and strong, substantial broad leaved kinds, as Camellia, Laurus, &c. &c., which will succeed better without the small glasses at this season, so that they are covered with sound air-tight caps.

There are many others, indeed all late growing deciduous, as well as evergreen, such as pomegranates, oleas, myrtles, &c. &c.; which in general only form their callosities previous to the ensuing spring, that, in my opinion, do better without the small glasses; as I have observed their leaves to drop off much sooner when too closely covered, than they do when differently managed; and it is well certified, that, the longer the leaves are retained in an active state, the greater the probability of suc-

* Saw-dust is to preferred, as it prevents, while fresh, the access of worms through the bottom, and snails to the surface, of the pot.

cess: this is to be merely understood as relating to late cuttings; for the same articles, if put in early in Spring, *very young*, in a moderate heat, closely covered, properly shaded and dried, will strike astonishingly quick.

Cuttings of all the kinds that remain to be propagated should also be made at this season, and managed in the same manner.

The whole being thus arranged, they must be carefully shaded whenever the sun acts violently on them, especially when first put in; but they ought not to be shaded longer than four or five o'clock in the afternoon, according to circumstances;) as the mild influence of the sun at that hour will be necessary to dry up any damps that may have arisen within the caps. It will be also requisite to dry the small bell glasses every morning, as directed for the spring cuttings; and to water occasionally any of the pots which may require it; for though it is proper to keep the top of the cutting dry, yet the mould in the pot must be kept as near a medium as possible between wet and dry, otherwise they will not freely vegetate.

Some of the first put in spring cuttings will, in May, or June, require to be parted and

potted separately in small pots; in performing which, be careful to avoid breaking the roots, using them much in the same manner as I have already directed for seedlings. When potted, and watered, they must be set on the kirbs, or other convenient places in the stove for a few days, and shaded until they have established themselves in the fresh mould; as soon as they have taken to grow freely, let them be removed to the green-house; but observe not to expose them to the open air entirely at first, as it might do them a material injury; on account of which, the lights over them should be kept closer than usual for a few days. The plants which were put into the stove to force for cuttings, may also, if done with, be removed to the green-house and treated in the same manner.

About the middle of June, any of the tenderer green-house cuttings that have been left in the stove since spring, should be plunged under the cap glasses, along with the others; where the whole must be carefully attended to, every morning, to pick off damps, dry the glasses, and water when wanted; it is adviseable when fresh watered, to let the glasses

stand off for about a quarter, or half an hour, to dry the surface a little, except the sun happens to be very clear, and shining direct on them.

I have already remarked, that there are many kinds which do better without the small glasses; such as the strong growing, spongy, and succulent kinds; also those with thick leathery leaves, as the Camellia, and some species of Ilex, &c. which are very liable to have their leaves scorched, by the glasses collecting the rays of the sun; a circumstance particularly injurious to these fine plants.

Any time during the months of June, or July, cuttings of these sorts may be made with success; as by that time, the young shoots will be sufficiently firm for that purpose, and will strike freely in good loam: but Camellias and such like sorts should not be cut until the shoots have finished their growth, and the leaves attained their full size, as they are, when taken too young, particularly subject to rottenness and damp.

In July, and August, there will be many of the earlier cuttings growing, they should have their glasses taken off as before directed; and

afterwards be set for a few days in a more exposed situation, to harden them by degrees, in which they must be shaded from the midday sun, but freely exposed to the air at night.

Parting, and potting, should also be occasionally performed on such as are ready for that operation; when, if any of them happen to be more backward than others, in the same pot, and not rooted, let them be put in again as cuttings, and treated as such; those potted should be set in a cool frame as directed for seedlings, where they must be kept close, and shaded except in mild weather, until they are by degrees inured to the free air.

At the season in which it is judged adviseable to house the general collection of greenhouse plants, it will be also requisite, to have the cuttings removed to the house; to be cleaned, sorted, and regulated according to their different kinds, and stages of growth. The commoner sorts will do to be set in any part of the house where they will have free air, and light, and that they can be got at conveniently to water, and pick them when necessary; the more curious kinds should be set in a dry airy part, where they can be carefully

attended, to prevent their getting over dry, or dirty, and also to take the glasses occasionally off those that may be growing. All the backward Heaths, Proteas, or any other hard wooded kinds, such as are most of the Botany Bay plants, &c. that take a long time to strike, should be set in one of the coolest and driest situations of the hot-house, where they must be watered, and cleaned, like the others, throughout the winter.

Towards the commencement of the new year, many of them will begin to grow, therefore, the glasses must be taken off such as soon as necessary. With the advancing season, these will likewise advance, and soon require to be parted, and potted separately. When this is done, they must be set on the kirbs, and window benches of the hot-house, and shaded occasionally for a few days, until they are found able to endure the full sun without flagging their leaves. In about a fortnight, or three weeks, they will be fit to be removed to the green-house; unless it is particularly wished to forward any of them in their growth, in which case they may be left in the stove a few weeks longer.

In this manner may be propagated, most of the green-house plants that have been hitherto introduced; except such as do not produce stems, which are generally done by parting the roots, or by seed.

There is also a method, which may rank mid-way between grafting and inarching; (see page 10) in which the top of the stock is left on as above, but the scion is cut off as in grafting; this is conveniently practised upon dwarf oranges, or such others as can be readily covered with glasses.

The general process is to sow the seed of the common orange or lemon of the shops in a strong rich mould, and plunge them on a moderate hot-bed; these will produce a sort of crab stock, which should be potted separately the ensuing spring, and forwarded with a good hot-bed heat until about the middle of summer; when they should be set in the open air to harden them against the winter following. The next spring, they will be fit to have scions of the cultivated sorts worked upon them, either by inoculation, or this demi-grafting, here spoken of, which is in general to be preferred.

The manner of doing it is to form the scion as for the common whip graft, and then, without taking off the head of the stock, cut from the clearest part of its stem an equal splice, smoothly as possible, so as to be fit to receive the graft; let them not by any means be tongued, but immediately tied in a neat, and firm manner with matting, being previously well fitted together: they must be clayed in the manner of a graft.

In either way they are done, they will again require the aid of a hot-bed, and if according to the latter method, they must be plunged so as to be covered with cap-glasses until they are united, and begin to grow; as soon as the union is perfect, the top of the stock is to be cut cleanly away, and the plants treated as cuttings, by shading them, &c. until they are fit to remove to the green-house. In this manner may be done any number of dwarfs that are wanted, but those large, high-stemmed trees, which we so much admire, are imported annually from Italy or some other of the southern countries of Europe; as we cannot so easily grow the stock to that size in our northern climate.

For half standards tolerable stocks can be procured by sowing early, and as soon as potted separately let them be pushed on by hot-bed heat for a season or two: when if they have been regularly trimmed up to a leader, and had sufficient pot room, they will be in good order for working the second summer, which I generally do by inoculation: but should the above manner of grafting be adopted on these tall stems, it will of course be very inconvenient to cover them closely with glasses. I would therefore recommend the leaves to be trimmed off to about one-fourth of their length: for if left on in a full state of respiration, the action of the air on their pores very soon deprive them, and by them the scion, of the small portion of vegetable life detached with them from the parent stock, but the above precaution renders the scion in a degree dormant, and by tying a little moss over the claying to keep it from the air and sun, it will soon become sufficiently united. For dwarf trees I prefer stocks that have not been forced after the first potting.

There being but very few green-house plants propagated by any of the other artificial methods, viz. inoculation, laying, or inarching, it

becomes unnecessary to say any thing concerning them here, having given such explicit directions thereon in the hot-house division.

CHAPTER II.

SECTION I.

THE management of green-house plants being so materially different from those of the stove, it becomes evidently necessary to treat of them under a separate head; yet I shall proceed with them in a similar manner to that which I have already observed in speaking of those plants, in the preceding Chapters, *i. e.* to explain, in the clearest manner, the general process necessary for their culture and good management.

On account of the variety and number of these plants, it is rather difficult to reduce them to any one certain rule; not only because they are less expensive, and consequently more cultivated, but also that our milder climates, are found to produce plants in greater abundance than the Torrid Zones.

Therefore the business of shifting in this department is, in general, a more weighty concern than in that of hot-house plants; in

consequence of the collections of the former description being so much more extensive than those of the latter, and equal care is necessary to both.

To be enabled to execute this business with regularity, every preparation should be previously made, and the different sorts of mould laid up in a shed; as well to keep them from becoming too wet for use by sudden showers, as from getting too dry by the action of the sun, or arid winds which may be expected at this season. Also on wet days (if nothing more urgent is to be done) let a quantity of old broken pots be made small, to serve for draining to the tenderer sorts; the coarse siftings of peat being sufficient for the stronger growing kinds.

Things being thus in readiness about the middle, or end of May, the general shifting should be commenced: in order to which, let some of the plants be carried to the shed, and carefully proceeded with in the manner already directed for hot-house plants; observing, above all things, not to injure the roots, but gently to loosen them with the hand in such manner, that the matt of roots, which is generally

formed on the outside, may not remain entire ; whereby they will soon strike into the fresh mould that encompasses them.

Green-house plants for the most part require a considerable share of pot room, as many of them are very free growers; but still great caution is necessary, to avoid over potting the tenderer weak growing kinds. When shifted, let them be tied up if requisite, and well watered. It will be also necessary to shade them for a few days from the influence of the sun and winds, until they are perfectly established in the fresh mould. Any dead, or ill-grown parts can now be with propriety cut away, so as to give the heads a regular neat appearance: by observing this process, it will be found, that though a temporary check may be the consequence, they will soon flourish and do much credit to the operator by their healthy appearance and progress.

It being mentioned that shelter, and occasional shade, is necessary for a few days when they are first placed in the green-house, I must add, that should the weather prove dark, and cloudy, this work may be omitted: however, if hot sunny weather ensue, it will be indispen-

sably necessary; and also, to water them twice, or thrice a day when first potted, observing to wet the leaves as little as possible.

By the middle of June, it will be time to think of preparing the out-door departments, in which it is intended the plants should stand during the summer months.

The most eligible situations for this purpose are, the north aspect of vacant walls, or hedges, where they will be a little shaded from the noon-day sun, or between rows of close hedges particularly planted, and solely appropriated to this purpose. I can by no means espouse, or recommend the practice, of setting them close under the shade or branches of large trees; as the plants are thereby inevitably drawn into a weak state in a few weeks, and those who adopt such situations, are not unfrequently under the disagreeable necessity of throwing away many, of perhaps their most rare plants, every Autumn; and even those that remain will have a bad unsightly appearance. Indeed shelter from the winds, is the great desideratum, to prevent their being upset; for in my opinion, most green-house plants are fond of the warmth of the sun; except when recently

potted, provided their roots are kept moderately moist. Let us look for a moment to the arid mountains of the Cape, &c. and there we shall find them exposed to its full glare, and perhaps without water for months : their roots however can penetrate deeper there than they can possibly do in pots, so that life is preserved, and as soon as the periodical rains commence, they resume in a very little time their verdure, and, " breathe their balmy fragrance all around."

Some gardeners' practice is to plunge them amongst the shrubs and flowers of the pleasure ground ; this answers pretty well with the strong growing kinds ; such as myrtles, geraniums, coronillas, &c. old plants, or supernumeraries that will not be wanted to house in the Autumn : and even has a very pretty effect when judiciously done ; but it will by no means do for the tenderer species. Therefore, upon the whole, the most unexceptionable situations, are such as at the same time afford a moderate portion of shade, and are so situated, as to break the force of those strong gales, which frequently blow in the summer, and early Autumn months, and yet allow that free circulation of air so necessary to the well-being of

plants in general, and at all seasons. Having fixed on the place they are to stand, it must be thoroughly cleansed from weeds, and the hedges, if any, neatly clipped. It should then be well rolled, to make it perfectly firm and level, over it a layer of good lime, slacked, and made into the consistency of thick white wash, should be poured; and let to soak into the surface: This I recommend as being a strong preventative against worms getting into the pots; which is always injurious to the plants. When this is dry, let about an inch of finely sifted coal-ashes, be regularly laid on, and firmly rolled a second time.

Being thus prepared, the plants may be brought out and set regularly and level on the surface; in whatever form may best suit the situation, or the fancy of the proprietor, even on this subject a few observations may not be unnecessary.

Therefore in placing them, it should be endeavoured to give them a loose, easy, but yet judicious manner; which is by far more handsome than the stiff, shorn like front, admired by some: any plants that may be in flower, should be placed in conspicuous situations, but

not so as to make the clump look in the least tawdry; simplicity, and neatness, are the principal objects to be considered, in this, as well as the other decorations of the flower garden: another circumstance to be remembered, is, that now as their summer growth commences, it will be necessary to allow each plant, sufficient room to spread according to its natural habit of growing; and also to be careful, that the curious tender sorts, (which are frequently the most valuable,) are not crowded or overshadowed by the large free growing kinds. Indeed they should be set, as well as *heaths*, in a separate clump; as they lose a good deal of their interest, by being confounded with large shewy plants that attract the eye, at the first glance, from the more delicate and minute, but to many not less attractive species.

Should the weather prove dry when they are thus set in their clumps, they must be freely watered; particularly in the afternoon, when the sun has nearly ran his course. A good washing also with an engine, or syringe, at times in the absence of the sun, will be of considerable service to them; but if any individual plant should at any time become too wet, let it

be placed apart from the rest, and not watered again until it evidently requires it: this is a circumstance which I shall have occasion to mention hereafter; all that is necessary now, for a few weeks, is to pick off dead or withered leaves, and weeds of every description; and a regular attention to the directions already given.

SECTION II.

The attempt would be impertinent, to fix the precise time in which the plants should be again housed, the variations in the temperature of the seasons, in different years, render it impossible. However, as the young tender shoots of the summer's growth, are extremely liable to be injured by the frost; as soon as any symptoms of this appear, they should be removed to their winter quarters; where, if the green-house is built on a proper principle, they can still have the benefit of the free air, and at the same time be in a situation to be protected, when necessity requires.

Impressed with this idea, I think they should at all events, be removed in the earlier

part of September. Therefore, about a fortnight before that time, they should be regularly examined, and any roots that may have extended themselves through the holes at the bottom of the pots, cleanly cut away,* with a knife or some such instrument: this tends to stop the too luxuriant growth, and being executed at a proper period, before their final removal, they have time to recover themselves from the partial check they may have received by it; which would come doubly severe, if, deferred until the time of removing them into the house; the transition from the cool bottom on which they stood, to the dry boards of the green-house stage, being so materially different.

It will be also requisite to have the flues examined as to their cleanliness, and tried with a smothering fire, lest there should remain

* The cutting of the extraneous roots away at this season, is not likely to be of such serious consequence to the plants, as if done when shifting, as the ball of root is preserved undisturbed within the pot, yet in some of the more luxuriant species that may have been plunged in the borders, it will be preferable to break the pot rather than destroy the roots, and of course the plant put into a larger one immediately.

any cracks to admit the smoke into the green-house. The wall should likewise be fresh whitened, at least every second year; and any repairs that may be necessary to the stages, or glass-work, previously rectified.

Things being thus prepared, and the time fixed on to remove the plants, the large heavy ones, such as orange trees, &c. should be carried to the places where they are to stand at once, as it will be very inconvenient to remove them after the house becomes crowded with other plants. The smaller kinds must be regularly placed in front of them, with a gradual descent from the back, down to the lowest in front, placing any curious, or handsome plants in flower, in the most prominent and conspicuous situations. They must not be set too close when first put in, as it would occasion most of their tender leaves to turn yellow, and fall off; neither should they, if the house happens to have been built on a close construction, be by any means taken in when their leaves are wet.

In large collections, could the different genera be kept together, it would I think have a much better effect; in particular the more

numerous ones, such as heaths, Proteas, geraniums, &c. and indeed heaths are of that unsociable nature, that they will not do well if mixed promiscuously with other plants, especially any of the broad leaved kinds: it is implied by this observation, that there should, if possible, in all large collections at least, be separate houses for these very numerous genera; but in all houses there is a variety of situations: some more airy, near the windows, on end and front benches, for such as heaths, Proteas, &c.; all mountainous, Cape plants, should be kept if possible on shelves, such as graphaliums, bulbous geraniums, &c. &c.; some closer, as the principal stage and back benches, for orange trees, geraniums, and all such as grow in low sheltered situations: thus in every instance, it is necessary to attend to natural habit.

When they are all housed, and dirt of every description taken away, let as much free air be given as possible in the day time; and even at night, should the weather prove moderately mild, and free from any appearance of frost. In fact, I have seldom seen frosts at this early season so severe, as to injure any green-house

plants, that were not immediately exposed to its perpendicular effect: therefore the front windows may be kept open continually, unless there is a prospect of its being particularly severe, or accompanied with cold driving winds, in which case it will be necessary to have them pretty close.

If air is too sparingly admitted at this season, when many of the plants have not yet finished their summer's growth, it will inevitably cause them to produce weak, and tender shoots; which will be extremely liable to damp off at a more advanced season, when the house must be unavoidably kept close on account of the severities of the external air; and besides, it will tend to give them a more general tender habit, and render them less able to resist the winter colds than they otherwise would. Hence it is evident, that they cannot receive too much air, whenever the state of the external air will admit of it, by being free from all appearance of frost; as it will be so much to their advantage to be thus hardened, before the winter assumes its severest front.

This is a practice I would strenuously recommend to all cultivators of exotics, to be

observed the whole period they remain in the house, their own observations on the state of the weather being their constant guide.

Water should also be plentifully administered when they are first taken into the house, as the dry board, on which they now stand, (a circumstance which I have already had occasion to mention,) as well as the elevated situation, and free circulating air, occasions them to require more than when they stood on the moist earth; however, by no means go to the extreme, giving it only when evidently necessary.

It is a common, but in my opinion, a very erroneous practice, to place pans under the pots, indiscriminately, and by many they are regularly filled with water, twice, or thrice a week, or perhaps every day, whether the plants may want it or not; and this they are pleased to term a saving of labour; and it eventually becomes so in fact; for they have seldom so much care, and trouble on their hands, in the spring, many of the most curious plants being killed by this treatment: for although it may not perceptibly injure the coarser kinds, its pernicious effects on the

tenderer sorts must be evident to the commonest observer; as the earth in the bottom of the pot, by being constantly in the water, becomes coagulated, and sour, and is consequently liable to rot the young fibres, by which the plants in general contract a languid and sickly habit.

As the close foggy weather advances, water must be given more sparingly, else it will conspire with the atmosphere to encrease the damps of the house; which will inevitably injure the plants by rotting their leaves. These, and dead flowers, should be picked off as soon as they are observable; otherwise they will make a very disagreeable appearance.

Early in October all the tender Cape bulbs should be planted; viz; Ixia, Iris, Moræa, Gladiolus, Antholyza, Ferraria, Galaxia, Oxalis, Lachenalia, Ornithogalum &c. &c. as they generally commence vegetation about this time, and will supply a most beautiful variety of flowers for the ensuing spring and summer: but if wanted to flower later, let them not be planted before November.

When growing they should be kept pretty

moist, particularly the stronger species; otherwise they will not flower freely, and such as do will not be so fine: however, when they are done flowering, and the grass indicates an end to vegetation for the season, they should be gradually dried; and when perfectly so, either set in the pots in a dry sheltered place, or otherwise taken out of them, and put in separate paper bags, in sorts, until the Autumn: I prefer the latter process; it is necessary to keep them in sorts, otherwise the strong, which are not always the finest kinds, would smother the delicate ones, that in many instances produce the most brilliant, and frequently odoriferous flowers.

The months of November, and December, seem to be more noxious to the health of plants, than any other season; by reason of their being full of young sappy leaves, and the remains of many of the Autumn flowers still on them, when the weather, (which at this time generally becomes close, and chilly,) renders it necessary to keep the house shut, and warm; this occasions a most pernicious damp to exhale from every part of the house, and even from the earth in the pots; which fixes on the

leaves, and other parts of the plants, to their inevitable injury, particularly the younger parts, such as were the produce of the preceding summer. If this kind of weather continues for any considerable time, it will be adviseable to give a little fire heat, to help in drying up these baneful exhalations, and also as much air as can be safely admitted by the doors, and front windows; more especially when fire is added; otherwise the heat of the flues will, instead of expelling the contaminated air, rather occasion it to exhale more freely, and be of worse consequences.

At this season also, the plants should be regularly examined to clear them of all dirt, and also to scrape off any moss, &c. that may have grown on the surface of the mould, and to renew it with a little fresh loam. This contributes much to their good appearance, if neatly executed.

SECTION III.

The united action of the four elements, seem to be as necessary to the existence of vegetables, as it is to the human frame; for if they

are entirely deprived of any one of them, or even in a much less proportion than they naturally require; though they may linger for a while, it in the end never fails to prove fatal. I have already treated of the three principal ones necessary to our purpose, and shall now proceed to the fourth. Fire, which is here as it were only a secondary agent, used to keep the others in an active state, and is therefore administered in different proportions according to the various degrees of heat necessary to be kept up, in each separate department.

Very little fire heat seems to be requisite to the preservation of green-house plants, in this climate; in fact, the less it is found necessary to use, the better. I have never practised it, (except in the case of damps, as before mentioned,) until I perceived the frost so severe, as to lower the spirit in the thermometer several degrees below the temperate point, and then merely sufficient to raise it again to the above-mentioned point. If this can be done without the assistance of fire, so much the better, for which purpose, bass mats must be used along the lower parts of the house, where they can be conveniently fastened; these will be of infinite

service even when fire is used, as less of that element will suffice; but they should be always taken off in the day to admit the light, unless the weather happens to be particularly severe. It may be also proper to remark, that the more dry the mould in the pots is kept, at this season, the better; as it will be less liable to attract the frost; therefore, water must be used very sparingly, and only to such as are in actual want of it.

Sometimes in the depth of winter, there is a succession of very clear weather for several days together, wherein warm sunny days, succeed the coldest frost, and nights in which fires have been absolutely necessary; in this case, it will be requisite to give all the air possible in the day, (unless strong harsh winds, or other occasional preventatives happen to prevail,) observing, to shut the windows up close, early in the afternoon, so as to include part of the natural heat of the atmosphere, within the house. Such weather renders an encrease of water necessary, especially over the entrance of the flues, where the fires have the greatest force. It should be administered in the morning, and ought to be kept in the house all night to expel

any frosty particles it may have imbibed, and render it nearly equal to the temperature of the air of the house.

For this purpose, many houses have cisterns erected within them, to receive the rain water collected at the eaves; these, if conveniently placed, and properly contrived, are certainly useful; yet they should be so constructed at bottom, as to let off the superabundant water, else it will soon, by being stagnant, emit a most disagreeable smell through the house, and contribute much to the noxious damps exhaled by the fire from the other parts; did the bottom terminate in the form of a truncate inverted cone, with a pipe leading to any outward, unfrequented situation, I think it would be an improvement; as it would admit the collected sediment to pass freely off with the superabundant water.

Rain water is in general thought to be the most proper for plants, as it is believed to contain a much larger portion of the food of vegetables, than any other; because, being exhaled from the earth and sea, by the action of the sun, it carries along with it large quantities of the natural salts so necessary to the life of vegeta-

bles; which being purified in the air, returns to renovate the exhausted surface whence it originated. Therefore, where it is not convenient to have cisterns in the houses, it will be necessary to have a considerable reservoir adapted to the purpose of collecting it in quantity, in some convenient part of the garden, near the houses; which may be also rendered very ornamental, by decorating it with a collection of those beautiful water plants, which this country affords in abundance: such as Water lily, in varieties, &c. &c. even if it becomes necessary to fill it by the assistance of a pump, or land drain, the water by being thus confined, and exposed to the influence of the sun, becomes meliorated, and will, in cases of emergency, supply the place of better with tolerable good success.

However in the winter months, if there is no internal cisterns, and there exists a consequent necessity of using the water from a reservoir, exposed to all the vicissitudes of the weather, it will be proper, should the frosts become severe, to deposit as many water-pots, full, as will be necessary for the present use, in the house over night, as already directed: yet let

me again observe, that unless it becomes actually necessary, by the action of the fire, or the extreme drought of the season, (a circumstance not much to be dreaded in our climate at this time of the year,) the less water used the better; for though the plants in general like to be kept pretty moist in the summer, there is hardly any thing more pernicious to them now than an extreme of moisture.

SECTION IV.

During the months of January and February, and indeed all through the winter, and early spring, on account of the necessary closeness of these departments, it may be expected to see a few dead, or yellow leaves on the plants; these, together with the dead flowers, and whatever damps may occasionally appear, should be picked off as soon as discovered.

The mildew, and green fly, will also be paying frequent visits at this season; particularly on the young shoots of heaths, and such like tender leaved plants. The best remedy I have been able to find, for the first of these, is, to procure about equal proportions of sulphur, and

roach lime slacked, and finely sifted, the quantity according to the number of plants infected, to be used in the following manner:

As soon as the least symptom of this disease, is perceived, (for the sooner it is stopped the better,) which makes its appearance like a whitish down around the tops of the tender shoots, or a species of fungus on the back, or under part of the leaves, provide a vessel full of clear water, large enough to immerge the plant in, exclusive of the pot, which must be held in an inverted position, with the hand placed so as to prevent the mould falling out; in this manner plunge the plant into the water, and while it is wet, holding it in the same position, let another apply the above preparation, with a worm puff, or some such machine, in such a manner, that every part of the plant may be perfectly covered: one dressing in this way, will in general be found sufficient. The plants should afterwards be placed in some dry, airy part of the house, but if possible, not in any conspicuous situation, until it recovers its verdure.

As to the fly, fumigation as already recommended for the hot-house, will be found ade-

quate to its destruction; strictly observing to perform it at the proper season, that is, when the air is perfectly calm, and if close foggy weather so much the better; every aperture should also be stopped, so as to exclude the external air as much as possible.

Towards the end of winter, the plants should be regularly examined, and cleaned from any filth they may have acquired during that dreary season; such as moss on the surface of the pots, and leaves that have dropped thereon; also any plants that may have grown into a loose habit should be tied up. The platforms or stages should be clean brushed, whilst the plants are removed, and any worms that may have harboured in the pots dislodged, by turning them upside down, and lifting them carefully off without breaking the ball of roots; at the bottom or sides of which they are generally to be found. It is easily known when they are in the pots, by their casts on the surface. Indeed this is a thing that should be attended to at every season of the year, as they are to be observed more or less at all times, and considerably disorganize the œconomy of the pot, when suffered to persevere.

As the spring advances, it will be found necessary, and convenient to admit a more free circulation of fresh air, and on account of the encreasing drought and heat of the season, water must be given more plentifully; but the houses must not yet be left open at night, particularly the top lights, as the weather is in general so very changeable at this season, that it frequently happens, although the evening may appear mild and serene, the morning ushers in with a severe frost; which if admitted to the plants, would materially injure them; and perhaps at once render all the winter's care and attention abortive. Therefore, I would not recommend any dependance on the weather, (at night in particular) until about the middle or end of May, as it seldom becomes in any degree settled before that period, when, being arrived at the season, in which all nature springs afresh, and puts on her robes of green, and naturally secured against the return of frosts, we may venture to expose the plants both day and night to all the vicissitudes of the weather, should it continue in any degree moderate.

Being thus treated, they will require a con-

siderable encrease of water, which may now be copiously given to them, particularly the more free growing kinds; but let the following be observed as a general maxim, not to be departed from; that it is necessary to the health of plants, especially the tenderer species, to be permitted to become moderately dry, before they are again watered; because, when kept in a continual wet state, the mould becomes entirely destitute of that active quality, so indispensably necessary to vegetation; and the plant in consequence, will assume a very unhealthy appearance: which many might perhaps not attribute to the proper cause.

There are a few plants which rank amongst the inmates of the green-house, which require to have their roots constantly *covered with water;* these we term aquatics; they are sometimes introduced in pots, tubs, troughs, cisterns, or basons, according to the fancy of the cultivator, any of which, when used for this purpose, must be made sufficiently tight to retain the water put into them. I shall give some directions concerning the planting, and management of these plants, when treating on the conservatory; to the ornament of which

department, in my opinion, they add no inconsiderable share.

There are also many of our finest plants treated generally as green-house inmates; but for which it is nevertheless necessary to have a little extra warmth and close air in the early part of spring; viz. Camellia japonica in varieties, Gardennia florida, oranges, &c. &c.; they are to be hardened gradually to the free air and open situation early in summer, and will produce their flowers in proportionate abundance to the care that may be taken of them while in heat. A large pit wherein a dung bed can be made is the most suitable for them; but in default of that convenience, deep frames will do. They should be shifted into fresh pots as soon as they begin to shoot, and kept well shaded from the strong sun while growing, but more exposed to the air when done.

PART THIRD.

OF

THE CONSERVATORY.

CHAPTER I.

SECTION I.

THERE can be no stronger argument in favour of this method of growing plants, than the numerous buildings of this kind that have lately been erected by the nobility and gentry throughout the kingdom; and the practice being patronized, and recommended by men of the first respectability amongst gardeners, who have either through inclination or necessity dedicated a considerable part of their time to the study of natural knowledge: also the self-evident utility and pleasure accruing therefrom

renders it partly unnecessary for me to attempt saying any thing in its favour. I shall however give a few reasons why it is so recommendable, previous to the rules necessary to the good management of such departments.

In the cultivation of hot-house and green-house plants, as well as in all other branches of ornamental gardening, the nearer we assimilate art to nature the more pleasure we receive from the result of our labours, and the art employed is thereby proved to be more perfect.

Plants growing in the conservatory fashion, by their unconfined luxuriant habit, have a much more natural appearance than when growing in pots, forming as it were a wood in miniature, of the most rare and beautiful productions of foreign climes: productions which, when properly managed, far exceed in delicacy and elegance any thing ours will produce. (Though for the honour of our Islands I may add, that they perhaps produce articles of as much, if not more general utility), besides having a strong vigorous growth, which could not well be expected from them in pots, they consequently produce their flowers with more elegance, and much greater abundance: which

is the chief object of the florist, and likewise affords to the curious investigator of nature an opportunity of analyzing the entire process in many plants, of which in other cases he could have formed only vague conjectures, or be obliged to rest solely on the authority of others: which, however creditable, is not so satisfactory as ocular proof.

Thus a conservatory properly planned, planted, and afterwards well managed, stands forward as a department merely intended for recreation or study, a conspicuous instance of the perfection to which horticulture has arrived in this country, and the improving spirit of the nobility and gentry in general.

The various differing ideas in planning, and building these edifices; every one suiting his convenience and situation, renders it almost impracticable to say which is the best; however, when a house for this purpose, (or in fact for the growth of plants in any fashion) is intended to be built, the greatest attention should be paid to the choice of situation; preferring a dry, airy, but sheltered and warm aspect; and for conservatories in particular, I think, that if attached or contiguous to the drawing room,

the more pleasant; as they thereby afford an agreeable retreat at seasons, when other parts of the garden cannot be visited without considerable inconvenience.

They should always be finished off in a tasteful manner, suitable to the purpose; and a good provision made for the various climbing plants, of which there are a considerable variety that constitute a principal share in ornamenting these departments by being trained on the piers or wires, hanging in fanciful festoonery along the roof of the house.

These houses should always be built in the early part of summer, that the work may have time to settle and season before the plants are finally arranged therein. The pit also, in which they are to be planted, should be filled some time before on the same account. For which purpose, the following composts should be used in manner here specified.

Having the pit first emptied to its proper depth, which should be at least two feet and a half, spread a sufficient quantity of broken tiles, pots, or coarse gravel in the bottom, to make a floor of four or six inches, for the purpose of keeping it as well drained as possible, and over

this, a layer of the coarsest siftings of the peat, about six or eight inches thick, to prevent the finer mould filling up the interstices in the under stratum. This done, prepare a quantity sufficient to fill up the remainder, of loam, and peat; they must be well mixed together and chopped rather fine, about equal quantities of each is a good proportion, and if about one-fifth of fine sand were added, it would benefit the compost materially. The whole should be cast up in a heap, so that any large lumps or tuffs of roots may be the more easily raked off, which is all the preparation it requires.

It will be shown in the latter part of this work, what is meant by the different descriptions of soil here mentioned, the situations in which they are most likely to be met with, and how to be chosen.

The mould being prepared as above, proceed to fill up the pit with it, and observe to raise it considerably above the kirbs of the pit to allow for its sinking; also to make it as level as possible, that it may settle the more regular. There will likewise be a number of smaller detached places to be filled, which are intended for the reception of the different climbers; such

as a border along the back wall, against trellis work, or pillars in the centre of the house, and the piers between the front and end upright sashes. These should generally be filled in the same manner as the pit; unless in a case where there is a small space intended to be occupied by a single plant. There, the upper stratum should be composed entirely of such sort of earth, as may be thought most suitable to the species of plant proposed to be planted therein.

This business should not be deferred later than the middle of July, so that the earth may have sufficient time to settle, and the plants to establish themselves therein before winter. Note, the top or sloping lights of the roof should not be put on as yet; the free action of the atmospheric air, being particularly necessary to purify and assimilate the component parts of the soil.

When the mould has sufficiently settled and is judged fit to receive the plants, which will be in about a month, (the middle of August)*

* A conservatory may be planted in any of the spring or summer months, with equal success; if the premises are fully prepared. The time above mentioned, is on the

they should be planted without further delay; in performing which it will be requisite, first to set each plant on the surface, in the place wherein it is intended it should stand, that an opportunity may be had of changing any of them to situations in which it might be thought they would have a better effect.

In thus regulating them it should be a leading principle, to pay a strict attention to variety; endeavouring to mix the different shades and foliage in the most agreeable and elegant manner. The future growth of the plants must also be considered, more than the present size, and the tall growing species arranged in the hindmost rows, and the more dwarf kinds towards the front: for although some which require to be in the back rows may at present be small plants, they will soon outstrip the others when planted out and encouraged. Care must be taken likewise to allow each species sufficient room according to its supposed natural growth.

Having arranged the plants in the best man-

supposition of the house being to build, &c. in the spring or summer, in which case, it cannot well be fit for the reception of the plants before August.

ner, according to circumstances, provide some of the different earths in separate baskets, so as to be enabled to add a portion to the roots of each plant, of that particular earth in which it seems to thrive the best: a precaution very necessary, as the transplanting these tender plants from a stronger to a weaker soil, or *vice versa*, might turn out very injurious: and yet the compost recommended as the groundwork for filling up the pit, is perfectly congenial to the whole when they attain a strong vigorous growth, at least to such as are particularly adapted for conservatories, as Botany Bay plants in general, Cape plants, except heaths and Proteas, which I think do better in pots; and in short the full list of what are termed green-house plants, with the above exceptions, which I doubt not might be done away with by allotting houses particularly to these genera.

At all events, the plants chosen should be in perfect good health, as I think the pit of a conservatory among the worst places for the purpose of recovering a sickly one. The hole should be made sufficiently large to admit, with the ball of roots, any additional earth that may be deemed necessary. Let the plant be turned

carefully out of its pot, and set upright in the hole, some of the favourite soil being previously put in; more of which should be added round the roots, and over that the compost of the pit may be levelled, and the whole pressed pretty tight to the roots.

In this manner, let the whole be planted, but observe that they are not deeper in the mould of the pit, than they were in pots. Many of them being extremely liable to canker, and mortify, in the lower part of their stems when planted too deep: particularly the tenderer sorts. They should all be carefully and regularly supported with neat sticks, and for the larger species pretty strong ones should be used; to prevent the winds from loosening them in their situations. After which, let them be thoroughly watered with a moderately coarse rosed water pot, to settle and bind the earth to their respective roots.

If this work is done at the proper season, they will make a considerable progress before the cold of winter puts a stop to vegetation; whereas, if deferred until late in the year, they for the most part remain dormant three or four months: yet they will even then, (pro-

vided they have not been injured by too much wet or otherwise,) begin to shoot out vigorously, and soon form the most beautiful heads, and produce their flowers in luxuriance.

The pit and trellis work being completely furnished, and time allowed for the water to soak through the roots, and mould to settle, the surface thereof should be carefully smoothed over with a fine toothed rake, or the hand, and rubbish of every kind cleared neatly away. Then let the other parts of the house be decorated in the best manner, with whatever plants may be remaining; I mean any shelves or benches that may be over the flues, or in any other part of the house, also the window stools, if there is room sufficient to set pots thereon: these if judiciously filled, with handsome growing and flowering plants, will add very materially in elegance to the contour of the whole group; besides, by this management, the house may be made to answer the two-fold purpose, of a green-house, and conservatory, as those plants which circumstances may render desirable to be kept in pots, can be placed to so much advantage, on the benches of this department; as also in the Spring, any pots

of forced flowers, such as roses, mignionette, lilac, &c. &c. when fit to remove from the forcing house; and if a few pots of china rose, or any others of a similar nature in flower, were set occasionally on the surface, or plunged in the pit in the most vacant places among the other plants, they would considerably improve their appearance; and being in pots, so convenient to be plunged, or removed at pleasure, there is no danger of their injuring either the roots or heads of the standard plants, when regularly attended to, and care taken in plunging them not to raise the mould taken out of the holes, too high to the stems of the adjoining plants.

SECTION II.

According to the drought or moisture of the atmosphere, it will now be necessary to water more or less every day, until about the middle of September, when it will be necessary to put on the top or roof lights, on account of the approaching winter; the evening is the most proper time for this operation; however, from the above mentioned season, until spring, for the same reasons as given in treating of the

management of the green-house in general, water should be administered in the morning only, and that rather sparingly; as from the great body of earth in the pit, the plants will require it less than those kept in pots, and more especially the weaker ones towards the front and ends, or any tender species.

About the middle of September, or in other words as soon as it is thought necessary to house the other green-house plants, the roof lights of the conservatory should likewise be put in their places; so that the plants may be sheltered whenever occasion requires such precaution. They should be fixed perfectly secure against storms, or sudden gusts of wind; but at the same time, in such manner, that they may be easily taken off the ensuing spring, without tearing or disfiguring the frame work or themselves. The plants in the mean time will require as much air as it is possible to admit on all fine days, and in case rain prevents the letting down of the roof lights, the front ones if any, should be as open as possible. This is to prevent the plants being drawn into long naked stems, and weak branches, which from their free habit of

growth they inevitably otherwise would be, the evil consequence of which circumstance, I think it quite unnecessary to comment on here.

However, as the cold of winter increases, which it naturally will do in the months of October, November, and December, a proportionate decrease must be observed, in giving either air, or water; and if necessary, to add a little fire heat, and matts along those parts of the glass nearest the plants, in such manner, as to prevent the frost or piercing winds from injuring them. Upon the whole, the conservatory in these particulars, requires to be managed in the exact manner already directed for the green-house; to which, to prevent repetitions as much as possible, we will refer.

As few objects is more desireable than to preserve the gay appearance of the plants, it will be requisite to pay constant attention to the removal of decayed leaves, and weeds of every description; also to tie up or cut short, any loose straggling branches that happen to show themselves, and the removing of those pots which may have been plunged or set on the pit, when out of flower, and if convenient,

their places supplied with others in a fresher state.

During the foregoing months, and January and February, the moisture of the atmosphere in such departments where there is a great body of damp mould, will occasion several species of the bryum, and other mosses, as also of the fungi, to vegetate; particularly, as the mould has had time to settle, and the surface to become of a close, firm texture; which would give the house a very unclean appearance. It must be remedied by frequently stirring with a small fork the whole of the pit, to the depth of two or three inches, and raking it over smoothly with a neat close toothed rake; which, as well as the fork, should be particularly adapted to this purpose, by being furnished with short handles; so as to enable the operator to use them with freedom under the plants, by which means, many branches and flowers will escape being broken off, which cannot be well avoided when awkward tools are allowed to be used for this purpose. As soon as raked, let some fine sifted fresh loam be thinly scattered over the surface, and it will tend to give it a more agreeable

appearance; besides, being dry, it will serve to imbibe a good quantity of the superabundant moisture.

As the Spring advances, they will require considerable attention to keep them in proper order on account of their great encrease of growth, more particularly the climbing plants, trained against the walls or trellis work; these should be daily attended to, and trained in their proper places; directing their course to those parts of the house, which, from their nakedness, appear to want them most: also these species of plants being remarkable free growers in general, it will frequently be found necessary to thin them by cutting away any unsightly parts, and those branches most destitute of flowers; by which means, there will be sufficient room for the young vigorous growth, and these should be trained in regularly as they advance, otherwise, they will attach themselves to the first object they meet, and render it difficult to dress them neatly afterwards.

Slugs, snails, and other vermin are very fond of harbouring among the leaves of these plants when permitted to grow crowded; also under any low bushy plants in the pit, whence they

make their nightly excursions, to the great injury of the foliage in general, if not seasonably detected. The drought and warmth encreasing with the year, will render it convenient to admit more air, and an encrease of water; two very essential points that should never be neglected.

As soon in summer as the weather becomes perfectly settled, the lights should be again taken down from the roof, and laid carefully by in some shed, where the glass will meet with no accidents during the summer months. The plants should have any necessary pruning, and be all regularly fresh tied up, to secure them against the free action of the wind; they will, if the weather happens to be dry, which is most frequently the case at this season, require an abundant supply of water, particularly the strong free growing sorts, on account of being thus exposed to the open air. The cause for thus taking off the top lights every summer is, that the plants may have the benefit of the warm invigorating showers of that season, and the action of the perpendicular air, which will be a great means of their acquiring that strong healthy robust growth, so much wished for:

indeed where it is not practised, the plants seldom fail of being drawn into the opposite unsightly extreme.

In two or three years from the first planting, many of them will be grown to as large a size as the house will admit. The knife must be then freely used among such, to keep them within bounds, and prevent their injuring each other; which they inevitably would, if permitted to grow too close together. However, in performing this, one must be very careful, lest they disfigure the general appearance of the plant, cutting away only the rude and overgrown parts, which should be taken clean off without leaving any of the stumps behind. The younger parts which are suffered to remain, should then be tied neatly up so as to form a handsome middling sized bush.

It will also be necessary to observe whether any have outgrown their neighbours in the front rows; these may conveniently be moved into more backward situations, and their places supplied with other new varieties, if to be had.

This work may be done with safety any time in Spring or Autumn, when the weather happens to be a little dull; it will be adviseable,

however, to cut off a few of the most luxuriant shoots, and to run a spade or large trowel down, around the roots, so as to form a ball, some days previous to its final transplanting; which also operates as a partial check on the free growth of the plant. It should be taken up with a good ball of roots, and earth, and well watered as soon as replanted: it may also be found requisite to shade such as are thus removed, lightly for a few days, if the weather happens to be very clear.

There are a few plants likewise that can be considered little better than annuals or biennials; these either die, or become very unsightly when that period elapses, and should therefore be replaced with young healthy plants of the same, or any other species that will suit the situation.

All the strong growing species of Ixia, Gladiolus, Antholyza, &c. do remarkably well in the pit of a Conservatory, their radical leaves serving as a natural shade to the roots of the other plants in hot weather, and their fine tall flower stems, shooting up through the tops without crowding or otherwise affecting them, create an agreeable variety in the early part

of summer, when other flowers are rather scarce.

There is also frequently introduced into these departments, a variety of aquatic plants, such as Nymphæa, Menyanthes, Aponogeton, &c. for the reception of which, cisterns are contrived within the house to be supplied by the rain falling on the roof or otherwise: also china vases, or tubs painted in a fanciful manner.

These plants should be potted in rich earth and moderate sized pots, to be set on the bottom of the vase, tub, or cistern, and then covered with water, sufficient to allow the leaves to float freely on its surface, a small but daily supply of fresh water, and occasional clearing from slime or other dirt that happens to accumulate, is the only care they require, which trouble, they will amply repay by their beauty and fragrance.

Such comprehensive directions having been given already for the general management of the green-house, and they answering in every respect for this department, it is quite unnecessary to enter into a repetition of these particulars here, as they, combined with what I have here directed, will fully enable those

who may think this volume worthy their notice, to regulate, plant, and subsequently manage their conservatories, so as to have their plants in continual health and vigour.

APPENDIX.

HAVING in the foregoing Treatise made frequent mention of the different soils necessary to be used, or at least best suited, to the cultivation of tender Exotics, and more especially to their propagation; I mean here to give a concise view of their nature, and a few observations concerning where they are generally to be found, as well as the subsequent manner of preparing them for use.

Loam, peat, and sand, seem to be the three simples of nature, if I may so call them, most requisite for our purpose; to which, we occasionally add as mollifiers, vegetable mould, and well rotted dung; from the judicious mixture and preparation of which, composts may be made to suit plants introduced from any quarter of the globe: but for propagation, I always prefer them in their simple state, particularly Loam, and Sand, in either of which when properly handled, I find the cuttings of most known species to vegetate more freely, than in any other compost whatever.

My intention here is merely to describe those soils, so as they may be generally known, and well assorted; without entering into any detailed dissertation on their particular properties, or chymical analyzation, as to their connection with vegetables; and first of Loam, which is a loose friable kind of earth, the constituent particles of which crumble and separates easily in the hand; it is of various textures, the strongest approaching a clay, and so down in several shades, until the lightest becomes nearly similar to strong sandy peat. It is found of different colours, viz. black, yellow, red, &c. &c.; sometimes also, it partakes of a saponaceous quality, approaching to a marle; this when predominant is not recommendable for general use; yet there are some articles for which it may be used with considerable success.

Yellow or red seems to be the natural colour of maiden Loam, as either will change to black as they become more or less mixed with other extraneous substances, such as dung, &c. Therefore, to have it pure, which is very material, one should prefer either of these, if they can be conveniently procured. The places to look for this kind of earth, is generally in fields, that have not been broken for a long series of years; also sheep downs, or commons, most frequently running in dry banks perhaps through-

out the whole; its strata are of various thicknesses, sometimes being little more than that which forms the turf or upper sward, and at other times lying from one or two, to three or four feet under the surface. That is generally the best which is of a moderate depth, being more within the ameliorating powers of the sun and atmosphere; the other lying deeper, being known to abound with crude unqualified matter, very unfavourable to the growth of tender plants, unless exposed in the compost yard for a year or two to the weather, whereby, it will become fit for all strong growing woody kinds, or fruit trees in general.

Loam being found answerable to the purpose for which it is designed, it should be immediately carted home and heaped in a clean part of the compost yard for a few months; so that the turf, and fibres of the grass, may have sufficient time to decay, and the whole become more qualified for use through the action of the season: when it has lain thus for some time together, it will be found to be in a very good state for working.

This sort of soil is particularly adapted for striking cuttings in general, on account of its firm close texture, and the twofold quality of retaining moisture longer than either peat or sand, and at the same time, its own natural dissolubility, which admits the young fibres of

the cuttings to push through it freely, as soon as formed, to that which they more immediately like to grow and flourish in, a stratum of which is generally put in the bottom of the pot.

From its strength it seems more adapted to arborescent plants in general, which have powerful roots, that are seldom able to support themselves in lighter soils, more especially in dry seasons; while from its purity and sweetness, it may be said to give additional flavour to the most delicate fruits.

The word Peat, is generally understood to mean common bog earth; however, that which may literally be termed *bog*, is by no means proper for our purpose, on account of its wet coagulating nature, and tendency thereby to rot the roots of the plants; at least if peat is to be taken from these situations, the very surface only should be chosen, as that is found to contain a greater portion of the fine, drying, opening kind of sand, so necessary to this species of soil.

The places where I would recommend to look for the proper peat, are those dry heathy commons, where it seems to form a medium between bog earth and sand, it is not unfrequently found forming a mere skin, over a bed of pure sand, or gravel. The turf or sod, cut about four or six inches deep, is always the best for use, as it is in general the lightest, and

abounds withsand, as already mentioned, which is I think invariably found to be the finest near the surface in such cases. Spots where the wild heath grows luxuriantly should be diligently selected, as producing the best peat for general use; but when it is considered that of the plants mostly cultivated in this kind of soil, some grow in swamps near rivers, others in barren sandy wastes, and more in all their various intermediate stations, as mountains, low lands, &c. &c. especially heaths from the varied surface of Southern Africa; it will surely be obvious, that a supply of every variety of soil should be always at hand, and that the peat answering for one species, will not be so congenial to another brought from a very different situation and soil.

It should be cast into a heap in the compost yard for twelve or fourteen months before used, a practice to be observed with composts in general.

It is to be used only for such plants as are known to grow naturally in peat, or those which are known to thrive best in a very light sandy soil: also to be mixed occasionally with Loam, for such as delight in an intermediate compost.

Most plants grow remarkably free in peat during the summer season, if kept carefully watered, in particular those which come under the denomination of half herbaceous or biennial

like plants; yet, even these, are often liable to perish in winter, on account of the extreme lightness of the soil, and the cold necessarily produced by frequent watering.

Shrubby, hard wooded, and fine fibrous rooted plants in general, thrive very well in this and loam, mixed in about equal proportions; but I think it by no means suitable to fruits. It is seldom used by itself except for heaths, Botany Bay plants, and the general productions of Northern America, to all of which it seems particularly adapted.

Sand is rarely used simply, except for striking cuttings of the two first of the above mentioned plants; viz. heaths, and Botany Bays; for which it is peculiarly suitable; their fine hair like fibres not having strength to vegetate in stronger soils. An inch or two in depth of it on the surface is quite sufficient, as it is intended merely to strike the cutting in, the lower part of the pot being filled with peat, into which the young fibres will soon penetrate, and draw therefrom the principal part of their nourishment as from their parent soil: it should be kept moderately moist when used in this manner, otherwise, from its natural drying quality, it would soon parch up, and destroy whatever cuttings may have been put therein.

The soil of the interior parts of Southern Africa being for the greater part excessively

sandy, a considerable portion of it should be used in the composts intended for the productions of that country, both of woody, herbaceous, and bulbous species.

Pit sand should be invariably preferred for this purpose, it being of a more lively vegetating nature than river or sea sand, and if we may judge by colour, the whitest that can be procured; as I have always observed it to be the finest, and have from repeated trials proved that the finer the sand, the surer a good crop of cuttings.

It requires no kind of preparatory process, more than sifting, to divest it of those small pebbles, &c. which are universally found among it, and to be kept pure and unmixed with extraneous substances, until wanted for use.

By vegetable mould, at least the kind best suited to our purpose, is meant that which accumulates, or in a manner grows, if I may use the expression, in woods, particularly those of a long standing, by the annual fall of leaves, &c. and their consequent decay; the vicissitudes of a few revolving seasons reduce them to a perfect mould, which is afterwards known by the above appellation. It is of a very loose, light nature, and comparatively rich, but far behind that produced by the mixture of animal excrement. Yet it is doubtless of an amelior-

ating nature, and highly recommendable for such plants as delight in a moderate and well digested manure.

In its simple state it is hardly fit for any thing except annuals, as its extreme lightness, like the peat, renders it unable to support arborescent plants with any degree of credit: however, when mixed with loam, or any other soil of a more firm texture than itself, it is particularly useful for West India plants, geraniums, and annuals in general.

The best manner of procuring it is to have several large pits dug in the most convenient part of the woods, into which may be annually raked all the leaves in the vicinity, together with the general surface of the ground produced by them in preceding years, which will materially accelerate their decomposition; so that in a few months, they become a perfect mould, and fit for use.

Of animal manure, that procured from old hot-beds is, I think, most suitable for composts in this department. It likewise should not be used for plants until rotted to a perfect mould; to promote which, it should be well mixed with a small portion of loam in the compost yard, whereby they will become better incorporated, and more fit for use; it is necessary however, not to add too much loam to it in this process, as it is so much easier to add afterwards than

to take away, according as circumstances may require it.

This mixed with a proper quantity of loam, is in general the best compost for such plants as have soft fleshy roots, also for soft wooded, half shrubby, and herbaceous kinds of plants, annuals, biennials, &c. &c. but is never used simply by itself, and very rarely, if at all, mixed with peat or sand.

The very great variety in the nature of plants, taken *en masse*, renders it utterly impossible to specify within the limits of this work, the soil proper for each particular species; however, I think it may be advanced as a rule not subject to many objections, that the whole of each genus are generally fond of the same compost. I have drawn up the following Table of Genera, of which any of the species are known to require the aid of the green-house or stove; shewing that peculiar soil, most suitable to each particular genus; deduced from observations on the extensive collections I have had under my own particular care, combined with those which I have had an opportunity of making on others, as well in the vicinity of London, as around Dublin.

The necessity of this combination is evident from the difficulty of finding the whole of the genera here enumerated, in any single collection in the United Kingdom.

TABLE OF GENERA.

A

Abroma	Light Loam.*
Abrus	Light rich Loam.†
Achania, Achillea, Achras, Achyranthes, Acyrum	Light Loam.
Adansonia	Light rich Loam.
Adelia, Adenanthera	Light Loam.
Adiantum	Sandy Peat.
Adina	Light rich Loam.
Adonis, Ægiphylla, Æschynomene, Afzelia	Light Loam.
Agapanthus	Light rich Loam.
Agave	Id. mixed with old lime rubbish.

* Is composed of one half loam and the other half peat—well mixed.

† Is composed of one half loam and the other of vegetable mould—or where that is not to be had, of one-third loam, one-third peat, and one-third of well decomposed old hot-bed dung.

A.

Aitonia	Light rich Loam.
Albuca	
Aletris	
Aleurites	Light Loam.
Allamanda	
Allium	Light rich Loam.
Aloe	Id. mixed with old lime rubbish.
Alpinia	Light rich Loam.
Alstroemeria	
Amaranthus	
Amaryllis	
Amellus	
Amethystea	
Amomum	
Amyris	Light Loam.
Anabasis	
Anacardium	Light rich Loam.
Anagallis	
Anagyris	Light Loam.
Ancistrum	
Andersonia	Sandy Peat.
Andropogon	Light rich Loam.
Anigozanthus	Sandy Peat.*
Anneslea	Light rich Loam (immersed in water.)
Annona	Light Loam.
Anthemis	
Anthericum	Rich Sandy Loam.†

* The peat if not of a sandy nature may be made so by a small addition of common fine sand.

† Made by adding one-third dung to sandy loam.

A.

Antholyza	Sandy Peat.
Anthospermum, Anthyllis, Antidesma	Light Loam.
Antirhinum	Light rich Loam.
Aotus	Sandy Peat.
Aponogeton	Light rich Loam (immersed in water.)
Aquartia, Aquilicia	Light Loam.
Arachis	Light rich Loam.
Aralea, Arbutus, Arctotis, Ardisia, Arduina	Light Loam.
Areca	Strong rich Loam.*
Arenaria	Light Sandy Loam.
Arethusa	Rich Sandy Loam.
Arctocarpus	Light Loam.
Aristea	Sandy Peat.
Aristolochia, Aristotelia, Artemissia	Light Loam.
Arum, Asclepias	Light rich Loam.
Aspalathus	Light Loam.
Asparagus	Light rich Loam.

* Is readily procured by the addition of about one-third dung to a strong argillaceous loam.

A.

Asplenium	Sandy Peat.
Aster	Light Loam.
Astroloma	Sandy Peat.
Athanasia	Light Loam.
Atragene	Sandy Peat.
Atraphaxis, Atriplex, Aubletia, Averhoa	Light Loam.
Ayenia	Light Sandy rich Loam.
Azalea	Sandy Peat, rather dry: (it is so called from growing on the driest sides of hills.)

B.

Bacharis	Light Loam.
Bactris	Strong rich Loam.
Bambusa	Rich Light Loam.
Banksia	Sandy Peat.
Bareliera, Baringtonia	Light Loam.
Basella	Light rich Loam.
Baueria	Sandy Peat.
Bauhinia	Light Loam.
Besleria	Light rich Loam.
Bignonia	Very Light Loam.*
Billardiera	Sandy Peat.
Biscutella, Bixa	Light Loam.

* Formed by encreasing the quantity of peat to about two-thirds.

B.

Blakea	Sandy Peat
Blœria	
Blechnum	
Bocconia	Light rich Loam.
Boerhavia	Light Loam.
Bombax	Light Loam.
Bontia	
Buonapartia	Light rich Loam.*
Borassus	Strong rich Loam.
Borbonia	Light Loam.
Borronia	Sandy Peat.
Bosea	Light Loam.
Brachysema	Sandy Peat.
Bromelia	Light rich Loam.
Brossimum	Light Loam.
Brotera	
Browallia	Light rich Loam.
Brownea	Light Loam.
Brucea	
Brunichia	
Brunia	
Brunsfelsia	
Bryonia	
Bryophyllum	
Bubon	
Bubroma	
Bucknera	Light rich Loam.
Bucida	
Bumelia	Light Loam.
Bupthalmum	

* Quere, Agave filiformis?

B.

Bursera	Light Loam.
Butea	
Buxus	
Bystropogon	

C.

Cacalia	Light rich Loam and old lime rubbish.
Cactus	
Cadia	Light Loam.
Cæsalpinia	
Cæsulia	Light rich Loam.
Calceolaria	
Calea	
Calendula	Light Loam.
Calla	Light rich Loam.
Callicarpa	Light Loam.
Callicoma	Sandy Peat.
Callophyllum	Light Loam.
Camellia	
Cameraria	
Campanula	Light rich Loam.
Camphorosma	Light Loam.
Canarina	Light rich Loam.
Canella	
Canna	
Cantua	
Capparis	
Capraria	
Capsicum	
Cardiospermum	
Carduus	

C.

Carica	Light Loam.
Carissa, Carolinea	Light Loam.
Carthamus	Light rich Loam.
Caryophyllus	Light Loam.
Caryota	Strong rich Loam.
Cassia, Cassine	Light Loam.
Cassytha	Light rich Loam.
Cassuarina, Catesbæa	Sandy Peat.
Ceanothus, Cecropia, Cedreola, Celastrus	Light Loam.
Celosia, Celsia	Light rich Loam.
Celtis, Cenchrus, Centaurea, Cephaelis, Ceratonia	Light Loam.
Cerberea	Light rich Loam.
Ceropegia, Cestrum	Light Loam.
Chamærops	Strong rich Loam.
Cheiranthus, Chelone	Light rich Loam.
Chenolea, Chiococca	Light Loam.
Chironia	Light Sandy Loam.

C.

Chlamysporum	Sandy Peat.
Chloranthus	Light Loam.
Chlorophytum	
Chorizema	Sandy Peat.
Chrysanthemum	Light Loam.
Chrysobalanus	
Chrysocoma	
Chrysophyllum	
Cincona	
Cinneraria	Sandy Peat.
Cissampelos	Light Loam.
Cissus	
Cistus	
Citrus	Strong rich Loam.
Cleome	Light rich Loam.
Clematis	Light Sandy Loam.
Clerodendrum	
Clethra	Light Loam.
Cliffortia	
Clitoria	
Clusia	
Cluytia	
Cneorum	
Cobæa	
Coccoloba	
Cocos	Strong rich Loam.
Coccocypsilum	Light rich Loam.
Codarium	
Codon	Sandy Peat.
Coffea	Light rich Loam.
Coix	

C.

Colebrookia	Light rich Loam.
Columnea	
Colutea	Light Loam.
Comellina	Light rich Loam.
Commersonia	Light Loam.
Comocladia	
Conchium	Sandy Peat.
Convolvulus	Light rich Loam.
Conyza	Light Loam.
Copaifera	
Corchorus	
Cordia	
Coris	
Cornutia	
Coronilla	
Correa	Very Light Loam.
Corypha	Strong rich Loam.
Cosmea	Light rich Loam.
Costus	
Cotula	Light Loam.
Cotyledon	Light rich Loam and old lime rubbish.
Crambe	
Crassula	
Cratæva	Light rich Loam.
Crescentia	
Crinum	Light rich Sandy Loam.
Crossandra	Light Loam.
Crotolaria	
Croton	
Crucianella	
Cunonia	Sandy Peat.

C.

Cuphea	Light rich Loam.
Cupressus	Light Loam.
Curculigo	Light rich Loam.
Curcuma	
Curtisia	Light Loam.
Curtella	
Cussonia	
Cyanella	Sandy Peat.
Cycas	Strong rich Loam.
Cyclamen	Sandy Peat.
Cylista	Light Loam.
Cynanchum	
Cynosurus	
Cynometra	
Cyperus	
Cyphia	
Cyrilla	
Cyrtanthus	Rich Sandy Loam.
Cytissus	Light Loam.

D.

Dais	Light Loam.
Dahlia*	Strong rich Sandy Loam.

* All the varieties of Dahlia are now cultivated as hardy plants, or at least, like the marble of Peru, viz.—they are planted in May in beds or clumps where they flower very finely in the Autumn; the first frosts however generally destroy their beauty, and their roots being of a very soft fleshy nature, it is necessary to protect them during the winter, they are therefore taken up and kept in dry mould or sand, in the cellar or close warm shed, until the ensuing April or May.

D.

Damasonium	Light rich Loam.
Daphne	Light Loam.
Datura	Light rich Loam.
Daviesia	Sandy Peat.
Delima	Light Loam.
Dentella	Sandy Peat.
Dianella	
Dichondra	Light rich Loam.
Dicksonia	Sandy Peat.
Didelta	Light Loam.
Digitalis	
Dilatris	
Dillenia	
Dillwynia	Sandy Peat.
Dimocarpus	Light Loam.
Dionæa	Very light peat and set in a pan of water.
Dioscorea	Light Loam
Diosma	Light Sandy Loam.
Diospyrus	Light Loam.
Disandra	
Dodonea	
Dolichos	Light rich Loam.
Dombeya	Light Loam.
Dorstenia	Light rich Loam.
Doryanthus	Peat and little Loam.
Dracæna	
Dracocephalum	Light rich Loam.
Dracontium	
Drimea	Light rich Sandy Loam.
Dryandra	Sandy Peat.

D.

Duranta	Light Loam.
Duroia	

E.

Ebenus	Light Loam.
Echites	Light rich Loam.
Echium	Light Sandy Loam.
Eclipta	Light rich Loam.
Ehrharta	Light Loam.
Ehretia	
Ekebergia	
Elæis	Strong rich Loam.
Elæocarpus	Light Loam.
Elæodendrum	
Elegia	
Elate	Strong rich Loam.
Elephantopus	Light Loam.
Embothryum	Sandy Peat.
Embryopteris	Light Loam.
Empetrum	Sandy Peat.
Empleurum	
Enselia	Light Loam.
Epacris	Sandy Peat.
Epidendrum	Light rich Loam.
Eranthemum	
Erica	Sandy Peat.
Erigeron	Light Loam.
Eriocephalus	
Eriospermum	Light Sandy Loam.
Erithalis	Light Loam.
Eryngium	Light rich Loam.

E.

Erythrina	Light rich Loam
Ethulea	
Eucalyptus	Light Loam.
Euchilus	Sandy Peat.
Euclea	Light Loam.
Eucomis	Rich Sandy Loam.
Eugenia	Light Loam.
Euosma	Sandy Peat.
Euphorbia	Light rich Loam.
Eustrephus	Sandy Peat.
Exacum	

F.

Fabricia	Light Loam.
Fagara	
Fagonia	
Falkia	
Ferraria	Sandy Peat.
Ficus	Light rich Loam.
Flagellaria	
Flacourtia	Light Loam.
Forsythia	
Franseria	Light rich Loam.
Fuchia	

G.

Gaertnera	Light Loam.
Galax	Sandy Peat.
Galaxia	
Galega	Light Loam.
Galenia	
Garcinia	

G.

Gardenia	Light Loam.
Gaura	
Genista	
Geofroya	
Geranium	Light rich Loam.
Gesneria	Light Loam.
Gethyllis	Light rich Sandy Loam.
Gladiolus	Sandy Peat.
Globularia	Light Loam.
Gloriosa	Light Sandy Loam.
Gloxinia	Light rich Sandy Loam.
Glycine	Sandy Peat.
Gnaphalium	
Gnidia	Light Sandy Peat.
Gomphalobium	Sandy Peat.
Gomphia	Light Loam.
Gomphrena	Light rich Loam.
Goodenia	Sandy Peat.
Goodia	
Gordonia	Light Loam.
Gorteria	
Gossypium	
Gouania	
Grevillea	Sandy Peat.
Grewia	Light Loam.
Grislea	
Gronovia	Light rich Loam.
Guiacum	Light Loam.
Guetarda	
Guilandina	
Gunnera	
Gustavia	

H.

Hæmanthus	Rich Sandy Loam.
Hæmatoxylum	Light Loam.
Hakea	Sandy Peat.
Halleria	Light Loam.
Halloragis	
Hamellia	
Hebenstreitia	Light rich Loam.
Hedychium	
Hedysarum	Light Loam.
Helenium	
Heliconia	Light rich Loam.
Helicteres	Light Loam.
Heliophylla	
Heliotropium	Light rich Loam.
Hellenia	
Hemerocallis	
Hemimeris	
Heritiera	Light Loam.
Hermannia	
Hernandia	
Hibbertia	
Hibiscus	
Hillia	Light rich Loam.
Hirtella	
Hippia	
Hippocrepis	
Hippomane	
Hiraea	
Hoffmansæggia	
Homalium	
Hookera	

H.

Hopea	Sandy Peat.
Houstonia	Light rich Loam.
Hoya	
Hura	Light Loam.
Hydrangea	Light rich Loam.
Hydrocotyle	
Hymenea	Light Loam.
Hyocyamus	
Hyoseris	
Hyperanthera	
Hypericum	
Hypoxis	Sandy Peat.
Hyptis	Light Loam.

J.

Jacksonia	Sandy Peat.
Jacquinia	Light Loam.
Jambolifera	
Jasminum	Light rich Loam.
Jatropha	
Iberis	
Ilex	Light Loam.
Illicebrum	
Illicium	Sandy Peat.
Impatiens	Light rich Loam.
Indigofera	Light Loam.
Inocarpus	
Inula	
Jonesia	
Ipomœa	Light rich Loam.
Iris	Sandy Peat.
Jussieua	Light rich Loam.

I.

Justicia	Light rich Loam.
Ixia	Sandy Peat.
Ixora	Light Loam

K.

Kœmpferia	Light rich Loam.
Kiggelaria	Light Loam.
Kirganella	
Klenia	
Knowltonia	
Kyllingia	

L.

Lachenalia	Sandy Peat and Loam.
Lachnœa	Light Sandy Loam.
Lagerstrœmia	Light Loam.
Lagunea	Light Loam.
Lambertia	Sandy Peat.
Lamarkia	
Lantana	Light rich Loam.
Lasiopetalum	Sandy Peat.
Laurus	Light Loam.
Lavandula	Light rich Loam.
Lavatera	Light Loam.
Lawsonia	
Lebeckia	
Leea	Light rich Loam.
Lepidium	Light Loam.
Leptospermum	
Leysera	
Liatris	
Lidbekia	

L.

Limeum	Light Loam.
Limodorum	Light rich Loam.
Limonia	Strong rich Loam.
Linum	Light sandy Loam.
Liparia	
Lobelia	Light Loam.
Lodigesia	
Lomandra	Sandy Peat.
Lopezia	Light rich Loam.
Lotus	
Lychnis	
Lycium	Light Loam.
Lythrum	

M.

Macrocnemum	Light Loam.
Magnolia	
Mahernia	
Malachra	
Malphigia	
Malva	
Mammea	Light rich Loam.
Mangifera	
Manettia	
Mantisia	
Manulea	
Maranta	
Marcgravia	
Marica	Sandy Peat.
Marrubium	Light rich Loam.
Martynia	
Massonia	Sandy Peat.

M

Maurandia	Light rich Loam
Medeola	
Medicago	Light Loam.
Melaleuca	Sandy Peat and Loam.
Melanthium	Sandy Peat.
Melastoma	
Melia	Light Loam.
Melianthus	Strong rich Loam.
Melicocca	Light Loam.
Melissa	
Melochia	Light rich Loam.
Melodinus	Light Loam.
Menyanthes	Light rich Loam immersed in water.
Mespilus	Light Loam.
Messembryanthemum	Light rich Loam and old lime rubbish.
Metrosideros	Sandy Peat and Loam.
Michauxia	Light rich Loam.
Millingtonia	Light Loam.
Mimosa	
Mimulus	
Mimusops	
Mirabilis	Light rich Loam.
Mirbella	Sandy Peat.
Monetia	Light Loam.
Monsonia	Light rich Loam.
Montinia	
Morea	Sandy Peat.
Morinda	Light rich Loam.
Morus	Light Loam.

M.

Mullera	Light Loam.
Muraya	
Musa	Light rich Loam.
Mussænda	Light Loam.
Myginda	
Myrica	
Myrsine	
Myrtus	Light rich Loam.

N.

Nandina	Light Loam.
Nauclea	
Nelumbium	Light rich Loam immersed in water.
Neottia	Light Sandy rich Loam.
Nepeta	Light Loam.
Nepenthes	
Nerium	
Nicotiana	Light rich Loam.
Notelæa	Sandy Peat.
Nyctanthes	Light Loam.
Nymphœa	Light rich Loam immersed in water.

O.

Ochroma	Light rich Loam.
Ochna	Light Loam.
Ocymum	
Oedera	
Oenothera	Light rich Loam.
Oldenlandia	
Olea	

O.

Olyra	Light rich Loam.
Omphalea	
Ononis	Light Loam.
Opercularia	
Ophioxylum	Light rich Loam.
Orchis	Light Sandy Loam.
Origanum	Light rich Loam.
Ornithogalum	Light rich Sandy Loam.
Ornithrope	Light Loam.
Oryza	Light rich Loam.
Osmites	Light Loam.
Osteospermum	
Osyris	
Othona	
Oxalis	Sandy Peat.
Oxybaphus	Light rich Loam
Oxylobium	Sandy Peat.

P.

Palavia	Light Loam.
Panax	
Pancratium	Light rich Sandy Loam.
Pandanus	Light rich Loam.
Panicum	
Parietaria	Light Loam.
Parkinsonia	
Paspalum	Light rich Loam.
Passerina	Light Sandy Loam.
Passiflora	Light rich Loam.
Pattersonia	Sandy Peat.
Paulinia	Light Loam.

C.

Pavetta	Light Loam.
Pavonia	
Pedalium	
Pelargonium	Light rich Loam.
Peliosanthes	
Pennæa	Light Sandy Peat.
Pentapetes	Light Loam.
Pergularia	
Periploca	
Perotis	Light rich Loam.
Persoonia	Sandy Peat.
Petiveria	Light Loam.
Petræa	
Pharnaceum	
Phaseolus	Light rich Loam.
Philydrum	Id. immersed in water.
Phlomis	Light rich Loam.
Phœnix	Strong rich Loam.
Phormium	Light Loam.
Phylica	
Phyllanthus	
Phyllis	
Phytolacca	Light rich Loam.
Pimelia	Sandy Peat
Pinus	Light Loam.
Piper	Light rich Loam.
Piqueria	
Piscidia	Light Loam
Pisonia	
Pistacia	
Pitcairnia	Light rich Loam.

P.

Pittosporum	Very light Loam.
Planera	Light Loam.
Plantago	
Platylobium	Sandy Peat.
Plectranthus	Light Loam.
Plinia	Sandy Peat.
Plumbago	Light Loam.
Plumeria	Light rich Loam.
Podalyria	Light Loam.
Podolobium	Sandy Peat.
Pogonia	
Poinciana	Light rich Loam.
Pollichia	Light Loam.
Polyanthes	Light rich Loam.
Polygala	Sandy Peat.
Polygonum	Light Loam.
Polypodium	Sandy Peat.
Pomaderris	
Portlandia	
Portulaca	Light rich Loam.
Portulacaria	
Poterium	Light Loam.
Pothos	Light rich Loam.
Prasium	
Prenanthes	
Primula	
Prinos	Light Loam.
Prostranthera	Sandy Peat.
Protea	Sandy light Loam.
Psiadia	Light Loam.
Psidium	

P.

Psoralea	Light Loam.
Psycothria	
Pteris	Sandy Peat.
Pterocarpus	Light Loam.
Pteronia	
Pterospermum	
Punica	Light rich Loam.
Pultneya	Sandy Peat.
Pyrethrum	Light Loam.
Pyrus	Light rich Loam.

Q.

Quassia	Light Loam.

R.

Rafnia	Light sandy Loam.
Ragania	Light rich Loam.
Randia	Light Loam.
Raphis	Strong rich Loam.
Rauwolfia	Light Loam.
Relhania	
Renealmia	Light rich Loam.
Restio	Light Loam.
Rhamnus	
Rhus	
Richardia	
Ricinus	Light rich Loam.
Rivinia	Light Loam.
Roella	Sandy Peat.
Rondeletia	Light Loam.
Rosa	Light rich Loam.

R.

Royena	Light Loam.
Roxburghia	
Rubia	
Ruellia	Light rich Loam.
Ruizia	Light Loam.
Rumex	
Ruscus	
Ruta	

S.

Sacharum	Light rich Loam.
Sagittaria	Id. immersed in water.
Salicornia	Light rich Loam.
Salsola	
Salvia	
Samara	Light Loam.
Samyda	
Sanseviera	Light rich Loam.
Santalum	Light Loam.
Santolina	
Sapindus	
Saponaria	
Sarracenia	Light Peat set in a pan of water.
Satureja	Light Loam.
Satyrium	Light sandy Loam.
Scabiosa	Light Loam.
Scalia	
Scævola	Sandy Peat.
Schinus	Light Loam.
Schisandra	
Schotia	

S.

Scilla	Light rich sandy Loam.
Scoparia, Scrophularia	Light Loam.
Sedum	Light rich Loam mixed with lime rubbish.
Securidaca, Selago	Light Loam.
Sempervivum, Senecio	Light rich Loam.
Septas	Light sandy Loam.
Seriphium, Serissa	Light Loam.
Sesuvium	Light rich Loam.
Sida, Sideritis, Sideroxylum	Light Loam.
Silene	Light rich Loam.
Siphonanthus, Sisymbrium	Light Loam.
Sisyrinchium	Sandy Peat.
Sloanea	Light Loam.
Smithia	Light rich Loam.
Solandra, Solanum	Light Loam.
Sonchus	Light rich Loam.
Sophora	Light Loam.
Sowerbia	Sandy Peat.
Sparmannia, Spartium, Spathelia, Spermacoce	Light Loam.

S.

Sphærolobium	Sandy Peat.
Spielmannia, Spilanthus	Light rich Loam.
Spondias	Light Loam.
Sprengalea	Sandy Peat.
Staavia	Light sandy Loam.
Stachys, Sthelina	Light rich Loam.
Stapelia	Id. mixed with lime rubbish.
Statice, Sterculia, Stilago, Stæbe	Light Loam.
Stratiotes, Strelitzia, Strumaria	Rich light Loam.
Struthiola	Light sandy Loam.
Strychnos	Light Loam.
Stylidium, Styphelia, Swainsonia	Sandy Peat.
Swietenia	Light Loam.

T.

Tabernœmontana	Light Loam.
Tagetes, Tamarindus	Light rich Loam.
Tamus, Tanacetum, Tarchonanthus, Taxus	Light Loam.

T.

Tectona	Light Loam.
Terminalia	
Tetragonia	
Tetratheca	
Teucrium	
Thalia	Light rich Loam immersed in water.
Thea	Light Loam.
Theobroma	
Thrinax	Strong rich Loam.
Thuja	Light Loam.
Thunbergia	
Thymus	
Thymbra	
Tillandsia	Light rich Loam.
Tinus	Light Loam.
Tournefortia	
Toxicodendron	
Tradescantia	
Trewia	
Trianthema	Light rich Loam.
Trichilea	
Trichomanes	Sandy Peat.
Triglochin	Light rich Loam.
Tripsacum	
Triumfetta	
Tropœolum	
Tulbagia	Rich sandy Loam.
Tulipa	
Turnera	Light Loam.

U.

Ulex	Light Loam.
Urena	
Urtica	
Uvaria	

V.

Vaccinium	Peat.
Veltheima	Rich sandy Loam.
Varronia	Light Loam.
Verbena	Light rich Loam.
Verbecina	
Verea	
Viburnum	Light Loam.
Viminaria	Sandy Peat.
Vinca	Light rich Loam.
Viola	
Vitex	Light Loam.
Vitis	Light rich Loam.
Volkameria	Light Loam.

W.

Wachendorfia	Sandy Peat.
Waltheria	Light Loam.
Westringia	
Witheringia	
Willdenowia	
Wittsenia	Sandy Peat.
Woodfordia	Light Loam.
Wurmbea	Sandy Peat.

X.

Xanthium	Light Loam.
Xeranthemum	Sandy Peat.
Ximenia	Light Loam.
Xiphidium	Light Loam.
Xylomelum	Sandy Peat.
Xylophylla	Sandy Peat.
Xylopia	Light Loam.
Xyris	Sandy Peat.

Y.

Yucca	Light rich Loam.

Z.

Zamia	Strong rich Loam.
Zanthorhæa	Sandy Peat.
Zieria	Sandy Peat.
Zygophyllum	Light rich Loam.
Zyziphus	Sandy Peat.

A CALENDAR,

In which the Plants treated of in the foregoing work, are conveniently arranged according to their time of flowering, by which purchasers are enabled to select such as they may want for any particular season.

☞ I have this moment received from a Lady, a suggestion, that I should specify where the different soils spoken of should be looked for: I can only say, that cultivated situations should never be resorted to:—the *Wilds of Nature* furnish in general very beautiful plants, and we should always resort if possible to them, for their food.

A CALENDAR, &c.

JANUARY, FEBRUARY AND MARCH.

ATROPA frutescens	G	♄	
Banksia paludosa	G	♄	
Cassuarina stricta	G	♄	
Cephaelis peduncularis	S	♄	
Clematis calycina	G	♄	
Daphne odora	G	♄	
Erica acuta	G	♄	
—— acutangula	G	♄	
—— concava	G	♄	
—— cymosa	G	♄	
—— fimbriata	G	♄	
—— finitima	G	♄	
—— hirta	G	♄	
—— horizontalis	G	♄	
—— mutabilis	G	♄	
—— nivea	G	♄	
—— phylicoides	G	♄	
—— picta	S	♄	
—— pilosa	G	♄	
—— puerilis	G	♄	
—— ruffa	G	♄	
Hypericum creticum	G	♄	
Malphigia glabra	S	♄	
Oxalis elongata	G	♃	
—— hirta	G	♄	
—— purpurea	G	♃	
—— rubescens	G	♃	
—— secunda	G	♃	
—— tenuifolia	G	♃	
—— versicolor	G	♃	
Phylica ericoides	G	♄	
——— erubescens	G	♄	
†Pogonia glabra	G	♄	
*Protea acuifolia	G	♄	
——— cynaroides	G	♄	
——— glaucophylla	G	♄	
——— longifolia	G	♄	
——— mellifera	G	♄	
Salvia dentata	G	♄	
Veltheimia viridifolia	G	♃	
——— glauca	G	♃	
——— media	G	♃	
——— pumila	G	♃	
†*Myoporum*.			

FEBRUARY, MARCH AND APRIL.

Aletris capensis	G	♃	
——fragrans	G	♄	
Arum crinitum	G	♄	
Atropa frutescens	G	♄	
Bocconia frutescens	S	♄	
Borronia pinnata	G	♄	
Calla æthiopica	G	♃	
‡Camellia japonica	G	♄	
——— double blush	G	♄	
——— double red	G	♄	
——— double white	G	♄	
——— double striped	G	♄	
Canarina campanula	G	♃	
Ceanothus africanus	G	♄	
Coronilla valentina	G	♄	
——— glauca	G	♄	
Cyperus alternifolius	S	♃	
——— papyrus	G	♃	
Diosma rubra	G	♄	
Erica cerinthiflora	G	♄	
—— elegans	G	♄	
—— erecta	G	♄	
—— fascicularis	G	♄	
—— imbricata	G	♄	
—— incarnata lutea	G	♄	
—— leucanthera	G	♄	
—— nitidula	G	♄	
—— pallens	G	♄	
—— proboscidea	G	♄	
—— scabriuscula	G	♄	
—— setacea	G	♄	
—— versicolor	G	♄	
—— villosa	S	♄	
Euphorbia canariensis	S	♄	
——— punicea	S	♄	
Eugenia uniflora	S	♄	
——— fragrans	S	♄	
Justicia formosa	S	♄	

* Most of the Protea flowers have a honey-like fragrance as well as Mellifera, but it may not be known to many, that the unripe receptacle (of all) when cut at its base, emit a perfume similar to a fresh cut pine, but not quite so strong.

‡ Since this list was drawn out, I have seen some very fine flowers of other rare sorts, viz. Warrata or Anemone flowered, Myrtifolia, Pompone, Pæoniflora, &c. &c. all of which flower about the time here specified.

Lachenalia contaminata . G ♃
——— fragrans . G ♃
——— pallida . G ♃
——— purpureo cærulea G ♃
——— quadricolor . G ♃
——— rosea . G ♃
Massonia angustifolia . G ♃
——— scabra . G ♃
*Olea apetala . G ♄
Orontium japonicum . G ♃
Oxalis acinina . G ♃
——— macrostylus . G ♃
——— multiflora . G ♃
——— reclinata . G ♃
——— repens . G ♃
——— reptatrix . G ♃

* *Noteleæa longifolia.*

Oxalis rosacea . G ♃
——— tenella . G ♃
Pelargonium quinatum . G ♄
Phylica pubescens . G ♄
Pittosporum ferrugineum G ♄
Plinia pedunculata . S ♄
Polygala spinosa . G ♄
Poterium caudatum . G ♄
Renealmia nutans S ♃
Rhamnus crenulatus . G ♄
Sempervivum arboreum . G ♄
Solandra grandiflora . S ♄
Solanum vespertilio G ♄
Spartium cytissoides . G ♄
Wachendorfia graminea . G ♃
——— paniculata . G ♃

MARCH, APRIL, AND MAY.

Adonis rigida . G ♃
——— vesicatoria . G ♃
Amaryllis crispa . G ♃
——— undulata . G ♃
Anthericum canaliculatum . G ♃
——— florabundum . G ♃
——— pugioniforme . G ♃
Aristotelia maqui . G ♄
Atragene capensis . G ♄
Bromelia ananas . S ♄
——— humilis . S ♄
——— lingulata . S ♄
——— pinguin . S ♄
Brucea ferruginea . S ♄
Cactus flagelliformis . S ♄
Clematis capensis . G ♄
Clerodendron tomentosum . G ♄
Cordia monoica . G ♄
Cheiranthus mutabilis . G ♄
Cineraria aurita . G ♃
———hybrida . G ♃
Cliffortia trifoliata . G ♄
Cluytia pulchella . G ♄
Crassula odoratissima . G ♄
Cupressus juniperoides . G ♄
Cytissus proliferus . G ♄
——— tener G ♄
——— canariensis . G ♄
Daviesia acicularis . G ♄
——— salsifolia . G ♄
——— ulicina . G ♄
——— [illegible]nata . G ♄
Diosma linearis . G ♄

Dracæna ferrea . S ♄
——— marginata . S ♄
Dryandra tenuifolia G ♄
Erica actea . G ♄
—— arborea ramosa . G ♄
——— squarrosa . G ♄
——— triflora . G ♄
—— aristata . G ♄
—— Banksii . G ♄
——— purpurea . G ♄
—— bicolor . G ♄
—— Blandfordii . G ♄
—— clavata . G ♄
—— concolor . G ♄
—— costata . G ♄
—— cupressina . G ♄
—— discolor . G ♄
—— divaricata . G ♄
—— echüflora . G ♄
—— erubescens . G ♄
—— flammea . G ♄
—— flexuosa . G ♄
—— hallicaccaba . G ♄
—— imbecilla . G ♄
—— incurvata . G ♄
—— lanata . G ♄
—— lævis . G ♄
—— lateralis . G ♄
—— longiflora . G ♄
—— mediterranea . G ♄
—— obbata . G ♄
—— oppositifolia . G ♄
—— patens . G ♄

Erica persoluta alba . G ♄
——— conferta . G ♄
——— rubra . G ♄
—— petiolata . G ♄
—— Petiverii . G ♄
——— coccinea . G ♄
—— physodes . G ♄
—— pinastria . G ♄
—— pinifolia . G ♄
—— Plukenetii alba . G ♄
——— rubra . G ♄
—— pura . G ♄
—— quadrata . G ♄
—— spuria . G ♄
—— strigosa . G ♄
—— viscaria major . G ♄
——— minor . G ♄
—— Walkerii alba . G ♄
——— rubra . G ♄
—— simpliciflora . G ♄
Eucomis bifolia . G ♃
——— regia . G ♃
——— undulata . G ♃
Ferraria undulata . G ♃
Ficus bengalensis . S ♄
Gladiolus præcox . G ♃
*Glycine bimaculata . G ♄
——— coccinea . G ♄
——— comptoniana G ♄
——— rubicunda . G ♄
——— villosa
Gnaphalium odoratissimum G ♄
——— piluliferum . G ♄
Hermannia alnifolia . G ♄
——— althæifolia . G ♄
Hypoxis ovata . G ♃
Iris crispa . G ♃
Ixia aristata . G ♃
—— bicolor . G ♃
—— bulbifera . G ♃
—— capitata . G ♃
—— columnaris . G ♃
—— crateroides . G ♃
—— excisa . G ♃
—— falcata . G ♃
—— flexuosa . G ♃
—— grandiflora . G ♃
—— marginata . G ♃
—— patens . G ♃
—— retusa . G ♃
—— scillaris . G ♃
—— squalida . G ♃

*Kennedea.

Ixia tricolor . G ♃
Kæmpferia angustifolia S ♃
——— latifolia . S ♃
——— rotunda . S ♃
Lachenalia angustifolia G ♃
——— orchioides G ♃
——— patens . G ♃
——— pendula . G ♃
——— pustulata G ♃
——— tricolor . G ♃
——— flava . G ♃
——— glaucina . G ♃
——— lanceolata . G ♃
——— lucida . G ♃
——— lutea . G ♃
——— patula . G ♃
——— rubida . G ♃
——— reflexa . G ♃
——— sessiliflora G ♃
——— unicolor . G ♃
——— unifolia . G ♃
——— violacea . G ♃
Lasiopetalum coccineum G ♄
——— hirsutum G ♄
——— marginatum G ♄
——— quercifolium G ♄
Lebeckia cytissoides G ♄
Limodorum Tankervilii S ♃
Magnolia fuscata . G ♄
——— tomentosa G ♄
——— Conspicua . G ♄
Massonia latifolia . G ♃
Messembry- ⎫ corniculatum G ♄
anthemum ⎭ diversifolium G ♄
†Mimosa ampullascopia G ♄
——— decipiens . G ♄
——— dolabriformis . G ♄
——— elegans . G ♄
——— glabra . G ♄
——— hispida . G ♄
——— latifolia . G ♄
——— linearis . G ♄
——— longifolia . G ♄
——— microphylla . G ♄
——— myrtifolia . G ♄
——— pterifolia . G ♄
——— pubescens . G ♄
——— rutifolia . G ♄
——— scolopendra . G ♄
——— spinosa . G ♄
——— stricta . G ♄
——— suaveolens . G ♄

†*Acacia.*

Mimosa verticillata	G	♄
Monsonia lobata	G	♃
——— speciosa	G	♃
Myrsine africana	G	♄
Ornithogalum arabicum	G	♃
——— aureum	G	♃
——— caudatum	G	♃
Othonna abrotanifolia	G	♄
Oxalis caprina	G	♄
——— cernua	G	♃
——— dentata	G	♃
——— flabelliifolia	G	♃
——— flava	G	♃
——— lanata	G	♃
Parietaria arborea	G	♄
Phylica callosa	G	♄
Phylica horizontalis	G	♄
——— lanceotata	G	♄
——— plumosa	G	♄
Pisonia aculeata	G	♄
——— inermis	S	♄
——— latifolia	S	♄
Pistacia lentiscus	G	♄
Protea acuminata	G	♄
——— cordata	G	♄
Sempervivum glandulosum	G	♄
Stapelia incarnata	S	♄
Teucrium abutiloides	G	♄
Thea bohea	G	♄
Uvaria odorata	S	♄
Xeranthemum fasciculatum	G	♄
——— truncatum	G	♄

APRIL, MAY, AND JUNE.

Albuca altissima	G	♃
——— coarctata	G	♃
——— fastigiata	G	♃
——— major	G	♃
——— minor	G	♃
——— parviflora	G	♃
——— viscosa	G	♃
Allium triquetrum	G	♃
Amaryllis falcata	G	♃
——— reticulata	G	♃
——— vittata	G	♃
Anagyris fœtida	G	♄
Anthemis odorata	G	♄
Antholyza æthiopica	G	♃
——— cunonia	G	♃
——— plicata	G	♃
——— ringens	G	♃
——— tubulosa	G	♃
Anthyllis barba jovis	G	♄
——— cytissoides	G	♄
——— erinacea	G	♄
——— Hermanniæ	G	♄
——— spinosa	G	♄
Aotus villosus	G	♄
—— coccineus	G	♄
Arctotis glutinosa	G	♄
Aspalathus araneosa	G	♄
——— carnosa	G	♄
——— crassifolia	G	♄
——— ciliaris	G	♄
——— globosa	G	♄
Aster capensis	G	♄
—— dentatus	G	♄
—— fruticosus	G	♄
Aster reflexus	G	♄
Brachysema latifolia	G	♄
Capraria lucida	G	♂
——— undulata	G	♄
Ceanothus laniger	G	♄
——— nitidus	G	♄
——— globulosus	G	♄
Cistus vaginatus	G	♄
Commersonia dassyphylla	G	♄
Coccocypsilum repens	S	♃
Correa alba	G	♄
Crassula cordata	G	♄
——— marginata	G	♄
——— obliqua	G	♄
Dilatris corymbosa	S	♃
——— viscosa	S	♃
Diosma ericoides	G	♄
——— hirsuta	G	♄
——— imbricata	G	♄
——— oppositifolia	G	♄
——— pubescens	G	♄
Echium candicans	G	♄
——— ferocissimum	G	♄
——— fruticosum	G	♄
——— grandiflorum	G	♄
——— strictum	G	♄
*Embothryum speciosissimum	G	♄
†——— silauifolium	G	♄
Empetrum album	G	♄
Epacris attenuata	G	♄
——— var. alba	G	♄
——— diosmifolia	G	♄

Telopia speciossisima.

†*Lomatia Silauifolia.*

Epacris grandiflora . G ♄
——— juniperina . G ♄
——— obtusifolia . G ♄
——— pulchella . G ♄
——— var. minor G ♄
——— pungens . G ♄
——— rigida . G ♄
——— rosea . G ♄
Erica acutangula . G ♄
—— albens . G ♄
—— albiflora
—— arctata
—— australis
—— baccans
—— barbata
—— blanda
—— campestris
—— canescens
—— cordata
—— coronata
—— Coventryana
—— denticulata
—— elongata
—— empetrifolia
—— ferruginea
—— finitima
—— foliosa
—— hybrida
—— incana
—— Lawsonia
—— Linnæa
—— Lachnea } G ♄
—— melastoma
—— mellifera
—— molissima
—— mutabilis
—— nigrita
—— obtusata
—— phylicoides
—— primuloides
—— procera
—— purpurea
—— quadriflora
—— racemifera
—— racemosa
—— sambuciflora
—— scoparia
—— sexfaria
—— tenuiflora
—— triceps
—— trivialis
—— tubiflora

Eucomis nana . G ♃
Euosma albiflora . G ♄
Euphorbia mellifera . G ♄
Fabricia lævigata . G ♄
——— myrtifolia . G ♄
Gardenia radicans . G ♄
Genista linifolia . G ♄
Gladiolus cardinalis . G ♃
——— bicolor . G ♃
——— cuspidatus G ♃
——— hirsutus . G ♃
——— Milleri . G ♃
——— pulchellus G ♃
——— ringens . G ♃
——— roseus . G ♃
——— superbus . G ♃
——— tristis . G ♃
——— Watsonius G ♃
Goodia lotifolia . G ♄
——— pubescens . G ♄
*Gorteria rigens . G ♃
——— pavonia . G ♃
Heliconia Bihai . S ♃
——— psittacorum S ♃
Hermannia candicans G ♄
——— hyssopifolia G ♄
Illicium floridanum . G ♄
Indigofera amæna . G ♄
——— australis . G ♄
——— denudata . G ♄
——— psoraloides G ♄
Iris viscaria . G ♃
—— bituminosa . G ♃
Ixia cinnamomea . G ♃
—— columellaris . G ♃
—— corymbosa . G ♃
—— crocata . G ♃
—— curta . G ♃
—— deusta . G ♃
—— erecta . G ♃
—— gigantea . G ♃
—— hybrida . G ♃
—— humilis . G ♃
—— longiflora . G ♃
—— maculata . G ♃
—— monadelpha . G ♃
—— propinqua . G ♃
—— punctata . G ♃
—— reflexa . G ♃
—— rosea . . G ♃
—— rubro-cyanea . G ♃

*Gazania.

Ixia secunda . G ♃
—— villosa . . G ♃
Justicia coccinea - S ♄
Laurus borbonia . G ♄
Magnolia annonifolia G ♄
———— pumila . G ♄
Menyanthes ovata . G ♃
Myginda latifolia . S ♄
Myrcine retusa . G ♄
Neottia acaulis . . S ♃
——— elata . S ♃
——— glandulosa . S ♃
——— minor . S ♃
——— orchioides . S ♃
Oedera polifera . G ♄
——— trinervia . G ♂
Othonna arborescens . G ♄
———— amplexicalis G ♄
———— cheirifolia G ♄
———— crassifolia . G ♄
———— denticulata - G ♄
———— pectinata - G ♄
———— pinnata - G ♃
———— tuberosa . G ♃
Oxalis incarnata . G ♃
Oxylobium arborescens G ♄
———— cordifolium G ♄
———— ellipticum - G ♄
Passiflora alata . S ♄
———— lutea . S ♄
———— punctata . S ♄
———— rubra . S ♄
Pelargonium acerifolium G ♄
———— cordatum G ♄
———— pinnatum G ♃
———— punctatum G ♃
———— roseum G ♃
Peliosanthes Teta . . S ♃
Peliosanthes humilis S ♃
Phylica pinifolia . . G ♄
——— villosa . . G ♄
Phytolacca decandra S ♄
Polygala micrantha G ♄
———— mixta . G ♄
———— stipulacea G ♄
Polypodium aureum S ♃
———— trifoliatum S ♃
Pothos cordata . S ♃
——— lanceolata . S ♃
Protea conifera . G ♄
——— levisanus . G ♄
——— saligna . G ♄
——— sericea . G ♄
——— strobilina . G ♄
Psycothria herbacea S ♃
Pultenæa villosa . G ♄
Royena lucida . . G ♄
Ruta pinnata . G ♄
Salvia africana . G ♄
——— chamædrifolia G ♄
——— hirsuta . G ♂
——— interrupta . G ♄
——— violacea . G ♄
Satyrium elatum . S ♃
Scalia jaceoides . G ♃
Scilla maritima . G ♄
Sideritis candicans . G ♄
Sonchus fruticosus . G ♄
Sparmannia africana G ♄
Sprengelea incarnata G ♄
Wachendorfia hirsuta G ♃
———— brevifolia G ♃
———— thyrsiflora G ♃
Xeranthemum fulgidum G ♃
Xanthorrhea hastil . G ♃
———— minor . G ♃

MAY, JUNE, AND JULY.

Agave americana . G ♄
——— fœtida . G ♄
——— tuberosa . G ♄
——— vivipara . G ♄
Aletris fragrans
Aloe albispina
—— angustifolia
—— arachnoides } S ♄
—— arborescens
—— attenuata
—— barbadensis
—— brevifolia
—— carinata
—— crassifolia
—— cymbiformis
—— depressa
—— expansa } S ♄
—— ferox
—— glauca
—— humilis
—— imbricata
—— lineata

Aloe lineata
—— lingua
—— Margaritifera
—— microphylla
—— mirabilis
—— mitriformis
—— nigra
—— obliqua
—— obscura
—— plicatilis
—— prolifera
—— pulchra S ♄
—— pumila
—— purpurascens
—— retusa
—— saponaria
—— serulata
—— spiralis
—— suberecta
—— succotrina
—— tortuosa
—— variegata
—— verrucosa
—— viscosa
Amaryllis equestris S ♃
———— formosissima G ♃
———— regina S ♃
Amomum excapum S ♃
———— repens S ♃
Ancistrum latebrosum G ♃
Anthericum hispidulum G ♃
Antholyza spicata G ♃
Antidesma alexiteria S ♄
Arachis hypogæa S ☉
Arethusa plicata S ♃
Aristea capitata G ♃
——— cyanea G ♃
——— pusilla G ♃
——— spiralis G ♃
Aristolochia longa G ♄
———— rotunda G ♄
———— sempervirens G ♄
Arum trilobum S ♃
Aspalathus ciliaris G ♄
Averhoa bilimbi S ♄
Banksia ericæfolia G ♄
——— premorsa G ♄
Bauhinia candida S ♄
Brunia abrotanoides G ♄
——— elegans G ♄
——— ericoides G ♄
——— glutinosa G ♄
Brunia lanuginosa G ♄
——— nodiflora G ♄
——— paleacea G ♄
——— phylicoides G ♄
——— radiata G ♄
——— sericea G ♄
——— speciosa G ♄
——— superba G ♄
——— verticillata G ♄
Bupthalmum sericeum G ♄
Cacalia ficoides G ♄
——— repens G ♄
Calendula aurea G ♄
——— dentata G ♄
——— fruticosa G ♄
——— grandiflora G ♄
——— graminifolia G ♄
——— tragus G ♄
Campanula mollis G ♃
Calisia repens G ♄
Callicoma serrata G ♄
Carduus diacantha G ♂
Cassia bicapsularis S ♄
——— corymbosa S ♄
——— fistula S ♄
——— nictitans S ☉
Celastrus buxifolius G ♄
Cestrum auriculatum S ♄
——— vespertinum S ♄
Chamærops humilis S ♄
Cheiranthus farsetia G ♄
———— semperflorens G ♄
———— tristis G ♄
Chorizema ilicifolia G ♄
———— nana G ♄
———— rhombæa G ♄
Chrysanthemum pinnatifidum G ♄
Chrysocoma cernua G ♄
Citrus aurantia G ♄
——— decumana G ♄
——— medica G ♄
——— nobilis G ♄
——— trifoliata G ♄
Coix lacryma jobi S ♂
Commellina benghalensis S ♃
———— prostrata S ♃
———— tuberosa S ♃
Convolvulus bryoniæfolius G ♄
———— canariensis G ♄
———— cneorum G ♄
———— farinosus G ♄

Convolvulus saxatilis . G ♄
—— scammonea . G ♃
Costus spicatus . S ♃
Cotula coronopifolia . G ♄
—— stricta . G ♄
Cratægus indica . G ♄
Crotolaria cordifolia . G ♄
—— elegans . G ♄
—— incana . S ☉
Curculigo orchioides . G ♃
—— brevifolia . G ♃
Cyperus viscosus . S ♃
Daphne gnidium . G ♄
—— tarton raira . G ♄
Datura arborea . S ♄
Dillwynia ericifolia
—— florabunda
—— glaberrima
—— obovata
Diosma brunioides
—— ciliata
—— fragrans
—— fumosa
—— glandulosa
—— hirta } G ♄
—— hispida
—— ovata
—— reclinata
—— serrulata
—— umbellata
—— unctuosa
—— uniflora
—— virgata
Dolichos ensiformis . S ☉
Echium fastuosum . G ♄
—— giganteum . G ♄
Elæocarpus dentatus . G ♄
Epacris grandiflora . G ♄
—— pungens . G ♄
—— tubiflora . G ♄
Epidendrum aloifolium
—— Baringtoniæ
—— ciliare
—— cuculatum } S ♃
—— distichum
—— secundum
—— tripterum
Erica absynthoides
—— acuta
—— ampullucea } G ♄
—— andromedaflora
—— ardens

Erica aulacea
—— axillaris
—— bicolor
—— bracteata
—— brunoides
—— concava
—— conspicua
—— cornuta
—— corymbosa
—— crinita
—— cubica
—— cubica minor
—— cylindrica
—— daphneflora
—— daphnoides
—— depressa
—— empetroides
—— fastigiata
—— fibula
—— flagelliformis
—— foliosa
—— fucata
—— gelida
—— glaucoides
—— glandulosa
—— grandiflora } G ♄
—— hirta
—— imbuta
—— imperialis
—— incarnata
—— intertexta
—— jasminiflora
—— kalmiflora
—— Lambertia
—— latifolia
—— magnifica
—— marifolia
—— Massonia
—— grossa
—— metulæflora
—— micranthus
—— moschata
—— muscaria
—— ovata
—— palustris
—— Patersonii
—— pencillata
—— rubra
—— perspicua
—— Petiveriana
—— coccinea
—— planifolia

Erica plumosa
—— pregnans
—— princeps
—— pyrolæflora
—— retorta
—— rigidula
—— rosacea
—— rotundifolia
—— rubra
—— saturegifolia
—— simpliciflora
—— Solandra
—— Sparmannia
—— spicata
—— sulphurea
—— tabularis
—— tetragona
—— thymifolia
—— tiaræflora
—— transparens
—— umbellata
—— urceolaris
—— ursina
—— viridis
} G ♄

Erythrina corallodendron . S ♄
Eugenia elliptica . G ♄
—— jambos . S ♄
—— malaccensis . S ♄
—— zeylanica . S ♄
Falkia repens . G ♃
Ferraria tygrida . G ♃
—— viridiflora . G ♃
Fuchia coccinea . G ♄
—— lycioides . G ♄

Gladiolus abreviatus
—— alatus
—— albidus
—— angustatus
—— angustus
—— blandus
—— carneus
—— concolor
—— crispus
—— florabundus
—— galeatus
—— gracilis
—— gramineus
—— iridifolius
—— laccatus
—— lineatus
—— longifolius
—— marginatus
} G ♃

Gladiolus merianellus
—— merianus
—— montanus
—— orchidiflorus
—— plicatus
—— polystachius
—— recurvus
—— securiger
—— striatus
—— strictus
—— tubiflorus
—— indulatus
—— versicolor
} G ♃

Gnaphalium congestum . G ♄
Gnidia lævigata . G ♄
—— oppositifolia . G ♄
Grislea tomentosa . S ♄
Gronovia scandens . S ☉
Hæmanthus multiflorus . G ♃
—— puniceus . G ♃
Hakea florida . G ♄

Hermania crispa
—— denudata
—— disticha
—— flammea
—— hirsuta
—— incisa
—— micans
—— odorata
—— pulverulenta
—— rotundifolia
—— salvifolia
—— tennifolia
—— trifurca
} G ♄

Hippocrepis balearica . G ♄
Hookera coronaria . G ♃
—— pulchella . G ♃
Iberis gibraltarica . G ♄
Illicium anisatum . G ♄
Iris chinensis . G ♃
—— ciliata . G ♃
—— longifolia . G ♃
Itea cyrilla . G ♄

Ixia conica
—— crispa
—— fistulosa
—— fucata
—— linearis
—— miniata
—— obtusata
—— pilosa
—— plantaginea
} G ♃

Ixia polystachia
—— radiata
—— rochensis
—— setacea } G ♃
Jatropha urens . S ♄
Justicia echolium . S ♄
—— pectoralis . S ☉
Kiggelaria africana . G ♄
Lantana involucrata . G ♃
Lasiopetalum arborescens . G ♄
Lavandula stœchas . G ♄
Lithospermum distichum . G ♃
Limodorum altum . S ♃
Liparia phylicifolia . G ♄
—— sericea . G ♄
—— tomentosa . G ♄
Lobelia surinamensis . S ♃
Lodigesia oxalidifolia . G ♄
Manettia coccinea . S ♄
Mantisia saltatoria . S ♃
Melanthium junceum
—— spicatum
—— triquetrum
—— viride } G ♃
Melianthus major . G ♄
Menyanthes exaltata . S ♃
Messembryanthemum caulescens
Messembryanthemum deltoides
—— pugioniforme
—— rubicaule
—— veruculatum } G ♄
Mirbella reticulata . G ♄
Montinia caryophyllacea G ♄
Moræa cærulea
—— flexuosa
—— iridioides
—— longiflora } G ♃
—— northiana . S ♃
—— plicata . S ♃
—— ramosa . G ♃
—— spiralis . G ♃
—— tenuis . G ♃
—— unguiculata G ♃
Neottia speciosa . S ♃
Nymphæa cahlara
—— cærulea
—— lotus .
—— pubescens
—— pygmæa
—— rubra
—— versicolor } S ♃
Olyra latifolia . . S ♃

Ononis hispanica . S ♃
—— pinguis . S ♃
Ophioxylum serpentinum S ♄
Orchis bicornis . G ♄
—— ciliaris . G ♃
Ornithogalum altissimum
—— elatum
—— flavissimum
—— lacteum
—— latifolium
—— odoratum
—— revolutum
—— rupestre
—— umifolium } G ♃
Passerina filiformis . G ♄
—— hirsuta . G ♄
—— laxa . G ♄
—— spicata . G ♄
Passiflora augustifolia S ♄
—— vespertilio S ♄
Pelargonium anceps G ♃
—— abrotanifolium G ♄
—— apifolium G ♄
—— astragalifolium G ♃
—— australe G ♃
—— barbatum G ♄
—— betulinum G ♄
—— canescens G ♄
—— carnosum G ♄
—— ceratophyllum G ♄
—— ciliatum G ♃
—— coronillæfolium G ♃
—— cotyledonis G ♄
—— crassifolium G ♃
—— crithmifolium G ♄
—— echinatum G ♄
—— elegans G ♄
—— fulgidum G ♄
—— gibbosum G ♄
—— glomeratum G ♃
—— glutinosum G ♄
—— hispidum G ♄
—— incanum G ♄
—— incarnatum G ♄
—— incrassatum G ♃
—— involucratum G ♃
—— lanceolatum G ♄
—— lineare G ♄
—— myrhifolium G ♄
—— ovale . G ♄
—— oxalifolium G ♃
—— pencillatum G ♄

Pelargonium pictum . G ♃
——— pilosum G ♃
——— quinquevulnerum G ♄
——— radiatum G ♃
——— reflexum G ♃
——— reniforme G ♄
——— rubrum G ♄
——— selinum . G ♃
——— spathulatum G ♃
——— spurium G ♄
——— tenuifolium G ♄
——— tomentosum G ♄
——— tricuspidatum G ♄
——— undulatum G ♄
Pergularia odoratissima
——— minor
Piper aduncum
—— amalago
—— Betle } S ♄
—— magnolifolium
—— nigrum
—— nitidum
—— obtusifolium
—— pellucidum . S ♃
—— polystachia . S ♃
Pittosporum capensis
——— coriaceum
——— hirtum
——— revolutum } G ♄
——— Tobira
——— undulatum
Plantago capensis . G ♄
Polygala alopecuroides G ♄
——— bracteolata G ♂
——— graminifolia G ♄
Pomaderris apetala . G ♄
——— elliptica G ♄
Poterium spinosum G ♄
Protea crithmifolia
——— globosa
——— glomerata
——— incurva
——— lagopus
——— pallens } G ♄
——— phyllicoides
——— sceptrum
——— scolymus
——— serraria
——— sphærocephala
——— spicata
Psoralea aculeata } G ♄
——— bracteata

Psoralea capitata
——— decumbens } G ♄
——— pinnata
——— spicata
Psycothria parasitica S ♄
Pultenæa daphnoides . G ♄
——— juncea . G ♄
——— linophylla . G ♄
——— obcordata G ♄
——— scabra . G ♄
——— stipularis . G ♄
——— vestita . G ♄
Relhania squarrosa . G ♄
Renealmia nutans . S ♃
Rhamus colubrinus G ♄
——— glandulosus . G ♄
Ruscus androgynus G ♄
Salvia abyssinica . G ♃
——— amara . G ♃
——— arborea . G ♄
——— mexicana . G ♄
——— pseudo coccinea S ♄
——— serotina . G ☉
——— tiliæfolia . G ♄
Satureja thymbra . G ♄
Selago cærulea . G ♂
——— fasciculata . G ☉
——— ovata . G ♄
Senecio cinerascens G ♄
Serissa fœtida . G ♄
——— var florepleno G ♄
Sideritis canariensis G ♄
——— cretica - G ♄
Sophora microphylla S ♄
——— tetraptera . G ♄
Sowerbia juncea . G ♃
Spartium nubigenum
——— umbellatum
——— virgatum } G ♄
Struthiola ciliata
——— ovata
Stylidium glandulosum G ♄
——— gramineum G ♃
Styphelia elliptica
——— parviflora
——— trifolia } G ♄
——— tubiflora
——— viridis
Teucrium betonicum G ♄
Tripsacum hermaphroditicum S ♂
Verbena aubletii . G ♂
——— indica . S ☉

Verbena jamaicensis . S ♄
——— mexicana . S ♃
——— nodiflora . S ♃
Viola verticillata . G ♃
Vitis lucida . . G ♄
Volkameria inermis . S ♄
——— japonica S ♄
——— kæmpferia S ♄
Westringia Dampieri G ♄
Witsenia corymbosa . G ♄
——— maura . G ♄
Wurmbea campanulata
——— capsensis } G ♃
——— purpurea
Xeranthemum argenteum G ♄
Xeranthemum filiforme
——— fragrans
——— herbaceum
——— humile
——— proliferum
——— retortum } G ♄
——— rigidum
——— speciosissimum
——— spirale
——— Stæhelina
——— variegatum
——— vestitum
Xylophylla falcata . S ♄
——— latifolia . S ♄
Xyris operculata . G ♃

JUNE, JULY, AND AUGUST.

Achillea ægyptiaca . G ♄
Acyrum crux andræ . G ♄
Adiantum reniforme . G ♃
——— villosum . S ♃
Adina globifera . S ♄
Agapanthus umbellatus G ♃
Ægiphila diffusa . S ♄
——— fœtida . S ♄
——— obovata . S ♄
Aizoon canariense . G ☉
Albuca physodes .
——— spiralis } G ♃
——— vittata
Allium fragrans
——— gracile } S ♃
——— striatum
Alstroemeria edulis . S ♃
Amaranthus melancholicus
——— oleraceus } S ☉
——— tricolor
Amaryllis belladonna G ♃
——— Fothergillii G ♃
——— jagus . S ♃
——— longifolia G ♃
——— ornata . S ♃
——— purpurea . G ♃
——— radula . G ♃
——— zeylanica . S ♃
Anchusa capensis . G ♂
Andersonia sprengeloides G ♄
Andropogon barbatus S ♂
——— fasciculatus S ☉
——— ischæmus G ♂
——— muticum G ♂
Anigozanthus flavida G ♃
Annona tripetala . S ♄
Anthemis nodosa . G ♃
Anthospermum æthiopicum G ♄
Antirhinum asarinum G ♃
——— reticulatum
——— triste } G ♃
——— villosum
Arctotis acaulis . G ♃
——— calendulacea G ♄
——— plantaginea . G ♃
——— superba . G ♄
Arenaria procumbens G ♃
Aristea longifolia . G ♃
——— major . G ♃
Aristolochia pistolochia S ♄
——— trilobata G ♄
Artemissia arborescens G ♄
——— argentea G ♄
——— elegans . G ♄
——— minima . G ☉
——— palmata . G ♄
——— vermiculata G ♄
Arum bicolorum
——— bulbiferum } S ♃
——— orixensis
Asplenium hemionitis
——— dentex
——— linguiforme } G ♃
——— rizophyllum
Aster argophyllus . G ♄
——— cymbalaria G ♂
——— lyratus . G ♄
——— pedunculatus . G ♄

Aster sericea . . G ♃
Atraphaxis undulatus . S ♄
Atriplex albicans . G ♄
Baccharis ivæfolia . G ♄
Banisteria fulgens . S ♄
——— laurifolia . S ♄
Banksia serrata . G ♄
Begonia acuminata . S ♄
——— Evansiana . S ♃
——— humilis . S ♂
——— macrophylla . S ♄
——— nitida . S ♄
Besleria melittifolia S ♄
——— pulchella . S ♄
Bignonia leucoxylon . S ♄
——— pandora G ♄
——— sempervirens G ♄
——— stans . S ♄
Biscutella sempervirens G ♄
Bixa orellana . . S ♄
Blæria articularis
——— ciliaris
——— ericoides } G ♄
——— muscosa
——— rubra
Blakea trinerva . S ♄
Blecknum australe . G ♃
——— occidentale S ♃
——— radicans . G ♃
Boerhavia scandens . S ♄
——— viscosa . S ♄
——— hirsuta . S ♃
Bontia daphnoides . S ♄
Borago indica . S ☉
Borbonia cordata
——— crenata
——— lanceolata } G ♄
——— ovata
——— trinervia
Brotera persica . G ♄
Browallia demissa . S ☉
Bryonia africana . G ♃
——— grandis . G ♄
Bryophyllum calycinum S ♄
Brunsfelsia americana S ♃
——— undulata . S ♄
Bubon galbanum . . G ♄
——— gumiferum . G ♄
——— macedonicum G ♃
Bupthalmum arborescens G ♄
——— frutescens G ♄
Cactus ficus indica S ♄

Cactus grandiflorus
——— hexagonus
——— mammillaris
——— melocactus
——— opuntia
——— pendulus } S ♄
——— phyllanthus
——— repandus
——— tetragonus
——— triangularis
——— tuna
Cadia purpurea . S ♄
Callicarpa ferruginea S ♄
——— lanata . S ♄
Campanula nummularia G ♃
——— ciliaris . G ☉
Canna coccinea
——— flaccida
——— glauca
——— indica } S ♃
——— lutea
——— patens
Capsicum annuum . S ☉
——— baccatum . S ♄
——— cerassiforme S ☉
——— grossum . S ♂
——— sinense . G ♄
Cardus cassabonæ . G ♂
Carolinea minor . S ♄
Carthamus salicifolius G ♄
Cassia biflora . S ♄
——— ligustrina . G ♄
——— multiglandulosa S ♄
——— senna . . S ☉
——— stipularis . G ♄
Catesbæa spinosa . S ♄
Ceanothus asiaticus . S ♄
Celosia argentea
——— cernua } S ☉
——— cristata
——— imperialis
Celsia cretica . G ♂
——— viscosa . G ☉
Centaurea ægyptiaca . G ♃
——— africana . G ♃
——— argentea . G ♄
——— cineraria . G ♃
——— ragusina . G ♄
——— sempervirens G ♄
Cerbera ahouai . S ♄
——— undulata . S ♄
Ceropegia sagittata . G ♄

Cestrum parqui . . G ♄
Chelone campanulacea G ♃
——— ruelloides . G ♃
Chlorophytum incarnatum S ♄
Chenopodium anthelminticum G ♄
Chironia baccifera .
——— frutescens . G ♄
——— latifolia .
Chichorium spinosum G ♄
Cineraria geifolia .
——— lobata
——— malvæfolia G ♄
——— parviflora
Cissus antartica .
——— pentaphylla . G ♄
——— quinata .
Cistus algarvensis
——— angustifolius
——— canariensis
——— creticus
——— crispus
——— formosus
——— fumanus
——— glutinosus
——— halimifolius G ♄
——— hirtus
——— lævipes
——— laxus
——— libanotis
——— monspeliensis
——— umbellatus
——— villosus
Cleome arabica . G ☉
——— dodecandra . S ☉
——— gigantea . S ♄
——— spinosa . S ♂
——— viscosa . S ☉
Clerodendron fortunatum S ♄
——— squamatum S ♄
Clethra arborea . G ♄
Cliffortia cuneata
——— crenata
——— ilicifolia
——— linearis G ♄
——— abcordata
——— rhuscifolia
——— trifoliata
Clitoria ternatea . S ♄
Cneorum tricoccum . G ♄
Colutea frutescens . S ♄
——— herbacea . G ☉
Comocladia dentata . S ♄
Comocladia ilicifolia . S ♄
——— integrifolia S ♄
*Conchium aciculare .
——— gibbosum
——— longifolium
——— nervosum G ♄
——— pinifolium
——— pubescens
——— salignum
Convolvulus brasiliensis G ♃
——— erubescens G ♃
——— grandiflorus S ♄
——— hederaceus S ☉
——— maximus S ♄
——— panifolius G ♄
——— pes-capræ S ☉
——— rupestris . G ♄
——— umbellatus S ♃
Conyza candida . G ♄
——— saxatilis . . G ♃
——— sericea . . G ♄
——— verbascifolia S ♄
Corchorus capsularis
——— eustans S ☉
——— olitorius
Cordia dioica
——— hirsuta
——— patagonula S ♄
——— sebestæna
Coris monspeliensis . G ♂
Coronilla juncea . . G ♄
Cosmea bipinnata . G ♃
Cotyledon hemisphærica G ♄
——— linguiforme S ♄
——— orbiculata . G ♃
——— serrata . G ♃
——— spuria . G ♄
Crassula acutifolia . G ♄
——— coccinea . G ♄
——— connata . G ♄
——— falcata . G ♄
——— glomerata G ☉
——— hirsuta . G ♄
——— imbricata . G ♄
——— obvallata . G ♃
——— orbiculata . G ♃
——— pellucida . G ♂
——— scabra. . G ♄
Cratæva capparoides S ♄
Crepis filiformis . G ♄
Crinum australe . G ♃
——— giganteum . S ♃

*Halcea.

Crotolaria biflora . S ☉
——— diffusa . G ♂
——— juncea . S ☉
——— laburnifolia . S ♂
——— retusa . S ☉
——— sagittalis . S ☉
——— triflora . G ♂
——— verrucosa . S ☉
Croton argenteum S ☉
——— aromaticum S ♄
——— glandulosum S ♄
Crucianella maritima G ♄
——— pubescens G ♃
Cucumis anguria
——— dudaim } S ☉
——— flexuosus
Cuphea viscosa . S ☉
Cyanella capensis . . G ♃
——— lutea . . G ♃
Cynanchum crispiflorum S ♄
——— hirtum . S ♄
——— suberosum S ♄
——— undulatum G ♄
——— viminale G ♄
Cynara humilis . . G ♃
Cynosurus corocanus . S ☉
Cyperus dubius
——— iria
——— glomeratus } S ♃
——— papyrus
——— strigosus
Cyrilla pulchella . S ♃
Cyrtanthus obliquus . G ♃
Cytisus cajan . S ☉
——— foliosus . G ♄
——— tomensosus . G ♄
Dais cotonifolia . . G ♄
Daviesia corymbosa . G ♄
Damasonium indicum S ♃
Dentella repens . G ☉
Dichondra sericea } G ♃
——— repens
Didelta spinosa . G ♄
Digitalis canariensis G ♄
——— obscura . G ♄
——— sceptrum . G ♄
Diosma capitata
——— cordata
——— cupressina } G ♄
——— glandulosa
——— pulchella

Diosma orbicularis
——— tenella } G ♄
——— villosa
Dodonæa angustifolia G ♄
——— heterophylla G ♄
——— triquetra . G ♄
——— viscosa . S ♄
Dolichos biflorus . S ☉
——— lablab . . G ♄
——— lignosus . . G ♄
——— purpureus . S ♃
——— sinensis . S ☉
——— sesquipedalis . S ☉
Dracontium pertusum S ♄
Ebenus cretica . G ♄
Echites suberecta . S ♄
——— torulosa . S ♄
Echium argenteum G ♄
——— glaucophyllum G ♄
——— longiflorum G ♄
Elæagnus latifolia . S ♄
Elæodendron australe G ♄
Elegia juncea } G ♃
——— minor
Elephantopus scaber . S ♃
Embothryum lineare G ♄
Empleurum serrulatum G ♄
Enselia limensis . G ♄
Epidendrum alooides
——— ciliatum } S ♃
——— cochleatum
——— ensifolium
Erica aitonia
—— arbutiflora
—— articularis
—— assurgens
—— biflora
—— campestris
—— canescens
—— capitata
—— carinata
—— cistifolia } G ♄
—— comosa alba
——— rubra
—— complanata
—— congesta
—— cumulata
—— cupressina
—— cyrillæflora
—— decumbens
—— deflexa

Erica demissa
—— densa
—— densifolia
—— Dickensonia
—— Donnea
—— dumosa
—— elata
—— emarginata
—— epistomea
—— eriocephala
—— filamentosa
—— flagelliformis
—— flava
—— flectans
—— florida
—— fulgida
—— gelida tardiva
—— glauca
—— glomerata
—— Hibbertia
—— hirtiflora
—— hispida
—— Humea
—— Hyacinthoides
—— inaperta
—— incana
—— inconspicua
—— inflata
—— infundibuliformis
—— Irbyana
—— lanata
—— Leea
—— longiflora
—— Lychnidea
—— magnifica
—— metulæflora
—— minima
—— monodelphia
—— monsoniana
—— mucosides
—— nudiflora
—— obcordata
—— ocularia
—— odora rosea
—— ovata
—— paniculata
—— paradisiaca
—— præcox
—— parviflora
—— pendula
—— pilulifera
—— radiata
} G ♄

Erica regerminans
—— rostella
—— rubens
—— Savillea
—— serrulata
—— setacea
—— Shannonia
—— Smithiana
—— sordida
—— spumosa
—— suaveolens
—— Swainsoniana
—— tenua
—— tetragona
—— Thunbergia
—— triflora
—— ventricosa
—— venusta
—— venustella
—— virgata
} G ♄

Eriospermum folioliferum
———— lancifolium
———— latifolium
} G ♃

Erythrina picta . . S ♄
Eucalyptus obliqua . G ♄
Euchilus obcordata . G ♄
Eucomis punctata . G ♃
———— striata . . G ♄

Euphorbia arborea
———— nummularifolia
———— petiolaris
} S ♄

———— caput medusæ S ♄
———— cotinifolia . S ♄
———— histrix . . G ♄
———— hypericifolia S ♄
———— læta . . G ♄
———— mammillaris S ♄
———— mauritanica S ♄
———— meloformis . S ♄
———— multiangulata S ♄
———— nerifolia . S ♄
———— pilulifera . S ☉
———— scolopendria S ♄
———— tithymaloides S ♄

Eustrephus latifolius . G ♃
Exacum viscosum . G ♄
Flacourtia romoutchi . S ♄
Flagellaria indica . S ♄
Fumaria spectabilis . G ♃
Gardennia longiflora . S ♄
———— uliginosa . S ♄
Galega ochroleuca . S ♄

Galenia africana
Gardenia florida — G ♄
——— pleno
——— rothmania — S ♄
——— thunbergia — G ♄
——— tubiflora — S ♄
Gaura mutabilis — G ♂
Genista canariensis — G ♄
Gesneria tomentosa — S ♄
Globularia longifolia — G ♄
Gloriosa superba — S ♃
Gloxinia maculata — S ♃
Gnaphalium arboreum — G ♄
——— crassifolium — G ♄
——— fœtidum — G ♂
——— fruticans
——— grandiflorum
——— longifolium
——— multiflorum
——— patulum — G ♄
Gnidia pinifolia
Gorteria ciliaris
——— spinosa
——— squarrosa
Gossypium arboreum — S ♄
——— barbadensis — S ♂
Grewia occidentalis — G ♄
Hakea nitida — G ♄
Halleria lucida — G ♄
Hebenstreitia aurea — G ♂
——— cordata — G ♂
——— dentata — G ♂
Hedychium coronarium — S ♄
Hedysarum gangeticum — S ♂
——— gyrans — S ♂
——— triflorum — S ☉
——— vespertilio — S ♂
Helicteres isora — S ♄
——— jamaicensis — S ♄
Hibbertia crenata — G ♄
——— volubilis — G ♄
Hibiscus abelmoschus — S ♄
——— cannabinus — S ☉
——— esculentus — G ☉
——— ficulneus — S ♄
——— hispidatus — G ♂
——— manihot — S ♄
——— moschatus — ♃
——— praemorsus — G ♄
——— radiatus — S ☉
——— rosa sinensis — S ♄
——— sabdariffa — S ♄
——— speciosus — S ♃
Hibiscus spinifex — S ♄
——— vitifolius — S ☉
Hillia longiflora — S ♄
—— tetrandra
Hippia frutescens — G ♄
Hiraea reclinata — S ♄
Holchus bicolor — S ☉
——— saccharatus — S ☉
——— sorghum — S ☉
*Houstonia coccinea — G ♃
Hoya carnosa — S ♄
Hydrocotyle asiatica — S ♃
——— spananthe — G ♂
——— villosa — S ♃
Hypoxis aquatica — G ♃
——— alba — G ♃
——— linearis — G ♃
——— obliqua — G ♃
——— serrata — G ♃
——— stellata — G ♃
Hypericum aegyptiacum — G ♄
——— canariens — G ♄
——— creticum — G ♄
——— foliosum — G ♄
——— glandulosum — G ♄
——— olympicum — G ♄
——— tomentosum — G ♄
Illecebrum javanicum — S ♂
——— sessile — S ♂
Indigofera angustifolia — G ♄
——— anil — S ♂
——— coccinea — S ♃
——— cytissoides — G ♄
——— inconspicua — G ♃
——— linifolia — S ☉
——— sarmentosa — G ♄
——— tictoria — S ♂
——— trita — S ♄
Ipomaea glaucifolia — S ♃
——— heterophylla — S ♂
——— insignis — S ♃
——— phœnicea — S ♃
——— quamoclit — S ☉
——— repanda — S ♃
——— scabra — S ♂
——— stipulacea — S ♂
Iris edulis — G ♃
—— martinicensis — G ♃
—— pavonia — G ♃
—— spathacea — G ♃
—— villosa — G ♃

*Bouvardia.

*Itea spinosa . . G ♄
Ixia purpurea . G ♃
—— spectabilis . G ♃
Ixora alba . . S ♄
—— coccinea . S ♄
—— purpurea . S ♄
Jacksonia scoparia . G ♄
——— spinosa . G ♄
Justicia adhadtoda . G ♄
——— bicolor . S ♄
——— ciliaris . S ☉
——— gendarussa . S ♄
——— grandiflora . S ♄
——— hysopifolia . G ♄
——— lithospermifolia S ☉
——— nassuta . S ♄
——— parviflora . S ♃
——— peruviana . S ♄
——— pulchella . S ♄
——— punicea . S ♄
——— salicifolia . S ♃
——— spinosa . . S ♄
——— superba . S ♄
——— virgularis . S ♄
Kempfaeria galanga . S ♃
Kyllingia incompleta S ♃
——— monocephala S ♃
——— triceps . S ♃
——— umbellata . S ♃
Lachnaea buxifolia
——— conglomerata } G ♄
——— eriocephala
——— purpurea
Lagunea patersonia . G ♄
Lamarckia dentata . G ♄
Lantana recta
——— trifolia } S ♄
Laurus cassia
Lavandula abrotanoides
——— dentata
Lavatera micans
——— olbia
——— triloba
Lepidium subulatum
——— suffruticosum } G ♄
Leptospermum acutifolium
——————— ambiguum
——————— attenuatum
——————— baccatum
——————— flavescens
——————— juniperinum
——————— lanigerum

*Bursaria.

Leptospermum parvifolium
——————— pubescens } G ♄
——————— scoparium
——————— thea
Limeum africanum . G ♃
Limodorum altum . S ♃
Limonia trifoliata . S ♄
Liparia sphærica
——— villosa
Lotus creticus
—— hirsutus } G ♄
—— maritima
Lupinus arboreus
Lisianthus exertus } S ♄
——— longifolius
Lotus australis . G ♄
Lobelia alata
——— bellidifolia
——— lutea } G ♃
——— pallida
——— secunda
——— Tupa . G ♄
Lomandra longifolia } G ♃
——— rigida
Lychnis coronata . G ♃
Lycium afrum . G ♄
Lythrum ciliatum . S ♄
——— fruticosum S ♄
Mahernia diffusa
——— incisa } G ♄
——— odorata
——— pinnata
Malphigia urens . S ♄
Malva bryoniæfolia . G ♄
——— divaricata . G ♄
——— operculata . G ♄
——— reflexa . G ♄
——— spicata . S ♂
Mangifera indica . S ♄
Marica paludosa . S ♃
Marrubium pseudo-dictamus G ♄
Martynia proboscidea S ☉
Medicago maritima
Melaleuca armillaris
——— coronata
——— decussata
——— densa
——— diosmæfolia
——— divaricata } G ♄
——— ericæfolia
——— fimbriata
——— glauca
——— hypericoides

Melaleuca lanata
——— Linarifolia
——— lucida
——— nerifolia
——— nodosa
——— perforata G ♄
——— squarrosa
——— stricta
——— stypheloides
——— trinervia
——— viridiflora
Melastoma cymosa
——— malabathrica S ♄
——— purpurea
Melia azederach . G ♄
Melianthus minor . G ♄
Mespilus japonica . G ♄
Messembryanthemum
——— albidum
——— aureum
——— australe
——— bicolorum G ♄
——— bellidiflorum
——— calamiforme
——— coccineum
——— crassifolium
——— crystalinum G ☉
——— decumbens
——— edule
——— emarginatum
——— expansum
——— falcatum G ♄
——— floribundum
——— fulgens
——— geniculatum
——— glabrum . G ☉
——— glaucum . G ♄
——— glomeratum . G ♄
——— Haworthii . G ♄
——— junceum . G ♄
——— lanceolatum G ♂
——— micans . G ♄
——— microphyllum G ♄
——— minimum . G ♃
——— multiflorum . G ♄
——— nitidum . G ♄
——— noctiflorum . G ♄
——— parviflorum . G ♄
——— perfoliatum . G ♄
——— pinnatifidum . G ☉
——— pulchellum . G ♄
——— reptans . G ♄

Messembryanthemum
——— scabrum G ♄
——— spinosum . G ♄
——— splendens . G ♄
——— stipulaceum . G ♄
——— subulatum . G ♄
——— tenellum . G ♄
——— tenuifolium G ♄
——— tortuosum . G ♄
——— tripolium . G ♂
——— umbellatum G ♄
——— uncinatum . G ♄
——— vaginatum . G ♄
——— villosum . G ♄
——— virgatum . G ♄
——— viride . G ♄
Metrosideros angustifolia
——— canaliculata
——— citrina
——— diosmifolia
——— glomerata
——— hirsuta
——— hispida G ♄
——— lanceolata
——— linearis
——— pinifolia
——— pubescens
——— rigida
——— saligna
Michauxia campanuloides G ♂
Mimosa farnesiana . S ♄
——— grandiflora . S ♄
——— nilotica . S ♄
——— pernambucana S ♄
——— speciosa . S ♄
——— virgata . S ♄
Mirabilis dichotoma S ♃
——— jalapa . S ♃
——— longiflora . S ♃
Monetia barlerioides . S ♃
Monsonia filia . . G ♃
——— ovata . G ♃
Moraea spiralis . G ♃
Mussænda pubescens . S ♄
Myrica cordifolia
——— faya
——— incisa G ♄
——— quercifolia
——— serrata
Myrtus fragrans . S ♄
——— pimento . S ♄
——— tomentosa . S ♄

Nandina domestica . G ♄
Nelumbium speciosum S ♃
Nepeta reticulata . G ♃
Nicotiana fruticosa . S ♄
——— odorata . G ☉
Notelæa Ligustrina } G ♄
——— longifolia }
Ocymum gratissimum S ♄
Oenothera nocturna . G ♄
Olea americana } G ♄
—— capensis
—— excelsa
—— europaea
—— fragrans
—— salicifolia
—— undulata
Omphalea triandra . S ♄
Ononis crispa . G ♄
Opercularia aspera . G ♃
Origanum ægyptiacum G ♄
——— dictamnus . G ♄
——— marjorana . G ♄
——— onites . G ♄
——— siphilium . G ♃
——— Tournifortii G ♄
Ornithogalum juncifolium } G ♃
——— niveum
——— thyrsoides
Oryza sativa . S ☉
Osmites camphorina . G ♄
Osteospermum cæruleum } G ♄
——— grandiflorum
——— moniliferum
Oxybaphus viscosus . S ♃
Pallasia haliimifolia . G ♄
Pancratium carolinianum G ♃
——— fragrans . S ♃
——— verecundum S ♃
——— zeylanicum S ♃
Panicum fasciculatum S ☉
——— hirtellum . S ☉
Parietaria parviflora . S ☉
——— urticifolia . S ☉
Paspalum stoloniferum S ♃
Passiflora ciliata . S ♄
——— fœtida . S ♂
——— incarnata . S ♃
——— laurifolia } S ♄
——— lunata }
Pattersonia sericea . G ♃
Pavonia columella S ♄
——— praemorsa G ♄

Pavonia spinifex S ♄
Pelargonium
——— angulosum
——— Beaufortiaum
——— bicolor
——— blattarium
——— cortusæfolium
——— crassicaule
——— Curtisianum
——— deltoideum
——— diversafolium
——— Forremanni } G ♄
——— formosum
——— furcatum
——— glaucum
——— grandiflorum
——— hepaticæfolium
——— inodorum
——— Irbyanum
——— lanceolatum
——— lateripes
——— melonanthon G ♃
——— peltatum } G ♄
——— penicillatum }
——— rapaceum } G ♃
——— saniculifolium }
——— scandens
——— spurium
——— stenopetalum
——— ternatum
——— tetragonum
——— tomentosum
Penæa squamosa } G ♄
Periploca africana
——— laevigata
——— secamone
Persoonia lanceolata
——— linearis
——— latifolia
Petrea volubilis . S ♄
Phaseolus tuberosus . S ♃
Phlomis leonitis } G ♄
——— purpurea }
——— zeylanica . S ☉
Philydrum laniginosum S ♃
Phyllis nobla . G ♄
Physalis barbadensis . S ☉
——— chenopodifolia S ☉
——— curassavica . S ♃
——— minima . S ☉
——— prostrata . S ☉
——— somnifera . G ♄

Piper blandum . S ♃
—— clusiaefolium . S ♄
—— distachyon . S ♃
—— laurifolium . S ♄
—— maculosum . S ♄
—— pellucidum . S ♂
—— pellatum . S ♄
—— pulchellum . S ♃
—— stellatum . S ♃
—— trifolium . S ♃
Pitcarnia angustifolia
——— bromelifolia
——— media } S ♄
——— racemosa
——— sulphurea
Platylobium aphyllum
——— bifolium
——— compressum
——— formosum
——— gracile
——— lanceolatum } G ♄
——— microphyllum
——— ovatum
——— scolopendrium
——— undulatum
Plectranthus fruticosus
——— barbatus . S ♄
Plumbago rosea
——— scandens } S ♄
——— tristis
Poa ciliaris . . S ☉
Poinciana pulcherrima S ♄
Polygala oppositifolia G ♄
Polygonum flaccidum S ♄
Polypodium patens . S ♃
Portlandia grandiflora . S ♄
Portulacca arachnoides
——— filamentosa } G ♄
——— lanceolata
——— pilosa . . G ☉
——— rubens . S ♂
——— setacea . G ♄
Pothos acaulis
——— cannaefolia
——— coriacea } S ♃
——— crassinervia
——— magnoliæfolia
——— ovata .
Prasium majus
——— minus } G ♄
Prinos lucidus
Protea anemonifolia

Protea arborescens G ♄
——— argentiflora
——— cinerea
——— mucronata
——— plumosa
——— spathulata
——— speciosa
——— nigra } G ♄
——— rigida
——— longifolia
——— latifolia
——— torta
——— triternata
——— umbellata
Prostanthera lasianthos
Psidium pomiferum } S ♄
——— pyriferum
Psoralea angustifolia
——— aphylla
——— hirta
——— multicaulis } G ♄
Pteronia camphorata
——— oppositifolia
Pulteneya hirsuta
——— ilicifolia
Pyrus japonica . G ♄
Quassia amara
——— simaruba } S ♄
Rauwolfia nitida
Restio elegia
Rhus lævigatum
—— lucidum
—— pubescens
—— semialatum } G ♄
—— succedanium
—— tomentosum
—— villosum
—— viminale
Rondeletia americana
——— hirta } S ♄
——— lævigata
Rosmarinus chilensis . G ♄
Rubia lucida . G ♃
Ruellia blecknum . S ♃
——— lactea . S ♃
——— ovata . S ♃
——— patula . S ♃
——— strepens . G ♃
Rumex lunaria . G ♄
Sagittaria lancefolia . S ♃
——— obtusifolia . S ♃
Salvia abyssinica . G ♃

Salvia auriculata . G ♄
—— bracteata . G ♄
—— colorata . . G ♄
—— dominica . S ♃
—— grandiflora . G ♄
—— interrupta . G ♄
—— linearis . G ♃
—— nubia .
—— paniculata
—— pomifera } G ♄
—— rugosa
—— scabra .
—— Tiliæfolia . G ♃
Sanseviera guinensis . S ♃
———— zeylanica . S ♃
Satureja juliana . G ♃
Scabiosa rigida } G ♄
Schinus molle
Schisandra coccinea G ♄
Scoparia dulcis . S ☉
Scrophularia mellifera G ♃
Selago corymbosa
——— odorata
——— spicata } G ♃
Selinum decipiens
Sempervivum canariense
———— cuspidatum G ♃
———— monanthes G ♃
———— tortuosum } G ♃
Senecio ilicifolia
Sesuvium portulaccastrum S ♂
Sida abutilon
—— asiatica } S ☉
—— indica
—— rhomboidea . S ♂
Sideritis syriaca . G ♄
Sideroxylum inerme . G ♄
———— spinosum } G ♄
———— tenax
Sigisbeckia flosculosa } S ☉
———— orientalis
Silene frutescens . G ♄
—— gigantea . G ♂
—— ornata . . G ♂
Solanum auriculatum S ♄
———— Betaceum . G ♄
———— campechinense G ♄
———— diphyllum . S ♄
———— giganteum G ♄
———— Havanense . S ♄
———— indicum . S ♄
———— lasciniatum . G ♄

Solanum marginatum G ♄
———— melongena . G ☉
———— Pseudo capsicum G ♄
———— racemosum . S ♄
———— radicans . G ♃
———— sodomeum
———— suffruticosum } G ♄
———— tomentosum
Spartium
———— monospermum } G ♄
———— spinosum
Spærolobium vimineum G ♄
Spermacoce radicans S ♃
———— rubra . G ♂
Spigelia anthelmia . S ☉
Stachys canariensis . G ♃
——— coccinea . G ♃
Statice fasciculata . G ♄
——— grandiflora . G ♃
——— purpurata . G ♃
Sterculia balanghas . S ♄
Stillago bunias . S ♄
Struthiola erecta
———— glauca
———— imbricata } G ♄
———— incana
———— pubescens
———— tomentosa
Tacca pinnatifida . S ♃
Talinum anacampseros G ♄
———— crassifolium S ♄
———— patens . S ♄
Taxus elongata
——— lanceolata } G ♄
——— macrophylla
——— nucifera
Tradescantia discolor . S ♄
Tetragonia crystalina . G ☉
———— echinata . G ☉
———— fruticosa . G ♄
———— herbacea . G ♄
Teucrium asiaticum
———— capitatum
———— flavum
———— fruticans
———— heterophyllum
———— latifolium } G ♄
———— massiliense
———— marum
———— polium
———— regium
———— trifidum

Thunbergia fragrans	S ♄
Thymbra spicata	G ♄
——— verticillata	G ♄
Thymus mastichina	G ♄
Tournefortia cymosa	S ♄
——— fœtidissima	
——— humilis	
——— scabra	
——— volubilis	
Tradescantia crassifolia	S ♃
——— geniculata	S ♃
Trianthema monogyna	S ☉
Trichilia glabra	S ♄
——— odorata	
Triumfetta lappata	S ♄
Tropæolum pinnatum	G ♂
——— hybridum	
Tulbagia alliacea	G ♃
Tulipa breyniana	G ♃
Urena lobata	S ♄
Urtica reticulata	S ♄
——— rufa	S ♃
——— rugosa	S ♄
Verbena orubica	S ♃
——— mutabilis	S ♄
——— triphylla	G ♄
Verea acutifolia	S ♄
——— crenata	
Veronica decussata	G ♄
——— Derwentii	S ♃
Viminaria denudata	G ♄
Vitex negundo	S ♄
Volkamenia ligustrina	S ♄
Willdenowia teres	G ♃
Witheringia solanacea	S ♄
Xanthium fruticosum	G ♄
Zamia debilis	♄
Zirea ulicifolia	G ♄
——— Smithii	G ♄

JULY, AUGUST, AND SEPTEMBER.

Abroma augusta	S ♄
Achania mollis	S ♄
Adiantum radula	S ♃
Aeschynomene bispinosa	S ☉
——— sesban	S ♂
Albuca exuviata	G ♃
——— maxima	G ♃
Allamanda cathartica	S ♄
Alpinia maculata	S ♃
——— racemosa	S ♃
Anagallis africana	G ♃
——— monelli	G ♃
Anneslea spinosa	S ♃
Anthericum alooides	G ♃
——— asphodeloides	
——— costatum	
——— frutescens	
——— hispidum	
——— paniculatum	
——— pugioniforme	
Antirhinum macrocarpon	G ♃
——— molle	G ♄
——— origanifolium	G ♃
——— triornithophorum	G ♃
Aralia capitata	S ♄
——— sciodaphylla	
Arctotis argentea	G ♂
——— aspera	G ♄
——— auriculata	G ♄
Arctotis calendulacea	G ♄
——— repens	G ♃
——— scariosa	G ♄
Ardisia acuminata	G ♄
——— crenulata	
——— excelsa	
——— lateralis	
——— solanacea	
Arduina bispinosa	G ♄
Asclepias crispa	S ♄
——— curassavica	S ♄
——— fruticosa	G ♄
——— gigantea	S ♄
——— parviflora	S ♄
——— procera	S ♄
——— undulata	S ♄
Aspalathus albens	G ♄
——— ericæfolius	G ♄
——— pedunculatus	G ♄
Asparagus retrofractus	G ♄
——— sarmentosus	
Astroloma humifusa	G ♄
Athanasia cinerea	G ♄
——— crithmifolia	
——— dentata	
——— parviflora	
——— trifurca	
Ayenia pusilla	S ♂
Banksia marginata	G ♄

Banksia nutans	G ♄
Bareliera prionithis	S ♄
——— cristata	S ♄
——— spinosa	S ♄
Bauera rubioides	G ♄
——— humilis	G ♄
Bellardiera longiflora	G ♄
——— mutabilis	G ♄
——— scandens	G ♄
Browallia elata	S ☉
Bucknera pedunculata	G ♄
——— viscosa	G ♄
——— capensis	G ♄
Budleja salvifolia	G ♄
Bupleurum coriaceum	G ♄
——— difforme	G ♄
——— spinosum	G ♄
——— villosum	G ♄
Bupthalmum maritimum	G ♄
Bystropogon canariense	G ♄
——— punctatum	G ♄
Cacalia articulata	G ♄
——— bicolor	G ♄
——— carnosa	G ♄
——— Kleinia	G ♄
Calceolaria pinnata	S ☉
Calendula dentata	G ♄
——— viscosa	G ♄
Cameraria latifolia	S ♄
Campanula aurea	G ♄
——— debilis	G ♃
——— laciniata	G ♃
——— muscosa	G ♃
Camphorosma monspeliaca	G ♄
Canna indica	S ♃
Capparis spinosa	S ♄
Celastrus lucidus	G ♄
——— pyracanthifolius	G ♄
Celosia paniculata	S ♄
Celsia arcturus	G ♂
Cenchrus ciliaris	S ♂
——— echinatus	S ♂
Cestrum laurifolium	S ♄
Chamærops humilis	G ♄
Cheiranthus tristis	G ♄
Chloranthus inconspicuus	S ♄
Chrysanthemum flosculosum	G ♄
——— frutescens	G ♄
——— lacerum	G ♄
Chrysocoma ciliata	G ♄
——— coma-aurea	G ♄
Cineraria amelloides	G ♄
Cineraria discolor	G ♄
——— lanata	G ♄
Clerodendron paniculatum	S ♄
Cocos nucifera	S ♄
Commellina africana	G ♃
——— longicaulis	S ♃
——— mollis	S ♃
Commersonia platyphylla	G ♄
Convolvulus dissectus	S ☉
——— floridus	S ♄
——— hermanniæ	G ♃
——— jalapa	S ♄
——— scoparius	S ♄
——— speciosus	S ♄
Costus arabicus	S ♃
——— speciosus	S ♃
Cotyledon fascicularis	G ♄
——— lasciniata	G ♄
Crassula ciliata	G ♄
——— cuitrata	G ♄
——— mollis	G ♄
——— perfoliata	G ♄
——— ramosa	G ♄
——— spathulata	G ♄
Crinum americanum	S ♃
——— asiaticum	S ♃
——— erubescens	S ♃
——— Latifolium	S ♃
Crossandra undulæfolium	S ♄
Crotolaria canescens	G ♄
Croton lineare	S ♄
——— sebiferum	G ♄
Cucumis melo	S ☉
Curcuma aromatica	S ♃
——— longa	S ♃
——— rotunda	S ♃
Cycas revoluta	S ♄
Cyclamen persicum	G ♃
Cynosurus ægyptiacus	S ☉
——— virgatus	S ☉
Cyperus fastigiatus	S ♃
——— vegetus	S ♃
Cyrtanthus angustifolius	G ♃
Datura fastuosa	S ☉
——— ferox	S ☉
——— levis	S ☉
——— metel	S ☉
Dianella cærulea	G ♃
——— divaricata	G ♃
——— ensifolia	S ♃
Dicksonia arborescens	G ♄
——— culcita	G ♃

Dionæa muscipula	S ♃
Dioscorea sativa	S ♃
Diosma crenata	G ♄
—— latifolia	G ♄
—— tetragona	G ♄
Disandra prostrata	G ♃
Dorstenia Brasiliensis	S ♃
—— contrajerva	S ♃
—— Houstonii	S ♃
Doryanthus excelsa	S ♄
Dracæna cærulea	S ♃
—— ensifolia	G ♃
Dracocephalum canariense	G ♄
Drimea ciliata	G ♄
—— elata	G ♄
Duranta ellisia	S ♄
Echium ferocissimum	G ♄
—— strictum	G ♄
Eclipta erecta	S ☉
Ehretia tinifolia	S ♄
Ehrharta paniculata	G ♃
Embothryum buxifolium	G ♄
—— sericeum	G ♄
Epidendrum fragrans	S ♃
—— fuscatum	S ♃
—— sinense	S ♃
Eranthemum pulchellum	S ♄
Erica acuminata	G ♄
—— agregata	G ♄
—— aurea	G ♄
—— Bandonia	G ♄
—— Broadleyana	G ♄
—— calycyna	G ♄
—— cerinthoides	G ♄
—— coccinea	G ♄
—— cubica	G ♄
—— minor	G ♄
—— cumulata	G ♄
—— cymosa	G ♄
—— decora	G ♄
—— elata	G ♄
—— exaltata	G ♄
—— exsurgens	G ♄
—— formosa	G ♄
—— fulgens	G ♄
—— fulgida	G ♄
—— fulva	G ♄
—— gemmifera	G ♄
—— globosa	G ♄
—— hirtiflora	G ♄
—— iguescens	G ♄
—— incarnata	G ♄
—— latifolia	G ♄
Erica longifolia	G ♄
—— lucida	G ♄
—— mucosa	G ♄
—— mucronata	G ♄
—— nitida	G ♄
—— Nivenia	G ♄
—— obliqua	G ♄
—— Parmentiera	G ♄
—— pilosa	G ♄
—— pinifolia	G ♄
—— propendens	G ♄
—— pumila	G ♄
—— purpurea	G ♄
—— reflexa	G ♄
—— rosea	G ♄
—— rugosa	G ♄
—— rupestris	G ♄
—— sanguinolenta	G ♄
—— Sainsburyana	G ♄
—— sexfaria	G ♄
—— speciosa	G ♄
—— spumosa	G ♄
—— Thalictriflora	G ♄
—— tricolor	G ♄
—— turgida	G ♄
—— Uharia	G ♄
—— verticillata	G ♄
—— vesita alba	G ♄
—— viridi purpurea	G ♄
Eriocephalus africanus	G ♄
—— racemosus	G ♄
Eriospermum folioliferum	G ♃
—— latifolium	G ♃
Eryngium fœtidum	S ♃
Erythrina herbacea	G ♄
Eugenia axillaris	S ♄
—— ligustrina	S ♄
Fagara Piperita	S ♄
—— Pterota	S ♄
—— Tragodes	S ♄
Fagonia cretica	G ♂
Fuchia lycioides	G ♄
Galega grandiflora	G ♄
—— stricta	G ♄
—— villosa	G ♄
Globba marantina	S ♃
—— purpurea	S ♃
—— sessiliflora	S ♃
Glycine bituminosa	G ♄
—— monophylla	G ♄
Gnaphalium cymosum	G ♄
—— ericoides	G ♄

Gnaphalium glomeratum G ♃
——— orientale G ♄
Gnidia grandis
——— radiata G ♄
——— simplex
Gompholobium fimbriatum
——— marginatum
——— polymorphum G ♄
——— tomentosum
——— venustum
Gomphrena arborescens S ♄
——— globosa S ☉
——— interupta S ☉
Goodenia calendulacea G ♄
——— grandiflora G ♂
——— lævigata G ♃
——— ovata G ♄
——— tenella G ♃
Gorteria fruticosa G ♄
Gratiola Monierii S ♃
Grewia orientalis S ♄
Hakea ilicifolia G ♄
Hæmanthus albiflos G ♃
——— tygrinus G ♄
Halloragis cercodia G ♄
Hamellia coccinea S ♄
Hebenstreitia dentata G ♂
——— aurea G ♂
Helenium alatum G ♂
Hellenia Allughas S ♃
Heliotropium curassavicum S ☉
——— grandiflorum G ♄
——— indicum S ☉
——— parviflorum S ♂
——— peruvianum G ♄
Hemimeris diffusa G ♄
——— linearis G ♄
——— urticifolia G ♄
Hermannia decumbens G ♄
——— lavandulæfolia G ♄
——— præmorsa G ♄
Hibiscus phœniceus S ♂
Hieracium fruticans G ♄
Hydrocotyle asiatica G ♃
Hyocyamus aureus G ♃
Hypericum balearicum G ♄
——— coris G ♄
——— mongynum G ♄
Hypoxis decumbens G ♃
——— grandiflora G ♃
——— sobolifera G ♃
——— villosa G ♃

Iberis semperflorens G ♄
Illex cassine G ♄
Illicebrum lanatum S ♂
Inula viscosa G ♄
Jasminum auriculatum
——— azoricum
——— glaucum
——— gracile G ♄
——— grandiflorum
——— multiflorum
——— odoratissimum
——— undulatum
——— sambac
——— scandens S ♄
——— trinerve
Jatropha glandulosa S ♄
——— multifida
Jussieua erecta S ♂
——— exaltata S ♂
Justicia bicaliculata S ☉
——— lucida S ♄
——— nitida S ♄
——— orchioides G ♄
——— picta S ♄
Lachenalia serotina G ♃
——— viridis G ♃
Lambertia formosa G ♄
Lantana aculeata
——— camara S ♄
——— melissifolia
——— odorata
Lasiopetalum ferugineum G ♄
Lavandula multifida
——— pinnata G ♄
——— viridis
Lepidium divaricatum G ♃
Leysera gnaphaloides G ♄
——— paleacea
Linum africanum
——— arboreum
——— flavum G ♄
——— maritimum
——— quadrifolium
——— trigynum
Lobelia assurgens S ♄
——— bicolor G ♄
——— bidentata G ♄
——— coronopifolia G ♄
——— debilis G ♄
——— erinus G ♃
——— erinoides G ♂
——— gracilis G ♃

Lobelia hirsuta . G ♃
——— longiflora . G ♃
——— minuta . G ♃
——— pinifolia . G ♄
——— simplex . G ♄
——— speculum . G ♂
——— triquetra . G ♃
Lonicera japonica . G ♄
Lotus dorycnium } G ♄
——— hybridus
——— jacobæus
Mahernia grandiflora G ♄
Malachra capitata . S ☉
Malphigia crassifolia . S ♄
Malva capensis } G ♄
——— grossularifolia
Manulea tomentosa . G ♂
Maranta arundinacea S ♃
——— sylvatica . . S ♃
Marrubium africanum G ♃
Medicago arborea . G ♄
Melissa fruticosa . G ♄
Menyanthes indica . G, ♃
Messembry anthemum { barbatum, bracteatum } brevifolium, compressum, cordifolium, cruciatum, deflexum, densum, dolabriforme, echinatum, filamentosum, glaucoides, hamosum, heterophyllum, hirsutum, hirtellum, hispidum, lacerum, læve, lanceolatum, linguiforme, minor, longum, loreum, mutabile, pallens, papulosum, radiatum, retroflexum } G ♄
Messembry-anthemum { scalpatum, speciosum, spectabile, stellatum, striatum, succulentum, tuberosum, viridiflorum } G ♄
Messerchmidia fruticosa G ♄
Mimosa pudica . S ☉
——— sensitiva . S ♄
Mimulus aurantiacus G ♄
Murraya exotica . S ♄
Musa coccinea } S ♃
——— paradisiaca
——— sapientum
Myrtus communis in varieties } G ♄
Nerium coronarium . S ♄
——— oleander . G ♄
——— flore pleno . G ♄
Nicotiana odorata . G ♃
Nymphæa stellata . S ♃
Ochna squarrosa . S ♄
Oldenlandia umbellata . S ♃
Ononis natrix } G ♄
Othonna coronopifolia
Palavia malvæfolia . S ☉
Pancratium amancaes } S ♃
——— amboynense
——— caribbæum
——— littorale
——— speciosum
——— uniflorum
Passiflora aurantia } G ♄
——— hirsuta
——— minima
——— seratifolia
Passerina capitata } G ♄
——— grandiflora
Pelargonium acetosum G ♄
——— alchemilloides G ♃
——— anemonifolium G ♄
——— asperum } G ♄
——— betonicum
——— capitatum
——— chamædrioides
——— citri-odorum
——— coriandrifolium G ♂
——— crispum } G ♄
——— cuculatum
——— flavum

Pelargonium fragile } G ♄
——— graveolens }
——— grossularifolium G ♃
——— hybridum . G ♄
——— hymenoides G ♃
——— inquinans
——— incisum
——— lobatum
——— odoratissimum
——— papilionaceum } G ♄
——— quercifolium
——— radula major
——— minor
——— scrabrum
——— tabulare G ♃
——— tricolor
——— trifolium
——— triste } G ♄
——— vitifolium
——— zonale
Pentapetes phœnicea . S ♂
Perotis latifolia . S ☉
Petiveria allicea . S ♄
Pharnaceum incanum . G ♃
——— lineare . G ♄
Phaseolus caracalla . S ♄
Philydrum lanuginosum G ♂
Phylica buxifolia .
——— cordata .
——— myrtifolia } G ♄
——— parviflora
——— racemosa
——— stipularis
Physalis peruviana } S ♄
Phytolacca dioica }
——— icosandra . S ♃
——— octandra . G ♃
Pimelia linifolia . G ♄
——— grandiflora . G ♄
Pitcairnia latifolia . S ♄
Plantago capensis . G ♄
Plumbago zeylanica
Plumeria alba
——— aurantia } S ♄
——— longifolia
——— obtusa
——— rubra
Pogonia debili
——— latifolia
——— pustulata } G ♄
——— scabra
Polygala alopecuroides

Polygala heisteria
——— mixta
——— myrtifolia } G ♄
——— oppositifolia
——— squarrosa
Polyanthes tuberosa . G ♃
Polypodium effusum . S ♃
——— serrulatum S ♃
Pontedera dilatata . S ♃
Protea argentea
——— abrotanifolia
——— decumbens
——— divaricata
——— formosa
——— fucifolia
——— latifolia
——— linearis } G ♄
——— patula
——— pinifolia
——— pinnata
——— pulchella
——— rangeforina
——— tomentosa
——— tortuosa
Psoralea bituminosa
——— glandulosa } G ♄
——— palæstina
Pteris caudata . S ♃
——— serrata S ♃
Punica alba
——— chinensis } G ♄
——— flava
——— nana
Rajania cordata . S ♃
Rhamnus elipticus . S ♄
——— prinoides . G ♄
Rhaphis flabelliformis S ♄
Ricinus communis . S ♂
Rivinia brasiliensis
——— canescens
——— humilis } S ♄
——— lævis
——— octandra
Roella ciliata . . G ♄
——— squarrosa . G ♄
Roxburghia viridiflora S ♄
Ruellia biflora
——— ciliata
——— clandestina } S ♄
——— cristata
——— fulgida
——— formosa

Ruellia paniculata	S ♄
—— ringens	S ♄
Ruta chalapense	G ♄
Salicornia arabica	S ♄
Salvia amarissima	G ♃
—— aurea	G ♄
—— canariensis	G ♄
—— chamædrioides	G ♄
—— coccinea	G ♄
—— formosa	G ♄
—— pseudo-coccinea	G ♄
—— scabra	G ♄
—— serotina	G ♄
—— spinosa	G ♄
—— tingitana	G ♄
Samolus littoralis	G ♃
Santolina anthemoides	G ♃
—— pinnata	G ♃
Scabiosa africana	G ♄
—— attenuata	G ♄
—— cretica	G ♄
Schotia Tamarindifolia	S ♄
Scrophularia sambucifolia	G ♃
Sedum dioicum	G ♂
—— divaricatum	G ♄
Selago spuria	G ♂
Senecio purpurescens	G ♃
—— rigidus	G ♄
—— rosmarinifolius	G ♄
—— venustus	G ♄
Sida alnifolia	S ☉
—— angustifolia	S ☉
—— carpinifolia	S ☉
—— cordifolia	S ☉
—— cristata	S ☉
—— humilis	S ☉
—— jatrophoides	S ☉
—— mauritanica	S ☉
—— molissima	S ♂
—— occidentalis	S ☉
—— paniculata	S ☉
—— pilosa	S ☉
—— spinosa	S ☉
Sida triloba	S ☉
—— triquetra	S ♂
—— umbellata	S ☉
—— vesicaria	S ☉
Stratiotes alismoides	S ♃
Swainsonia coronillæfolia	G ♄
—— galegifolia	G ♄
Sysimbrium millefolium	G ♄
Solanum igneum	S ♄
Spilanthus oleracea	S ☉
—— pseudo acmella	S ☉
Statice monopetala	S ♄
Struthiola virgata	G ♄
Tabernæmontana citrifolia	S ♄
Tarchonanthus camphoratus	G ♄
Tetragonia decumbens	G ♄
—— spicata	G ♄
—— tetrapteris	G ♄
—— expansa	G ♄
Thalia dealbata	S ♃
Tillandsia lingulata	S ♄
—— nutans	S ♄
—— serrata	S ♄
Tournefortia volubilis	S ♄
Tradescantia cristata	S ☉
—— zannonia	S ♃
Turnera angustifolia	S ♂
—— racemosa	S ☉
—— ulmifolia	S ♄
Uvularia chinensis	G ♃
Varronia curassavica	S ♄
—— lineata	S ♄
—— Martinesensis	S ♄
—— mirabiloides	S ♄
Yucca aloifolia	G ♄
Zamia furfuracea	G ♄
—— integrifolia	G ♄
Ziziphus vulgaris	G ♄
Zygophyllum arboreum	G ♄
—— fœtidum	G ♄
—— maculatum	G ♄
—— morgsana	G ♄
—— sessilifolium	G ♄

AUGUST, SEPTEMBER, AND OCTOBER.

Achania malvaviscus	G ♄
Albuca minor	G ♃
Amaryllis aurea	S ♃
—— orientalis	G ♃
—— revoluta	G ♃
—— sarniensis	G ♃
Amomum casumunar	S ♃
—— granum paridisi	S ♃
—— purpureum	S ♃
—— zedoaria	S ♃
—— zerumbet	S ♃
—— zingiber	S ♃

Anthericum albucoides
——— elatum
——— pugioniforme
——— revolutum
——— triflorum — G ♃
Aponogeton angustifolium
——— distachyon
——— monostachyon
Banksia verticillata
Basella alba — S ☌
——— rubra — S ☌
Boerhavia diffusa — S ♃
——— erecta — S ♃
Bromelia bracteata — S ♃
Cactus cochinillifera — S ♄
Cassine capensis
——— lævigata — G ♄
——— maurocennia
Celastrus cassinoides — G ♄
——— octagonus — S ♄
Celtis micrantha — S ♄
Cerbera laurifolia
——— manghas — S ♄
Chenolea diffusa — G ♄
Chiococca racemosa — S ♄
Chlamysporum juncifolium — G ♃
Chrysocoma ciliata — G ♄
——— coma aurea — G ♄
Codon Royeni — G ☌
Coffea arabica — S ♄
——— occidentalis — S ♄
Columnea hirsuta — S ♄
——— scandens — G ♄
Commellina africana — G ♃
Crassula lactea — G ♄
Croton cascarilla — S ♄
——— teglium — S ♄
Eclipta prostrata — S ☌
Erica arbutiflora
—— Archeria
—— cernua
—— coccinea
—— consimilis
—— corifolia
—— cylindrica
—— declinata — G ♄
—— fastigiata
—— flaccida
—— formosa
——— coccinea
—— horizontalis
—— mellifera
—— perlata
Erica perlata rubra
—— obliqua
—— pinea
—— planifolia
—— proboscidea
—— quadriflora
—— ramentacea — G ♄
—— sanguinea
—— serratifolia
—— spiralis
—— tabularia
—— taxifolia
—— torta
Erythrina speciosa — S ♄
Eucomis pupureocaulis — G ♃
Euphorbia cucumerina — S ♄
——— heptagona — S ♄
——— heterophylla — S ☌
——— nudiflora — S ♄
——— officinarnm — S ♄
Gompholobium grandiflorum — G ♄
——— latifolium — G ♄
Gordonia lasianthus — G ♄
Hamellia grandiflora — S ♄
Hermannia plicata — G ♄
Hibiscus grandiflorus — G ♄
Hæmanthus coccineus — G ♃
——— obliquus — G ♃
——— orbicularis — G ♃
Humea elegans — G ☌
Hyacinthus corymbosus — G ♃
——— revolutus
Ipomopsis elegans — G ☌
Ixora pavetta
Jatropha manihot
——— panduræfolia — S ♄
Lagerstrœmia indica
——— flos reginæ
Liatris odoratissimus — G ♃
Lobelia fulgens — G ☌
Massonia violacea — G ♃
Messembry-anthemum acinaciforme
angustatum
——— caninum
——— carneum
——— fastigiatum
——— felinum — G ♄
——— forficatum
——— grossum
——— murinum
——— ramulosum
——— rigidum

Messembryanthemum rostratum	G	♄
Messembryanthemum semicylindricum	G	♄
Messembryanthemum tigrinum	G	♄
Mimosa longissima	G	♄
Nissolia fruticosa	G	♄
Osteospermum grandiflorum	G	♄
Osteospermum moniliferum	G	♄
Osteospermum spinosum	G	♄
Panax suffruticosa	S	♄
Passiflora glauca	S	♄
Passiflora heterophylla	S	♄
Passiflora holosericea	S	♄
Passiflora quadrangularis	S	♄
Passiflora suberosa	S	♄
Pelargonium daucum	G	♃
Pelargonium rigidum	G	♄
Phylica eriophorus	G	♄
Phylica imbricata	G	♄
Phylica obtusa	G	♄
Phylica spicata	G	♄
Phylica squarrosa	G	♄
Pogonia tuberculata	G	♄
Protea candicans	G	♄
Protea caudata	G	♄
Protea corymbosa	G	♄
Protea incurva	G	♄
Protea racemosa	G	♄
Protea radiata	G	♄
Protea tomentosa	G	♄
Royena glabra	G	♄
Rubia fruticosa	G	♄
Septas capensis	G	♃
Statice pectinata	G	♃
Thea viridis	G	♄
Verbascum multifidum	G	♃
Volkameria aculeata	S	♄
Xylophylla angustifolia	S	♄
Xylophylla latifolia	S	♄

SEPTEMBER, OCTOBER, AND NOVEMBER.

Aletris pumila	G	♃
Asparagus scandens	G	♄
Bacharis nerifolia	G	♄
Baeckia virgata	G	♄
Begonia Evansia	S	♃
Cacalia articulata	G	♄
Cacalia klenia	G	♄
Casuarina equisetifolia		
Cameraria angustifolia	S	♄
Cameraria lutea	S	♄
Celosia trigyna	S	☉
Cobea scandens	G	♄
Duranta Plumieri	S	♄
Erica bracteata	G	♄
Erica carneola	G	♄
Erica clavata	G	♄
Erica concinna	G	♄
Erica cruenta	G	♄
Erica curviflora	G	♄
Erica De Cliffordia	G	♄
Erica droseroides	G	♄
Erica flava	G	♄
Erica florabunda	G	♄
Erica globosa	G	♄
Erica lanuginosa	G	♄
Erica lutea	G	♄
Erica margaritacea	G	♄
Erica pedunculata	G	♄
Erica pinea	G	♄
Erica pulchella	G	♄
Erica pygmœa	G	♄
Erica rosea	G	♄
Erica sessiliflora	G	♄
Erica stricta	G	♄
Erica villosa	G	♄
Erica virescens	G	♄
Erigeron fœtidum	G	♃
Glycine caribbæa	S	♄
Hæmanthus pubescens	G	♃
Hæmanthus spiralis	G	♃
Jonesia asoca	S	♄
Jonesia pinnata	S	♄
Laurus indica	G	♄
Leea crispa	S	♃
Lobelia Brantii	G	♃
Lopezia hirsuta	S	♂
Lopezia racemosa	S	☉
Medeola angustifolia	G	♄
Medeola asparagoides	G	♄
Medeola myrtifolia	G	♄
Messembryanthemum latum	G	♄
Phlomis leonurus	G	♄
Phlomis nepetifolia	G	♄
Piper magnolifolia	S	♄
Renealmia calcarata	S	♃
Scævola crassifolia	G	♄
Schotia speciosa	S	♄
Senecio longifolius	G	♄

Stapelia ambigua
——— aperta
——— barbata
——— bisulca
——— cæspitosa
——— campanulata
——— decora
——— deflexa
——— gemmiflora
——— flexuosa
——— hirsuta
——— humilis
——— lentiginosa
——— mammillaris
——— moschata
——— pedunculata
——— pulla
——— radiata
——— revoluta
——— rugosa
——— tubata
} S ♄

Stapelia vetula . S ♄
Statice juniperifolia
——— mucronata
——— purpurascens
——— scabra
——— sinuata
} G ♃
Tanacetum flabellifolia G ♄
——— suffruticosum G ♄
Trichomanes canariense G ♃
Usteria scandens . G ♄
Verbena alata . . S ♃
——— aubletia . G ♂
——— nodiflora . . S ♃
Vinca rosea . . S ♄
——— var. alba . S ♄
Westringia rosmarinacea G ♄
Witheringia solanacea S ♄
Xeranthemum canescens
——— fasciculatum
——— argeteum
} G ♄

OCTOBER, NOVEMBER, AND DECEMBER.

Aletris arborea
——— pumila
} S ♄
Amaryllis crispa . G ♃
——— pumilio . S ♃
Asclepias arborescens . S ♄
Cestrum diurnum . S ♄
——— nocturnum . S ♄
Chironia linoides . G ♄
Columnea coccinea
——— rotundifolia
} S ♄
Conyza rugosa . G ♄
Dryandra florabunda
——— formosa
——— nivea
——— plumosa
} G ♄
Erica cafra
—— conferta
—— glutinosa
—— gracilis
—— laxa
—— leucanthera
—— mammosa
—— multiflora
—— pubescens
——— minor
—— pyramidalis
—— rupestris
—— Sæbana aurantia
} G ♄

Erica Sæbana coccinea
——— fusca
——— lutea
——— viridis
—— tenella
} G ♄
Limodorum Hyacinthinum G ♃
Manulea argentea . G ☉
Panax aculeatum . G ♄
Polygala tenella . . G ♄
——— tenuifolia . G ♄
Stapelia articulata
——— asterias
——— Buffonia
——— concinna
——— crassa
——— clypeata
——— divaricata
——— elegans
——— geminata
——— glandulosa
——— glauca
——— Gordonii
——— grandiflora
——— maculosa
——— orbiculata
——— picta
——— punctata
——— pulvinata
} S ♄

Stapelia reclinata	S ♄	Stapelia ruffa	S ♄
—— reticulata		—— sororia	

NOVEMBER, DECEMBER, AND JANUARY.

Clitoria fruticosa	S ♄	Hibiscus flore pleno	S ♄
Diosma ericifolia	G ♄	Mimosa discolor	G ♄
Erica decora	G ♄	—— pinifolia	G ♄
—— florabunda		Pennæa sarcocolla	G ♄
—— laxa		Phylica ericoides	G ♄
—— paniculata		Samara pentandra	G ♄
—— pellucida		Stapelia trisulca	S ♄
—— recurvata		—— variegata	
—— rigida		—— verucosa	S ♄
Euclea racemosa	G ♄	Strumaria pinifolia	G ♃
Hibiscus mutabilis	S ♄		

DECEMBER, JANUARY, AND FEBRUARY.

Cluytia alaternoides	G ♄	Pitcairnia angustifolia	S ♄
—— glauca		Strelitzia augusta	S ♃
—— heterophylla		—— angustifolia	
Dryandra armata	G ♄	—— farinosa	
—— cuneata		—— juncea	
Erica picta	G ♄	—— microphylla	
—— rugata		—— ovata	
—— tetrapetala		—— reginæ	
Lantana africana	G ♄		

MAGNIFICENT PLANTS NOT YET FLOWERED.

Areca Catechu	S ♄	Cycas circinalis	S ♄
—— Montana		Dillenia speciosa	
—— oleracea		Elate sylvestris	
Bactris major		Elais guineensis	
—— minor		Ficus elliptica	
Barringtonia speciosa		—— nymphæfolia	
Borassus flabelliformis		Garcinia mangostana	
*Buonapartia juncea		Gustavia augusta	
Carrolinea insignis		Pandanus odoratissimus	
—— princeps		Phœnix dactylifera	
Caryophyllus aromaticus		—— farinifera	
Corypha umbraculifera		Pinus lanceolata	G ♄
Chamærops Hystrix		Raphis acaulis	S ♄
—— Palmetto		Thrinax parviflora	S ♄
—— serrulata		Zamia Australis	G ♄
Cocos nucifera		—— cycadifolia	S ♄
†Cupressus columnaris	G ♄	—— debilis	
Cussonia spicata	G ♄	—— pugens	
—— thyrsiflora	G ♄		

* *Agave filamentosa*—I find that it flowered at Kew long since, and that their is a drawing by Bauer.

† *Araucaria excelsa.*

NOTE—There are many of the foregoing Plants which flower for the greater part of the Summer, and also some which flower at various seasons.

The distinguishing marks are as follow.

S ♄ Stoveshrub.
G ♄ Greenhouse shrub.
S ♃ Stove perennial.
G ♃ Greenhouse perennial.
S ♂ Stove biennial
G ♂ Greenhouse biennial.
S ☉ Stove annual.
G ☉ Greenhouse annual.

NOTE—That during the Winter months, when there are but few things in flower, the houses are ornamented with forced flowers, such as Roses, Lilac, Rhododendron, and various others which are then in abundance.

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ERRATA.

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